

TABLE 4-1 DEMAND RESPONSE BASE CASE PROGRAM OPTIONS AND ELIGIBLE MARKETS

DR Program Option	Program Description	Eligible Markets
DLC AC (Switch)	The compressor of the air conditioner is remotely shut off (cycled) by the system operator for periods that may range from 7 ½ to 15 minutes during every 30-minute period (i.e., 25%-50% duty cycle)	Residential and Non-Residential Customers
DLC AC (Thermostat) <sup>63</sup>	The system operator can remotely raise the AC's thermostat set point during peak load conditions, lowering AC load.	Residential and Non-Residential Customers
DLC Pool Pumps	The swimming pool pump is remotely shut off by the system operator for periods normally ranging from 2 to 4 hours.	Residential and Non-Residential Customers
DLC Water Heaters	The water heater is remotely shut off by the system operator for periods normally ranging from 2 to 8 hours.	Residential and Non-Residential Customers
DLC Room AC	The compressor of the air conditioner is remotely shut off (cycled) by the system operator for periods that may range from 7 ½ to 15 minutes during every 30-minute period (i.e., 25%-50% duty cycle)	Residential Customers
DLC Lighting	A portion of the lighting load is remotely shut off by the system operator for periods normally ranging from 2 to 4 hours.	Non-Residential Customers
DLC Agricultural Irrigation Pump Control	The irrigation pump is remotely shut off by the system operator for periods normally ranging from 2 to 4 hours.	Agricultural Farms
Time of Use Rates	A retail rate with different prices for usage during different blocks of time. Daily pricing blocks could include on-peak, mid-peak, and off-peak periods. Pricing is pre-defined, and once established do not vary with actual cost conditions. Includes the four residential TOU rates Ameren already has.	Residential and Non-Residential Customers
Capacity Bidding Programs	CBP is a flexible bidding program offering qualified businesses payments for agreeing to reduce when a CBP event is called. Make monthly nominations and receive capacity payments based on the amount of capacity reduction nominated each month, plus energy payments based on your actual kilowatt-hour (kWh) energy reduction when an event is called. The amount of capacity nomination can be adjusted on a monthly basis. Penalties occur if load nominations are not met.	Non-Residential Customers
Demand Bidding Programs	DBP is a year-round, flexible, Internet-based bidding program that offers business customers credits for voluntarily reducing power when a DBP event is called.	Non-Residential Customers
Battery Storage <sup>64</sup>	Dispatch of residential customer-sited batteries during critical peak hours.	Residential Customers

#### 4.1.3 Demand Response Potential Assessment Approach Overview

The analysis of DR, where possible, closely follows the approach outlined for energy efficiency. The framework for assessing the cost-effectiveness of demand response programs is based on *A Framework for Evaluating the Cost-*

<sup>63</sup> EO-2023-0099 1F(1) (Special Contemporary Issues)

<sup>64</sup> EO-2023-0099 1F(3), EO-2023-0099 1F(4), EO-2023-0099 1G(4) (Special Contemporary Issues) The battery storage system was not found to be cost-effective via the TRC test. Regardless of program delivery option. Given that residential-sized systems were not cost-effective, it was assumed that larger systems with more significant costs were also not cost-effective.

*Effectiveness of Demand Response, prepared for the National Forum on the National Action Plan (NAPA) on Demand Response.*<sup>65</sup> Additionally, GDS reviewed the May 2017 National Standard Practice Manual published by the National Efficiency Screening Project.<sup>66</sup> GDS utilized this guide to define avoided ancillary services and energy and/or capacity price suppression benefits.

The demand response analysis was conducted using the GDS Demand Response Model. The DR Model determines the estimated savings for each demand response program by performing a review of all benefits and cost associated with each program.<sup>67</sup> GDS developed the model such that the value of future programs could be determined and will help facilitate demand response program planning strategies. The model contains approximately 50 required inputs for each program including: expected life, coincident peak (“CP”) kW load reductions, proposed rebate levels, program related expenses such as vendor service fees, marketing and evaluation cost and on-going O&M expenses. This model and future program planning features can be used to standardize the cost-effectiveness screening process between Ameren Missouri departments interested in the deployment of demand response resources.

The TRC Test was used to determine the cost-effectiveness of each demand response program. Benefits are based on avoided generation capacity, energy (including load shifting) and T&D infrastructure costs. Costs include incremental program equipment costs (such as control switches or smart thermostats), fixed program capital costs (such as the cost of a central controller), program administrative, marketing and evaluation costs. Incremental equipment program costs are included for both new and replacement units (such as control switches) to account for units that are replaced at the end of their useful life.<sup>68</sup>

The demand response analysis includes estimates of technical, economic, achievable, and program potential. Achievable potential is broken into maximum and realistic potential in this study:

**MAP** represents an estimate of the maximum cost-effective demand response potential that can be achieved over the study period. For this study, this will be defined as customer participation in demand response program options that reflect a “best practices” estimate of what could eventually be achieved. MAP assumes no barriers to effective delivery of programs.

**RAP** represents an estimate of the amount of demand response potential that can be realistically achieved over the study period. For this study, this will be defined as achieving customer participation in demand response program options that reflect a realistic estimate of what could eventually be achieved assuming typical or “average” industry experience. RAP is a discounted MAP, by considering program barriers that limit participation, therefore reducing savings that could be achieved.

Both MAP and RAP include the impact of energy efficiency gains realized in the Energy Efficiency Potential study. These gains include the changes that occur when old equipment is replaced with high efficiency equipment. Yearly impacts were developed for space cooling (used for DLC of AC programs) and whole building (used for rate programs that affect multiple measures). The space cooling efficiency gains were used for the direct load control of air conditioning programs, and the general sector efficiency gains were used for all other programs included in MAP and RAP potential.

#### 4.1.4 Avoided Costs

Demand response avoided costs are consistent with those utilized in the energy efficiency potential analysis and were provided by Ameren Missouri. The primary benefit of demand response is avoided generation capacity, resulting from a reduction in the need for new peaking generation capacity. Demand response can also produce energy related

<sup>65</sup> Study was prepared by Synapse Energy Economics and the Regulatory Assistance Project, February 2013.

<sup>66</sup> [National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources](#), May 18, 2017, Prepared by The National Efficiency Screening Project

<sup>67</sup> 20 CSR 4240-20.050 (5)(A)

<sup>68</sup> 20 CSR 4240-20.050 (5)

benefits. Demand response programs can also potentially delay the construction of new transmission and distribution lines and facilities, which is reflected in avoided T&D costs. If the demand response option is considered “load shifting”, such as direct load control of electric water heating, the consumption of energy is shifted from the control period to the period immediately following the period of control. If the program is not considered to be “load shifting” the measure is turned off during peak control hours, and the energy is saved altogether. The number of annual control hours for all direct load control programs was determined by GDS in collaboration with Ameren Missouri.

#### 4.1.5 Demand Response Program Assumptions

This section briefly discusses the general assumptions and sources that will be used to complete the demand response potential analysis.

**Load Reduction<sup>69</sup>:** Demand reductions were based on various secondary data sources including the FERC and other industry reports, including demand response potential studies. Direct load control options are typically calculated based on a per-unit kW demand reduction whereas rate-based DR options and aggregator programs are typically assumed to reduce a percentage of the total facility peak load.

TABLE 4-2 DEMAND RESPONSE LOAD REDUCTION IMPACTS

Program	Residential Load Reduction (kW)	Business Load Reduction (kW)
DLC Central AC	1.06	1.60
DLC Room AC	0.50	N/A
DLC Water Heating	0.41	0.90
DLC Pool Pumps	1.36	2.00
DLC Lighting	N/A	8.9% of CP Billing Demand
DLC Agricultural Irrigation	N/A	44.00
Time of Use - Evening/Morning Savers	0.3% of CP Billing Demand	N/A
Time of Use - Overnight Savers	6.8% of CP Billing Demand	N/A
Time of Use - Smart Savers	11.8% of CP Billing Demand	N/A
Time of Use - Ultimate Savers	12.9% of CP Billing Demand	N/A
Battery Storage	3.00	N/A
Capacity Bidding	N/A	19.5% of CP Billing Demand
Demand Bidding	N/A	7% of CP Billing Demand

**Eligible Control Units:** The number of control units (or demand response equipment) per participant were calculated based on the average number of units in homes in the Ameren Missouri territory. This was used to determine the total equipment cost.

<sup>69</sup> 20 CSR 4240-20.050 (3)(G)1

**Useful Life:** The useful life of equipment used in demand response programs, such as load control switches, smart thermostats, or AMI equipment, was determined using TRMs, and data from manufacturers. This useful life was used to determine when equipment needs to be re-installed in the study after the device has failed, therefore adding a second equipment cost for some participants in the study. GDS used a useful life of 20 years for AMI meters<sup>70</sup>, 11 years for smart thermostats<sup>71</sup>, 10 years for level 2 EV chargers<sup>72</sup>, and 10 years for load switches.<sup>73</sup>

**Equipment and Incentive Costs:** Equipment costs were included for each new participant. Incentives were included for all programs in the Base Case. These costs were either on a per participant, per kW or per kWh basis (noted in table).<sup>74</sup>

TABLE 4-3. ASSUMED BASE CASE EQUIPMENT AND INCENTIVE COSTS<sup>75</sup>

Sector	Program	Equipment & Installation Cost	Incentive Cost
Residential	DLC Central AC	\$150 for thermostat: \$100 participant cost, \$50 rebate	\$25/participant-year for RAP; \$30/participant-year for MAP
	DLC Room AC	\$270	\$25/participant-year for RAP; \$30/participant-year for MAP
	DLC Water Heating	\$768	\$25/participant-year for RAP; \$30/participant-year for MAP
	DLC Pool Pumps	\$146	\$25/participant-year for RAP; \$30/participant-year for MAP
	Time of Use Rates	N/A	N/A
	Battery Storage	\$11,781	N/A
Non-Residential	DLC Central AC	\$250 for thermostat: \$200 participant cost, \$50 rebate	\$50/participant-year for RAP; \$60/participant-year for MAP
	DLC Water Heating	\$768	\$50/participant-year for RAP; \$60/participant-year for MAP
	DLC Pool Pumps	\$146	\$50/participant-year for RAP; \$60/participant-year for MAP
	DLC Lighting	\$1,900	\$50/participant-year for RAP; \$60/participant-year for MAP
	DLC Agricultural Irrigation	\$1,804	\$42/kW-year
	Capacity Bidding	\$0	\$45/kW-year
	Demand Bidding	\$0	\$0.50/kWh-year

<sup>70</sup> Ameren Illinois AMI Cost/Benefit Analysis, 2012

<sup>71</sup> Illinois Technical Reference Manual 2018

<sup>72</sup> US DOE, Costs Associated with Non-Residential EV Supply Equipment, 2015

<sup>73</sup> Freeman, Sullivan & Co Cost Effectiveness of CECONY Demand Response Programs 2013; PA Act 129 Order 2013

<sup>74</sup> 20 CSR 4240-20.050 (3)(G)5A; 20 CSR 4240-20.050 (3)(G)5B

<sup>75</sup> 20 CSR 4240-20.050 (5)(B)2

**Program Costs:** One-time program development costs of \$400,000 were included in the first year of the analysis for new programs<sup>76</sup>. This cost was split between similar programs. No program development costs are assumed for programs that already exist. Each program includes an evaluation cost, marketing cost (higher for MAP than RAP), and administration cost. All program costs were escalated each year by the general rate of inflation assumed for this study.

**Eligible Market Size:** For direct load control programs, the size of the eligible market was determined by multiplying the forecast of Ameren Missouri’s customers by the saturation of the end use to be controlled. End use saturations were obtained from the 2019 primary research conducted by ODC in the Ameren Missouri service area to help inform the 2020 MPS.<sup>77</sup>

GDS assumed that Ameren Missouri’s AMI will be fully deployed by 2024.<sup>78</sup> Two-way communication is fundamental for these pricing programs and AMI meters allow for hourly load data to be read and transmitted to the utility. Since it is imperative that hourly data must be read for rate programs, GDS assumed AMI meters were required to participate in the Time of Use program. No other programs in the Base Case required AMI.<sup>79</sup>

#### 4.1.6 DR Program Adoption Levels

Long-term program adoption levels (or “steady state” participation) represent the enrollment rate once the fully achievable participation has been reached. GDS has reviewed industry data and program adoption levels from several utilities’ DR programs.

Customer participation in new demand response programs is assumed to reach the steady state adoption rate over a five-year period. The path to steady state customer participation follows an “S-shaped” curve, in which participation growth accelerates over the first half of the five-year period, and then slows over the second half of the period (see Figure 4-1). GDS reflected the planned participation in DR programs during MEEIA Cycle 4 in the assessment of future potential in MEEIA Cycle 5 and beyond.

GDS used ODC research to determine steady state adoption rates when possible. For the residential sector, ODC had data for direct load control of air conditioning, direct load control of water heating, and rate programs. For the business sector, ODC had data for capacity bidding, direct load control of air conditioning, direct load control of water heating, and rate programs. For rate programs, the ODC survey did not ask about specific rates, and only if a customer would be willing to participate in a rate program in general. GDS split this rate program adoption rate between Peak Time Savings, Time of Use, and Critical Peak Pricing programs. The proportions of each rate program were based upon secondary research. This secondary research is sourced in Appendix D. For programs where GDS did not have ODC data, other research or potential studies were used. Table 4-4 provides the Base Case long-term adoption rates for MAP and RAP. Annual adoption rates, sources, and specific assumptions for each program are in Appendix D.

<sup>76</sup> Tennessee Valley Authority Potential Study Vol. 3: Demand Response Potential Study, Global Energy partners, December 2011

<sup>77</sup> 20 CSR 4240-20.050 (2)

<sup>78</sup> 20 CSR 4240-20.050 (4)(C)

<sup>79</sup> 20 CSR 4240-20.050 (3)(D)

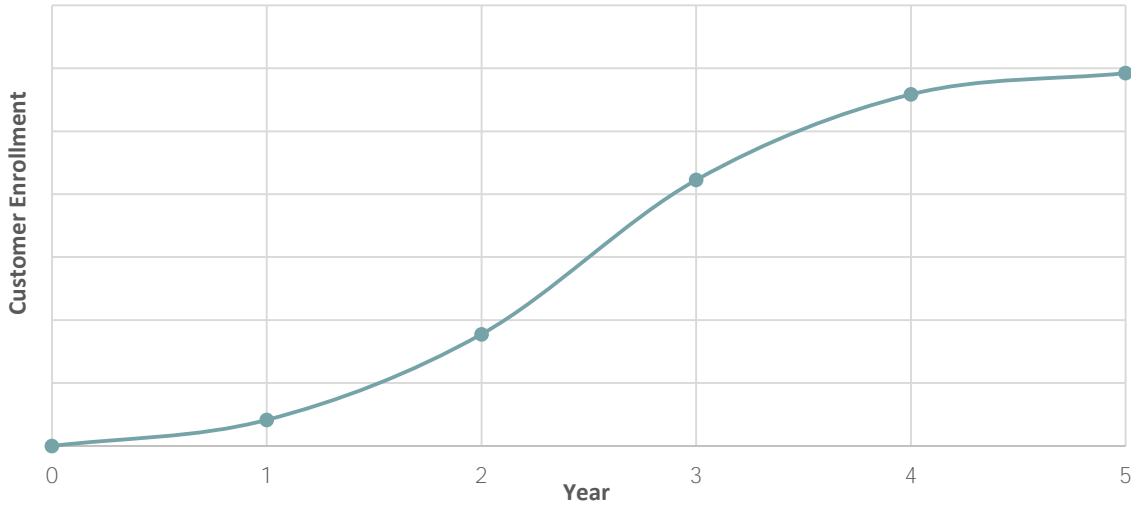


FIGURE 4-1 ILLUSTRATION OF S-SHAPED MARKET ADOPTION CURVE

TABLE 4-4. BASE CASE ADOPTION RATES

Sector	Program	Steady State MAP Adoption Rate	Steady State RAP Adoption Rate
Residential	DLC Central AC	34%	18%
	DLC Room AC	31%	20%
	DLC Water Heating	28%	14%
	DLC Pool Pumps	38%	19%
	Time of Use - Evening/Morning Savers	61%	81%
	Time of Use - Overnight Savers	5%	2%
	Time of Use - Smart Savers	4%	2%
	Time of Use - Ultimate Savers	3%	1%
	Battery Storage	10%	5%
Non-Residential	DLC Central AC	26%	9%
	DLC Water Heating	30%	10%
	DLC Pool Pumps	16%	7%
	DLC Lighting	14%	3%
	DLC Agricultural Irrigation	30%	15%
	Capacity Bidding	50%	18%
	Demand Bidding	8%	1%

Double-counting savings from demand response programs that affect the same end uses is a common issue that must be addressed when calculating the demand response savings potential. For example, a customer cannot elect to participate in both DLC programs and rate programs and claim savings from both programs for curtailing the same end use. One cannot save a kW of load in a specific hour more than once. In general, the hierarchy of demand response programs is accounted for by subtracting the number participants in a higher

priority program from the eligible market for a lower priority program.<sup>80</sup> Table 4-5 shows the hierarchy for each sector, with 1 being the top priority.

TABLE 4-5 BASE CASE DR HIERARCHY FOR EACH SECTOR

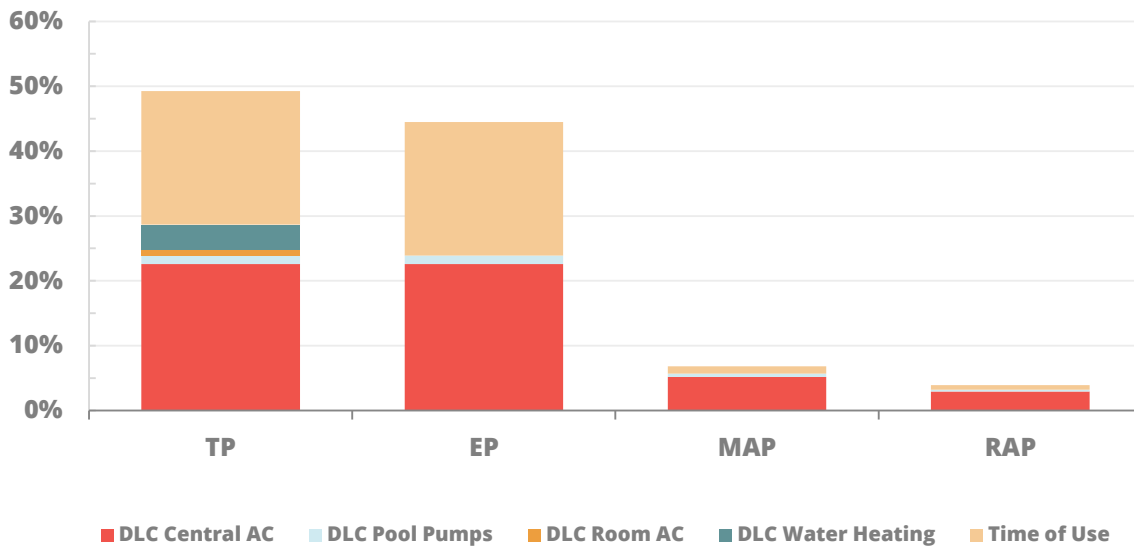
Order	Residential Hierarchy	Small Non-Residential Hierarchy	Large Non-Residential Hierarchy
1	Direct Load Control	Direct Load Control	Capacity Bidding
2	Time of Use		

4.2 DEMAND RESPONSE POTENTIAL

4.2.1 Residential Potential

Figure 4-2 shows the 2043 residential market rate and income-eligible technical, economic, MAP and RAP demand response potential. These demand reduction values are presented at the customer meter level of the Ameren Missouri grid.

FIGURE 4-2. SUMMER PEAK MW RESIDENTIAL SECTOR BASE CASE RESULTS AS % OF 2043 RESIDENTIAL CLASS LOAD

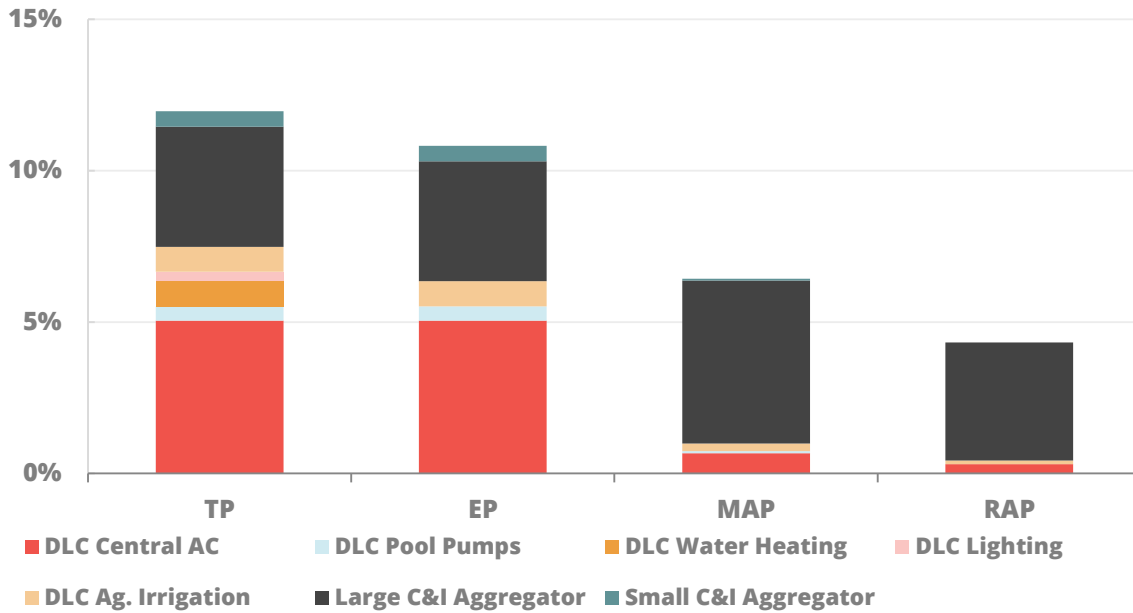


4.2.2 Business Sector Potential

Figure 4-3 shows the 2043 business sector technical, economic, MAP and RAP demand response potential. These demand reduction values are present at the customer meter level of the Ameren Missouri grid. Note that for the Capacity Bidding program, MAP and RAP are larger than Technical and Economic potentials towards the end of the study timeframe. This is due to the interactive effects of efficiency trends from the energy efficiency study. The larger peak demand impacts from energy efficiency measures in technical and economic potential created reduced impacts attributed to capacity bidding/C&I aggregator programs. As the impacts of energy efficiency on the system peak are smaller for MAP and RAP, there is additional opportunity for capacity bidding programs.

<sup>80</sup> 20 CSR 4240-20.050 (3)(G)2

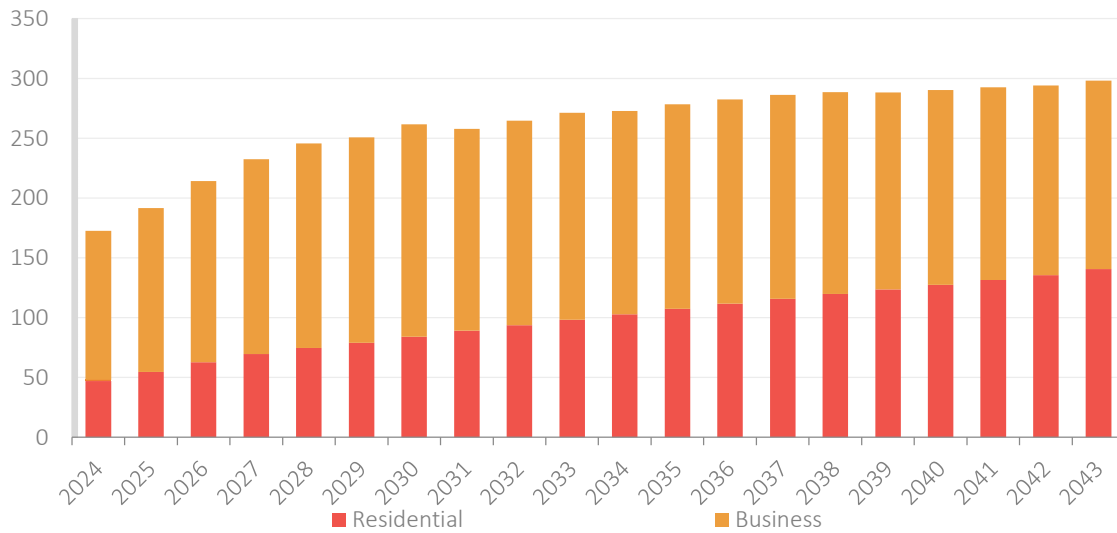
FIGURE 4-3. SUMMER PEAK MW BUSINESS SECTOR BASE CASE RESULTS AS % OF 2043 BUSINESS CLASS LOAD



4.2.3 Total Potential

Figure 4-4 shows the annual demand response RAP potential for the Base Case by sector. These demand reduction values are present at the customer meter level of the Ameren Missouri grid. Additional annual detail can be found in Appendix D.<sup>81</sup>

FIGURE 4-4. CUMMULATIVE ANNUAL BASE CASE SUMMER PEAK MW RAP POTENTIAL BY SECTOR



<sup>81</sup> 20 CSR 4240-20.050 (4)(E)



#### 4.2.4 Benefits/Costs of Program Potential

Cost-effectiveness of demand response measures was determined based on screening with the TRC test.<sup>82</sup> Table 4-6 and Table 4-7 shows the residential and business benefits, costs, and TRC ratios for each program for MAP and RAP in the Base Case.

TABLE 4-6. BASE CASE MAP BENEFITS, COSTS, AND TRC RATIOS

Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
Residential	DLC Central AC	\$210,823,046	\$114,914,999	1.83
	DLC Room AC	\$50,197,337	\$70,884,757	0.71
	DLC Pool Pumps	\$27,604,683	\$9,649,550	2.86
	DLC Water Heating	\$61,794,073	\$179,725,648	0.34
	Battery Storage	\$278,948,065	\$1,150,304,284	0.24
	Time of Use - Evening/Morning Savers	\$8,274,871	\$4,180,950	1.98
	Time of Use - Overnight Savers	\$10,019,413	\$1,063,587	9.42
	Time of Use - Smart Savers	\$12,190,625	\$866,927	14.06
	Time of Use - Ultimate Savers	\$10,996,628	\$786,246	13.99
Non-Residential	DLC Central AC	\$52,571,377	\$34,152,165	1.54
	DLC Pool Pumps	\$3,985,781	\$2,671,112	1.49
	DLC Water Heating	\$13,686,754	\$34,142,318	0.40
	DLC Lighting	\$2,039,733	\$16,145,394	0.13
	DLC Agricultural Irrigation	\$14,323,804	\$6,215,042	2.30
	Capacity Bidding	\$351,621,207	\$158,872,174	2.21
	Demand Bidding	\$4,679,127	\$3,471,995	1.35

TABLE 4-7. BASE CASE RAP BENEFITS, COSTS, AND TRC RATIOS

Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
Residential	DLC Central AC	\$126,873,034	\$55,575,584	2.28
	DLC Room AC	\$32,385,378	\$43,695,504	0.74
	DLC Pool Pumps	\$13,802,342	\$5,159,701	2.68
	DLC Water Heating	\$30,560,085	\$87,009,520	0.35
	Battery Storage	\$140,717,293	\$575,570,836	0.24
	Time of Use - Evening/Morning Savers	\$10,190,797	\$5,210,438	1.96
	Time of Use - Overnight Savers	\$5,107,084	\$647,071	7.89
	Time of Use - Smart Savers	\$6,213,791	\$574,887	10.81
	Time of Use - Ultimate Savers	\$5,605,189	\$545,273	10.28

<sup>82</sup> CSR 4240-20.050 (5)(B)5F

Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
Non-Residential	DLC Central AC	\$18,966,743	\$11,559,672	1.64
	DLC Pool Pumps	\$1,743,779	\$1,944,216	0.90
	DLC Water Heating	\$4,502,222	\$12,163,158	0.37
	DLC Lighting	\$438,395	\$4,499,712	0.10
	DLC Agricultural Irrigation	\$7,161,902	\$3,850,493	1.86
	Capacity Bidding	\$252,156,615	\$113,018,792	2.23
	Demand Bidding	\$701,224	\$1,660,451	0.42

### 4.3 SENSITIVITIES

As with the residential and business sector energy efficiency potential analysis, several sensitivities on the RAP base case were analyzed to determine the impact of uncertain conditions surrounding customer participation and/or cost-effectiveness.<sup>83</sup> While many of the sensitivities are similar to those discussion in Section 3.5.1, there are some distinct differences. Notably, demand response includes a sensitivity that examines various demand response rate options on future peak savings potential.

#### 4.3.1 Sensitivities Overview

**Avoided Costs.** Avoided costs are the primary benefit in assessing the cost-effectiveness of DSM measures. Higher avoided costs will likely result in additional measures passing the TRC cost-effectiveness screen, leading to greater savings potential; while lower avoided costs will decrease the cost-effectiveness of measures and lead to lower savings potential.

**High Sensitivities:** (1) Increase avoided energy and generation capacity costs by 35%; no change to avoided T&D costs, and (2) Increase avoided T&D costs by 200%; no change to energy and capacity costs.

**Low Sensitivities:** (1) Decrease avoided energy and generation capacity costs by 50%; no change to avoided T&D costs, and (2) Reduce avoided T&D costs to \$0 from 2024-2033, then apply base case T&D costs in second decade; no change to energy and capacity costs.

**Impacted Sectors:** Residential / Business

**Prolonged Economic Downturn.** GDS held constant economic factors in the Ameren Missouri load forecast, resulting in a negative impact on future energy sales. Adoption rates were also reduced to reflect concern over financial barriers. Population, households, and income are held constant at 2019 levels for residential. GDP, employment, and other rate class outputs were held constant in the business sector.

**High Sensitivity:** n/a

**Low Sensitivity:** (1) Residential: 10% decrease to forecast by 2040; 10% decrease to adoption levels; (2) Commercial: 5% decrease to forecast by 2040; 5% decrease to adoption levels; (3) Industrial: 8% decrease to forecast by 2040; 8% decrease to adoption levels.

**Impacted Sectors:** Residential / Business

**High Touch Marketing.** Intended to explore strategy of increasing marketing/high-touch administration to improve program delivery and increase program participation.<sup>84</sup> The high-touch marketing scenario is applied to RAP and produces a result between the current RAP and MAP levels to provide an indication which strategy (increased incentives or increased marketing) is likely to have a larger impact on adoption.

<sup>83</sup> 20 CSR 4240-20.050 (6)(C)1; 20 CSR 4240-20.050 (6)(C)2

<sup>84</sup> 20 CSR 4240-20.050 (1)(E)2

**High Sensitivity:** Assume historical incentive levels but raises the program awareness threshold to the MAP level. Non-Incentive costs were estimated to be higher as well.

**Low Sensitivity:** n/a

**Impacted Sectors:** Residential / Business

**Large Customer Opt-Outs.** The base case excludes sales and savings from all eligible customers that currently opt-out of Ameren Missouri’s energy efficiency programs. This sensitivity looks at the range of potential if no C&I customers were to opt-out, or if all eligible customers chose to opt-out.

**High Sensitivity:** Include currently opted-out customers in analysis of future potential.

**Low Sensitivity:** Exclude all eligible opt-out customers from analysis. For purposes of estimating sales from all eligible customers opt-out, GDS used the existing opt-out customers and included sales from all additional customers in the 11M rate (that are not currently designated as an opt-out customer).

**Impacted Sectors:** Business Only

**Summer Planning Reserve Margin.** This sensitivity assesses the impact of transitioning from ICAP to UCAP.

**High Sensitivity:** n/a

**Low Sensitivity:** Reduce summer planning reserve margin to 7.4%

**Impacted Sectors:** Residential / Business

**Additional Demand Response Rate Options.**<sup>85</sup> The rates sensitivity includes rate programs that were not already included in the Base Case analysis (in addition to the programs in the Base Case). Table 4-8 lists the rate programs and eligible markets that were included in this sensitivity.<sup>86</sup> This list of rate programs included in the potential study was determined from common rate programs offered by utilities in the US and additional secondary research on rate design.<sup>87,88</sup>

TABLE 4-8. DEMAND RESPONSE RATE SENSITIVITY PROGRAM OPTIONS AND ELIGIBLE MARKETS<sup>89</sup>

DR Program Option	Program Description	Eligible Markets
Time of Use Rates	A retail rate with different prices for usage during different blocks of time. Daily pricing blocks could include on-peak, mid-peak, and off-peak periods. Pricing is pre-defined, and once established do not vary with actual cost conditions. Includes enabling technology that connects technologies within building.	Residential and Non-Residential Customers
Peak Time Savings	A program where customers are rewarded if they reduce electricity consumption during peak times with monetary rebates	Residential and Non-Residential Customers

<sup>85</sup> 20 CSR 4240-20.050 (4); 20 CSR 4240-20.050 (4)(G); In addition, the EE sensitivity (Chapter 4) also included a sensitivity where all market-rate customers were assumed to be on a TOU rate.

<sup>86</sup> 20 CSR 4240-20.050 (1)(C)

<sup>87</sup> 20 CSR 4240-20.050 (4)(A)

<sup>88</sup> Rate Design Matters: The Intersection of Residential Rate Design and Energy Efficiency. ACEEE (Brendon Baatz). March 2017. Report U1703

<sup>89</sup> 20 CSR 4240-20.050 (4)(B)

DR Program Option	Program Description	Eligible Markets
Critical Peak Pricing with Enabling Technology	A retail rate in which an extra-high price for electricity is provided during a limited number of critical periods (e.g. 100 hours) of the year. Market-based prices are typically provided on a day-ahead basis, or an hour-ahead basis. Includes enabling technology that connects technologies within building. Only for customers with AC.	Residential and Non-Residential Customers
Critical Peak Pricing without Enabling Technology	A retail rate in which an extra-high price for electricity is provided during a limited number of critical periods (e.g. 100 hours) of the year. Market-based prices are typically provided on a day-ahead basis, or an hour-ahead basis.	Residential and Non-Residential Customers
Interruptible Rate	A discounted rate is offered to the customer for agreeing to interrupt or curtail load during peak period. The interruption is mandatory. No buy-through options are available.	Non-Residential Customers
Electric Thermal Storage Rate	The use of a cold storage medium such as ice, chilled water, or other liquids. Off-peak energy is used to produce chilled water or ice for use in cooling during peak hours. The cool storage process is limited to off-peak periods.	Non-Residential Customers
Electric Vehicle Charging Station Off Peak <sup>90</sup>	Special rate service for electric vehicles that charge off-peak.	Residential and Non-Residential Customers
Golf Cart Charging Off Peak	Special rate service for golf courses that charge their golf carts off-peak.	Golf Courses

As mentioned earlier, a hierarchy was put in place to avoid double-counting savings.<sup>91</sup> For the Rates Sensitivity, Table 4-9 shows the hierarchy of all programs in both the Base Case in addition to the extra rates.<sup>92</sup>

TABLE 4-9. DR HIERARCHY FOR EACH SECTOR INCLUDING RATE PROGRAMS

Order	Residential Hierarchy	Small Non-Residential Hierarchy	Large Non-Residential Hierarchy
1	Direct Load Control	Direct Load Control	Capacity Bidding
2	Time of Use	Critical Peak Pricing	Interruptible Rate
3	Peak Time Savings		Critical Peak Pricing
4	Critical Peak Pricing		

Demand reductions were based on various secondary data sources including the FERC and other industry reports, including demand response potential studies that conducted primary research. Rate-based DR options

<sup>90</sup> EO-2023-0099 1F(2); this analysis looked at a TOU rate for EVs but did not consider vehicle to grid impacts due to concerns over limited applications and technologies permitting V2G and other market factors.

<sup>91</sup> 20 CSR 4240-20.050 (3)(G)2

<sup>92</sup> 20 CSR 4240-20.050 (4)(D)2; 20 CSR 4240-20.050 (4)(D)3

are typically assumed to reduce a percentage of the total facility peak load. Table 4-10 shows the assumed load reductions.<sup>93</sup>

**TABLE 4-10. DEMAND RESPONSE LOAD REDUCTION IMPACTS FOR RATE SENSITIVITY PROGRAMS**

Program	Residential Load Reduction	Business Load Reduction
Time of Use	N/A	4%
Critical Peak Pricing with Enabling Technology	23%	22%
Critical Peak Pricing without Enabling Technology	13%	11%
Electric Vehicle Charging Rate	0.62 kW Level 1 Charger; 0.66 kW Level 2 Charger	N/A
Thermal Electric Storage Cooling Rate	N/A	19.4 kW
Golf Cart Charging Rate	N/A	42.75 kW
Peak Time Savings	13%	1%
Interruptible Rate	N/A	41.3 kW

Table 4-11 provides the Rate Sensitivity long-term adoption rates for MAP and RAP. Annual adoption rates, sources, and specific assumptions for each program are in Appendix D.

**TABLE 4-11 RATE SENSITIVITY ADOPTION RATES**

Sector	Program	MAP	RAP
Residential	Peak Time Savings	9.6%	4.8%
	Critical Peak Pricing <i>with Enabling Technology</i>	10.2%	5.0%
	Critical Peak Pricing <i>without Enabling Technology</i>	7.9%	3.9%
	Electric Vehicle Charging Rate	94%	57%
Non-Residential	Interruptible Rate	21%	3%
	Time of Use	4%	2%
	Peak Time Savings	8%	3%
	Critical Peak Pricing <i>with Enabling Technology</i>	7%	3%
	Critical Peak Pricing <i>without Enabling Technology</i>	7%	3%
	Thermal Electric Storage Cooling Rate	20%	7%
	Golf Cart Charging Rate	20%	7%

<sup>93</sup> 20 CSR 4240-20.050 (4)(D); 20 CSR 4240-20.050 (4)(D)1;

4.3.2 Sensitivity Results

Figure 4-5 shows the MW potential results of each sensitivity compared to the Base Case for each sector. The first bar in the graph is the base case, with the other sensitivities following. Four of the sensitivities did not lead to a change in potential. Sensitivities that led to a higher total RAP potential include the High Touch Marketing and Opt-Out sensitivities. Sensitivities that led to a lower total RAP potential include the Avoided Cost Scenario #2 (50% decrease in energy and capacity avoided costs) and the Economic Downturn sensitivities.

FIGURE 4-5. DEMAND RESPONSE RAP SENSITIVITIES (EXCLUDING RATE SENSITIVITY)

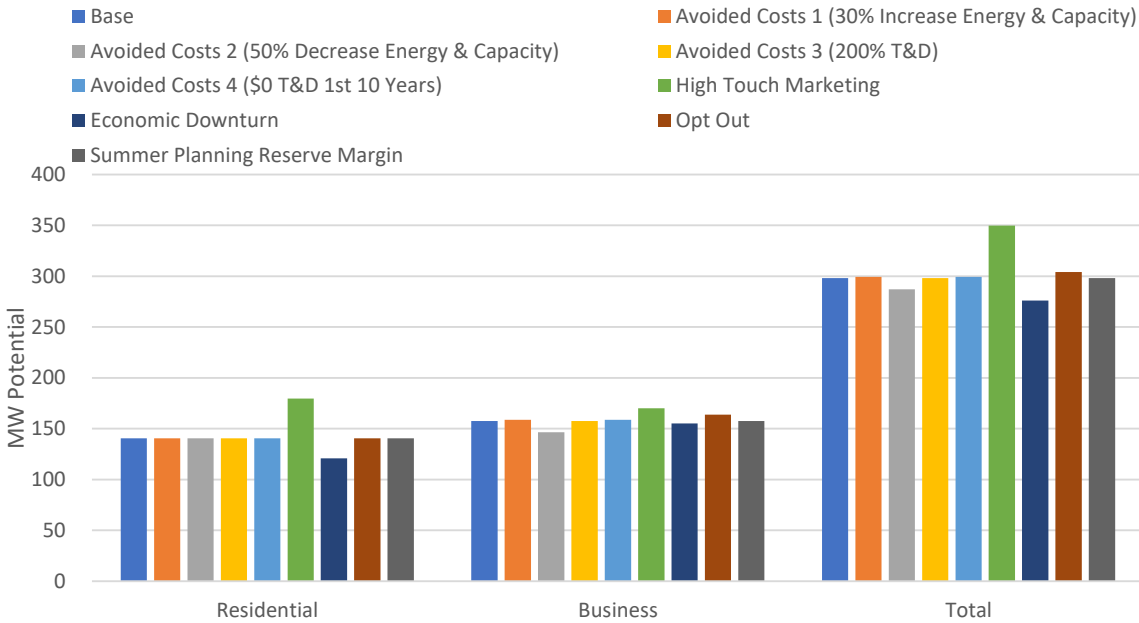
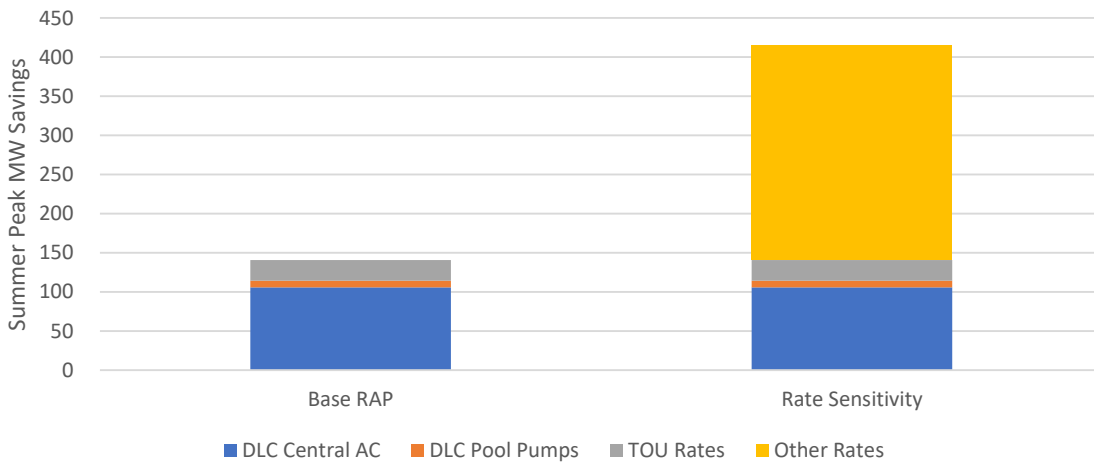


Figure 4-6 compares the Residential Base Case to the Rate Sensitivity. An additional 274 MW of RAP potential was added in the Rate Sensitivity. Additional annual impacts and costs associated with each DR ratio options is included in Appendix D.<sup>94</sup>



<sup>94</sup> 20 CSR 4240-20.050 (4)(D)4; 20 CSR 4240-20.050 (4)(D)5A through D

FIGURE 4-6. RESIDENTIAL BASE CASE RAP VS INCLUDING RATE SENSITIVITY

Figure 4-7 shows a breakdown of the cost-effective rate programs contributing to the total potential. The biggest contributing program is the TOU rate of EV Charging.

FIGURE 4-7. BREAKDOWN OF ADDITIONAL RATE DR FOR RESIDENTIAL SECTOR

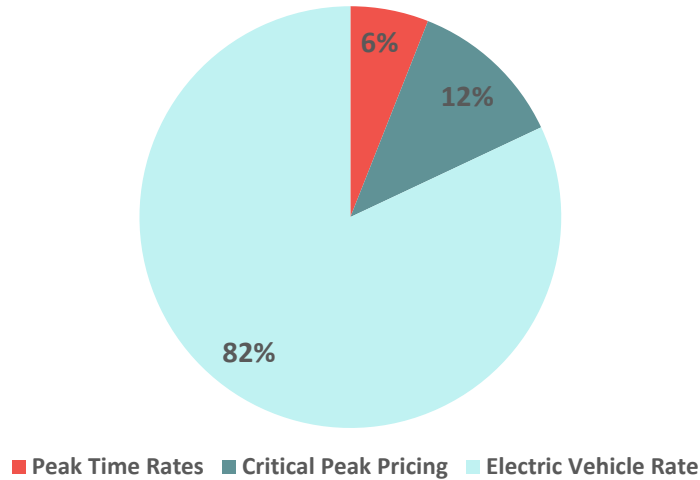


Figure 4-8 compares the business sector Base Case to the Rate Sensitivity. An additional 26 MW of RAP potential was added in the Rate Sensitivity.

FIGURE 4-8. BUSINESS SECTOR BASE CASE RAP VS INCLUDING RATE SENSITIVITY

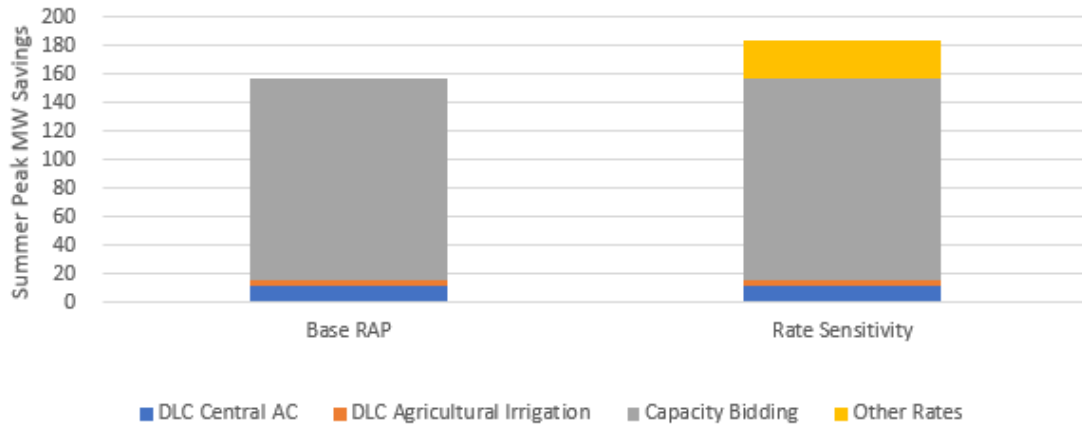
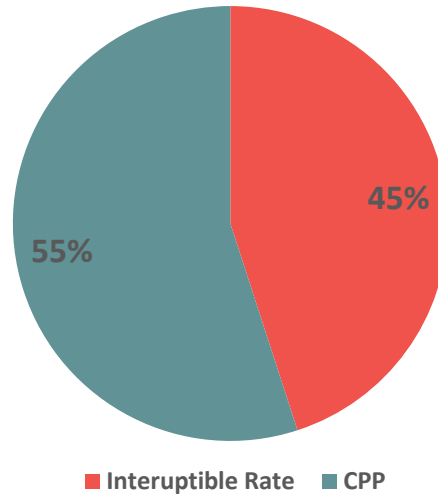


Figure 4-9 shows a breakdown of the cost-effective rate programs contributing to the total potential. The biggest contributing program is the Critical Peak Pricing program.

FIGURE 4-9. BREAKDOWN OF ADDITIONAL RATE DR FOR BUSINESS SECTOR



Cost-effectiveness of demand response measures was determined based on screening with the TRC test. Table 4-12 and Table 4-13 shows the residential and business sector benefits, costs, and TRC ratios for each program for MAP and RAP in the Rate Sensitivity.

TABLE 4-12. RATE SENSITIVITY MAP BENEFITS, COSTS, AND TRC RATIOS

Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
Residential	Peak Time Savings	\$53,843,283	\$6,950,266	7.75
	Critical Peak Pricing with Enabling Tech	\$56,381,890	\$15,900,692	3.55
	Critical Peak Pricing without Enabling Tech	\$38,087,784	\$4,860,000	7.84
	Electric Vehicle Charging Rate	\$264,240,632	\$66,857,093	3.95
Business	Interruptible Rate	\$110,241,367	\$9,374,593	11.76
	Time of Use	\$832,049	\$1,659,941	0.50
	Peak Time Savings	\$509,630	\$2,017,946	0.25
	Critical Peak Pricing with Enabling Tech	\$19,761,424	\$2,245,911	8.80
	Critical Peak Pricing without Enabling Tech	\$18,143,178	\$1,402,998	12.93
	Thermal Electric Storage Cooling Rate	\$31,181,482	\$296,967,340	0.10
	Golf Cart Charging	\$1,836,773	\$1,570,682	1.17

TABLE 4-13. RATE SENSITIVITY RAP BENEFITS, COSTS, AND TRC RATIOS

Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
Residential	Peak Time Savings	\$29,040,770	\$3,383,289	8.58



Sector	Program	NPV Benefits	NPV Costs	TRC Ratio
	Critical Peak Pricing with Enabling Tech	\$34,104,783	\$8,999,029	3.79
	Critical Peak Pricing without Enabling Tech	\$21,846,806	\$2,470,625	8.84
	Electric Vehicle Charging Rate	\$160,231,022	\$37,383,818	4.29
Business	Interruptible Rate	\$19,600,897	\$2,557,003	7.67
	Time of Use	\$393,957	\$1,342,476	0.29
	Peak Time Savings	\$240,595	\$1,461,566	0.16
	Critical Peak Pricing with Enabling Tech	\$13,473,670	\$1,710,272	7.88
	Critical Peak Pricing without Enabling Tech	\$10,596,111	\$1,077,413	9.83
	Thermal Electric Storage Cooling Rate	\$10,445,797	\$100,209,584	0.10
	Golf Cart Charging	\$642,870	\$1,318,268	0.49

## 5 DISTRIBUTED ENERGY RESOURCES POTENTIAL

This chapter focuses on additional distributed energy resources (DER) technologies including combined heat and power (CHP) and Solar Photovoltaics (PV), and their potential in the Ameren Missouri service area under the current MEEIA cost-effectiveness framework. The market potential assessment for electric (DER) included CHP and solar PV systems within Ameren Missouri service area for the period 2024 to 2043. Resources for this potential assessment study were limited to technologies that are behind-the-meter and owned by the customer. Market potential for supply-side resources were not considered within this assessment.

CHP systems generate electric power and useful thermal energy in a single, integrated system. Heat that is normally wasted in conventional power generation is recovered as useful thermal energy. Due to the integration of both power and thermal generation, CHP systems are more efficient than separate sources for electric power generation and thermal energy production. This provides environmental, economic, and energy system infrastructure benefits. Solar PV is a system that uses solar panels mounted on a rooftop of a home or business to generate electricity.

### 5.1 ANALYSIS APPROACH<sup>95</sup>

This section describes the overall methodology proposed to assess the electrical DER potential in the Ameren Missouri service area. The approach utilizes a bottom-up approach to estimate distributed energy resource potential by:

- Characterizing the applicable premises within each market sector, along with the premise-level energy consumption for average premise;
- Researching DER technology performance, including hourly profiles, along with installed and operating costs<sup>96</sup>;
- Analysis of cost-effectiveness for each technology for each unique capacity and application;
  - The TRC test, consistent with energy efficiency and demand response potential analysis along with the statute framework<sup>97</sup> was applied to consider as a DSM resource on equal footing with energy efficiency and demand response. No additional benefits for reliability or resilience were included in the analysis. It is GDS' understanding that reliability or resilience benefits are already included within the avoided electricity costs.<sup>98</sup>
- Forecast achievable potential and program potential through application of customer adoption curve(s) for technologies that are cost-effective; and,
- Consider sensitivities through alternative scenarios with different unique inputs.

Many methodological activities and steps are similar to those performed in the energy efficiency potential study conducted within this report and are therefore not repeated.

#### 5.1.1 Ameren Service Territory Characterization

The Ameren Missouri market sector and premise characterization within the DER potential assessment is aligned with the end-use energy consumption characterization used within the energy efficiency potential assessment, but the end-use properties are not as relevant. However, it is important to characterize premise type by annual energy consumption, as this is an important parameter to align with the technology generation capacity. While it is technically plausible, most end-users will not select technology capacities that are greater than annual electric energy consumption, as exporting electricity is not often cost-effective from the customer perspective. Table 5-1 and Table 5-2 summarize the energy consumption, percent of customers, and energy consumption shares for each cohort.

<sup>95</sup> 20 CSR 4240-20.050 (3)(I)

<sup>96</sup> 20 CSR 4240-20.050 (6)(B)

<sup>97</sup> 20 CSR 4240-20.050 (5); The State of Missouri Revised Statutes, Chapter 393, Section 393.1075.1, states that "The commission shall consider the total resource cost test a preferred cost-effectiveness test."

<sup>98</sup> 20 CSR 4240-20.050 (5)(A)

Ameren Missouri customers with annual energy consumption less than 1,000 kWh were not considered for DER market potential.

TABLE 5-1 BUSINESS SECTOR COHORT CHARACTERIZATION

Business Thresholds	High End Energy (kWh) Threshold	Percent of Market Sector Customers	Percent of 2021 Energy Consumption by Market Sector
Petite	15,000	54.6%	2.1%
Very Small	100,000	31.6%	8.3%
Small	200,000	5.1%	4.8%
Small-Medium	500,000	4.7%	9.8%
Medium	750,000	1.3%	5.3%
Medium-Large	1,500,000	1.3%	9.3%
Large	4,000,000	1.0%	15.2%
Very Large	999,999,999	0.4%	45.2%

TABLE 5-2 RESIDENTIAL COHORT CHARACTERIZATION

Residential Thresholds	High End Energy (kWh) Threshold	Percent of Market Sector Customers	Percent of 2021 Energy Consumption by Market Sector
Small	4,500	9.8%	2.3%
Medium	10,000	32.4%	18.0%
Large	25,000	48.0%	55.3%
Very Large	9,999,999	9.8%	24.5%

For the combined heat and power technologies potential estimate, only a portion of the business sector population will be included. That is, only those customer segments whose electric and thermal load profiles allow for the application of CHP should be considered. Business customers in the Petite cohort are not expected to have the consistent electric and thermal loads necessary to support CHP.

### 5.1.2 Combined Heat & Power Technology

Estimates for each DER technology are unique, so the following narratives discuss the general methodology for each. In most CHP applications, a heat engine creates shaft power that drives an electrical generator (fuel cells can produce electrical power directly from electrochemical reactions). The waste heat from the engine is then recovered to provide steam or hot water to meet on-site needs. By combining the thermal and electrical energy generation in one process, the total efficiency of a CHP application far exceeds that of a separate plant and boiler system. Overall, the efficiency of CHP technologies can reach 75% or more, while simple-cycle electricity generation reaches only 40% and combined cycle generation typically achieves 50%. When considering both thermal and electric energy generation, CHP may require 25% less energy input to achieve the same energy output as a separate plant and boiler system. Figure 5-1 **Error! Reference source not found.** illustrates this point.

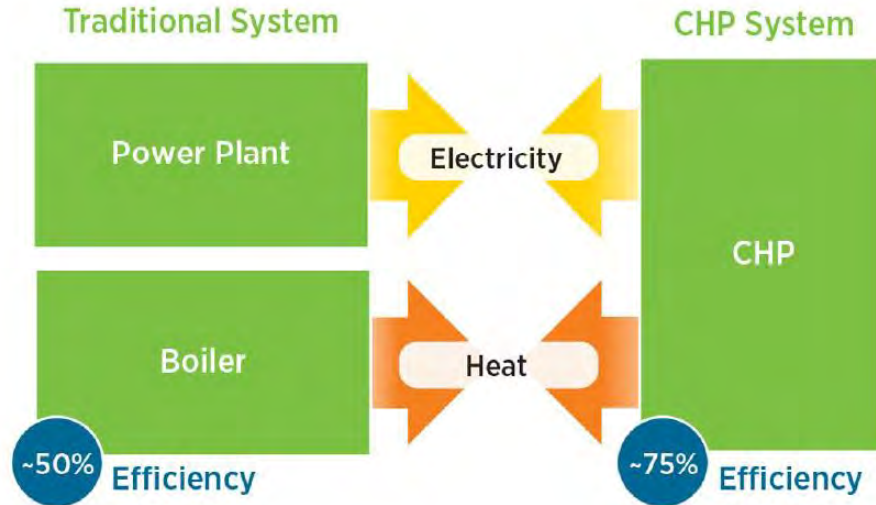


FIGURE 5-1 CHP ENERGY FLOW DIAGRAM

Common technologies used in CHP applications and explored in this study include:

- Steam turbines
- Gas turbines
- Micro turbines
- Fuel Cells
- Internal combustion engines

In a topping cycle system, fuel is first combusted to generate electricity. A portion of the heat left over from the electricity generation process is then converted into useful thermal energy (e.g. heating, hot water, or steam for industrial processes). A bottoming-cycle CHP system uses the reverse process. Fuel is first combusted to provide thermal input to industrial process equipment like a kiln or furnace, and the heat rejected from the process is then captured and used for power production.<sup>99</sup>

Applications with steady demand for electricity and thermal energy are potentially good economic targets for CHP deployment. Industrial applications, particularly in industries with continuous processing and high steam requirements, are very economic and represent a large share of existing CHP capacity today. Commercial applications such as hospitals, nursing homes, laundries, and hotels with large hot water needs are well suited for CHP. Institutional applications such as colleges and schools, prisons, and residential and recreational facilities are also excellent prospects for CHP.

As of 2022, there are four existing operable CHP sites within the in Ameren Missouri service area, representing a total installed capacity of 57.3 MW.<sup>100</sup> CHP is generally dependent on natural gas availability, including pipeline capacity availability, and customer steam usage. Ameren Missouri assumes almost all electric customers also have access to natural gas either via the distribution system or the wholesale pipeline system. Ameren Missouri does not currently have predetermined financial incentives for CHP projects. However, Ameren Missouri can consider CHP projects submitted by business customers under the current Business Custom program. If a CHP project was submitted for consideration to receive an incentive via the Business Custom program, Ameren Missouri would then determine an appropriate incentive.

<sup>99</sup> U.S. Department of Energy, Combined Heat and Power (CHP) Technical Potential in the United States, March 2016, p. ii.

<sup>100</sup> U.S. DOE Combined Heat and Power Installation Database, <https://doe.icfwebservices.com/chpdb/state/MO> and discussions with Ameren Missouri.

Selecting a specific CHP technology depends on several factors, which include but are not limited to power requirements, the duty cycle, space constraints, thermal energy needs, emission regulations, fuel availability, utility prices, and interconnection issues. Table 5-3 summarizes the CHP technologies evaluated in this study and their assumed operating parameters.

TABLE 5-3: CHP TECHNOLOGY COMPARISON<sup>101</sup>

Parameter	Internal Combustion Engine	Gas Turbine	Steam Turbine	Micro-Turbine	Fuel Cell
Size (kW)	50-5,000	500-50,000	10-100,000	30-250	200-2,000
Electric Efficiency	28-39%	25-40% (simple) 40-60% (combined)	5-15%	25-28%	36-42%
Overall Efficiency	73-79%	64-72%	~80%	67-72%	62%-67%
Fuels	Natural gas, biogas, propane, liquid fuels	Natural gas, biogas, propane, distillate oil	All	Natural gas, biogas, propane, distillate oil	Hydrogen, natural gas, propane
NOx Emissions (lb/MWh)	0.15-2.17	0.55-0.68	Function of boiler emissions	0.14-0.17	0.01-0.04
Uses for Heat Recovery	Hot water, low pressure steam, district heating	Direct heat, hot water, low- or high-pressure steam, district heating	Low- or high-pressure steam, district heating	Direct heat, hot water, low pressure steam	Hot water, low- or high-pressure steam
Thermal Output (Btu/kWh)	3,000-6,100	3,200-5,000	n/a	4,800-6,300	1,500-3,000
Useable Temp (°F)	200-500	500-1,100	n/a	400-650	140-700

Table 5-4 summarizes detailed CHP cost considerations and assumptions utilized in this analysis.<sup>102</sup>

TABLE 5-4: DETAILED CHP COST CONSIDERATION SUMMARY<sup>103</sup>

Technology Type	Size (kW)	Installed System Cost (\$/W) <sup>104</sup>	Waste Heat Utilization (kBtu/kWh)	Capacity Factor	System Lifetime (years)	O&M Costs (\$/kWh)
Fuel Cell	175	\$15.50	2.6	0.76	20.0	\$0.05
	500	\$6.76				\$0.04
	800	\$6.04				\$0.06
	1,125	\$5.26				\$0.04
Gas Turbine	2,500	\$3.32	6.0	0.78	20.0	\$0.01
	3,000	\$3.23	5.5			
	3,500	\$3.09	5.2			
	5,000	\$2.66	4.6			

<sup>101</sup> Combined Heat and Power Market Assessment. ICF International for the California Energy Commission, April 2010.

<sup>102</sup> 20 CSR 4240-20.050 (3)(G)5A

<sup>103</sup> Natural gas fuel costs were assumed to be \$4.61/dekatherm; 2019 EIA Energy Outlook Assessment average industrial sector retail costs for years 2020 through 2030 in nominal dollars.

<sup>104</sup> Environmental and/or siting costs are not explicitly considered. For certain locations, these costs can be considerable and in addition to the installation costs estimated.

Technology Type	Size (kW)	Installed System Cost (\$/W) <sup>104</sup>	Waste Heat Utilization (kBtu/kWh)	Capacity Factor	System Lifetime (years)	O&M Costs (\$/kWh)
	10,000	\$1.82	3.7			
	15,000	\$1.72	3.3			
	30,000	\$1.45	2.8			
Micro Turbine	25	\$3.63	5.9	0.42	10.0	\$0.01
	100	\$3.30	4.7			
	200	\$2.92	4.3			
Reciprocating Engine	125	\$2.88	5.0	0.36	20.0	\$0.02
	350	\$2.80	3.9			\$0.02
	1,250	\$2.49	3.0			\$0.02
	3,000	\$1.88	2.6			\$0.02
	4,500	\$1.73	2.5			\$0.01
Steam Turbine	1,500	\$5.00	32.4	0.45	20.0	\$0.05
	3,500	\$5.00	32.4			\$0.05
	5,500	\$5.00	32.4			\$0.05

To estimate technical potential for CHP, the GDS Team first developed a screening process to identify probable CHP candidate premises. To effectively utilize CHP, a facility must have coincident electric and thermal energy requirements for a large load factor of the year. A continuous process industry with nearly constant steam or hot water demand electric load is an excellent target, such as a chemicals manufacturer or a hospital. Facilities with intermittent electric and thermal loads are progressively less attractive as the number of hours of coincident load diminishes. Hence our screening process will identify a minimum threshold kW level which represents feasible CHP opportunities.

A thermal factor was applied to potential candidate customer loads to reflect thermal load considerations in CHP sizing. In most cases, on-site thermal energy demand is smaller than electrical demand. Thus, CHP size is usually dictated by the thermal load in order to achieve proper efficiencies and adequate returns on investment. Using electric and thermal intensity data from prior studies, the GDS team used power to heat ratios for the prime mover CHP technology for different market segments to calculate the thermal factor as shown in following equation.

**EQUATION 5-1: THERMAL FACTOR CALCULATION**

$$\text{Thermal Factor} = \frac{P/H \text{ (CHP System)}}{P/H \text{ (Customer Segment)}}$$

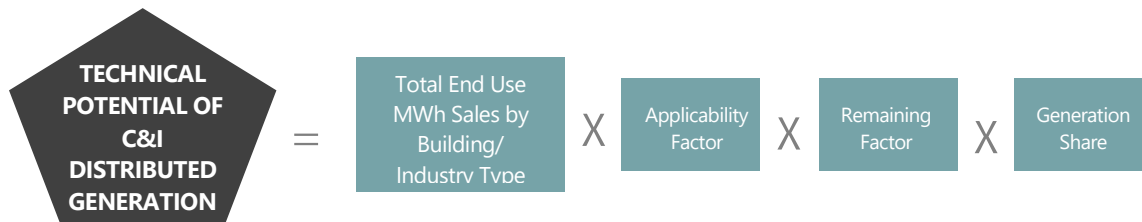
A thermal factor of one (1.0) would result in the CHP system capacity being equal to the electric demand of the facility. A thermal factor of less than one would indicate that the application is thermally limited, and the resulting CHP system size would be below the electric demand of the facility. A thermal factor greater than one indicates that a CHP system sized to the thermal load would produce more electricity than can be used on-site, resulting in excess power that could be exported to the grid. Any customer premises with an annual kWh consumption below an established threshold was removed from the analysis. The thermal factors and thresholds are intended to be reasonable values representative of the average building in each commercial segment that would be eligible to have a CHP technology installed onsite. A summary of the utilized thermal factors is listed in Table 5-5, as sourced from the DOE EPA CHP potential study.

TABLE 5-5: CHP POWER RATIOS BY SEGMENT

Industrial Segment	Heat to Power Ratio	Commercial Segment	Heat to Power Ratio
Chemicals	1.29	Education	0.75
Electrical Equipment Manufacturing	0.26	Health	0.94
Food Manufacturing	1.10	Public service	0.62
Primary Metals	0.33	Institutional	0.62
Paper	2.37	Grocery	0.20
Plastics Rubber	0.31	Lodging	0.84
Misc	1.34	Office	0.62
NonMetallic Mineral	0.25	Restaurant	0.48
General Equipment	0.25	Retail	0.37
Petroleum	3.83	Warehouse	0.68
Fabricated Metals	0.50	Misc.	0.68

After developing the screening method our team will calculate the average building consumption for each commercial and industrial segment. Next, we will estimate a building energy savings share percentage for each CHP technology based on its generation capacity. We will apply those savings shares to the applicable share of the sector load to estimate technical potential. The core equation utilized in the technical potential analysis for each individual CHP technology is shown the equation below.

EQUATION 5-2: THERMAL FACTOR CALCULATION



**Applicability Factor** = the share of the premises where it is technically feasible to add CHP technology from an engineering perspective (e.g., it may not be possible to install exhaust flues or obtain necessary emission permits for premises).

**Remaining Factor** = the fraction of equipment that does not have existing CHP technologies (or other similar competing DER resource). This can be removed from the technical and economic potential, as there are a limited number of sites where CHP is viable and had not already been considered.

**Generation Factor** = the share of electric consumption resulting from CHP technology. This percentage is closely related to power-to-heat ratios that are unique for each CHP technology and premise type, based on expectations of thermal loads for processes and occupants. Additionally, care must be taken align the potential CHP technology capacity with a similar premise thermal and electric consumption. In order to accomplish this, multiple cohorts for applicable premise types will be developed based on standard CHP capacity ranges (i.e., 500kW, 1,000kW, etc)

5.1.3 Solar Photovoltaic

Photovoltaic systems utilize solar panels, a packaged collection of photovoltaic cells, to convert sunlight into electricity. A system is constructed with multiple solar panels, a DC/AC inverter, a racking system to hold the panels, and electrical system interconnections. These systems are often roof-mounted systems that face south-west, south, and/or, south-east. Systems can have a fixed tilt position or they can automatically adjust tilt to track the suns movement. This study

analyzed the potential associated with roof-mounted systems installed on residential and business sector buildings. Additionally, for the business market segment, the team estimated potential for ground mounted (or covered parking) systems for a few specific business types, such as municipal facilities, parking enclosures, and some high-end hospitality facilities. Single axis tracking PV systems were also analyzed for business sector buildings. Integrated battery storage was analyzed as an additional configuration with each with solar PV system type. This study did not explore the market potential associated utility-scale solar PV installations.

The assessment of the market potential from distributed solar PV was estimated through the following steps:

- Characterize the existing and new residential, commercial, and industrial building stocks, including relevant parameters such as number of facilities, average number of floors, and average premise square footage by utility.
- Calculate the total available roof area feasible for installing solar PV systems from the forecast disaggregation analysis to characterize the existing and new residential, commercial, and industrial building stocks. Relevant characterized parameters include share of pitched/flat roofs and unusable area due to other rooftop equipment.
  - Premises with existing solar PV will be removed.
- Align the premise energy consumption using the premise cohorts in Table 5-1 and Table 5-2 **Error! Reference source not found.** with analyzed standard system sizes.
  - Residential: System size is limited by 100% of the average energy consumption of the cohort.
  - Non-Residential: System size is limited by the available roof area and expected power density (kW per square foot of roof area).
- Develop standardized solar PV system configurations to characterize performance and system costs.
  - System sizes for residential premises range from 3 to 25 kW (DC) and 3 to 2,000 kW (DC) for business premises.
  - Battery system sizes for each solar PV system size were selected to dispatch energy for 2-4 hours during low and/or non-generation time periods.
- Analyze the energy generation output, capacity factors, and hourly load shapes using proven calculation tools, such as PVWatts<sup>105</sup> and System Advisor Model (SAM)<sup>106</sup> simulations. System models were generated for St. Louis City and determined an average rooftop suitability present for 81% of buildings across the territory. The GDS team applied this suitability factor to each building segment.<sup>107</sup>

Our approach to calculate technical potential estimates the total number of buildings in Ameren’s territory with rooftops suitable for siting solar PV systems and calculating the solar PV system generation based on building characteristics. This calculation is computed using following equation:

#### EQUATION 5-3: SOLAR PV TECHNICAL POTENTIAL CALCULATION

$$PV \text{ Technical Potential} = \Sigma(\text{Homes with Suitable Rooftop} \times PV \text{ System Generation})$$

The two key parameters in the equation were from multiple data sources relevant to Ameren’s territory. We discuss our methods for defining these parameters below. To estimate the total number of buildings containing rooftop area suitable to host solar PV within Ameren’s territory, the GDS team leveraged multiple data sources including the National Renewable Energy’s (NREL) National Solar Radiation Database (NSRDB), Google’s Project Sunroof, and customer account information provided by Ameren Missouri. We defined suitable rooftop based on NREL and Google models with the following key screening parameters:

- **Contiguous rooftop area size:** 4 contiguous panels
- **Rooftop orientation (tilt and azimuth):** All orientations permitted
- **Minimum solar exposure:** 75% of optimal orientation

<sup>105</sup> PVWatts estimates solar PV energy production and costs. Developed by the National Renewable Energy Laboratory. (NREL) <http://pvwatts.nrel.gov/>

<sup>106</sup> SAM estimates hourly solar PV energy production and costs with more detailed inputs and outputs than PVwatts. Developed by the National Renewable Energy Laboratory. (NREL) [http:// https://sam.nrel.gov/](http://https://sam.nrel.gov/)

<sup>107</sup> 20 CSR 4240-20.050 (3)(G)5A



- **Shading:** Accounts for trees, buildings, and other obstructions within 100-150 meters as well as obstructions on the roof
- **Existing solar PV:** Estimated based on aerial imagery



FIGURE 5-2: EXAMPLE OF GOOGLE PROJECT SUNROOF DETAIL

Our team relied on NREL’s PVWatts (Version 6) and SAM tools to estimate system generation for both residential and commercial sited systems. PVWatts models PV power density based on site specific resource data sourced from NREL’s LIDAR-based NSRDB to estimate total solar irradiance in conjunction with PV system specifications. For this analysis the following assumptions are summarized in Table 5-6.

TABLE 5-6: KEY ASSUMPTIONS IN SOLAR PV ANALYSIS<sup>108</sup>

Parameter	Assumptions
Module Type	Standard (Crystalline Silicon)
Residential System Sizes (Nominal DC Capacity)	3 kW, 5 kW, 7 kW, 10 kW, 25 kW, 50 kW
Business System Sizes (Nominal DC Capacity)	3 kW, 5kW, 7 kW, 10 kW, 25 kW, 50 kW, 100 kW, 250 kW, 500 kW, 1,000 kW, 2,000 kW
System losses	14.1%
Tilt (Fixed)	35 degrees
Azimuth (Residential)	168 degrees
Azimuth (Business)	180 degrees
Capacity Factor (Fixed)	16.3%
Capacity Factor (Tracking)	18.6
DC to AC size ratio	1.15
Inverter efficiency	96% (micro-inverter)
Battery Round-Trip Efficiency	85%
Technology Useful Life	20 years

As part of the analysis, our team calculated capacity factors for both residential and commercial buildings. Using rooftop orientation data from Google for various locations within Ameren’s territory, the GDS team estimated an average residential system capacity factor weighted by varying rooftop orientations. The commercial capacity factor was based on an assumed flat-roof building. We applied the capacity factor to the system size and multiplied by 8,760 to estimate annual electricity generation.

To estimate economic potential for solar PV, pertinent data on system costs were gathered along with calculated generation benefits to use in the benefit-cost analysis which was conducted at the measure level. The GDS team relied on multiple data sources to determine the solar PV system costs for varying system sizes and configurations. We assessed system component costs based on data included the National Renewable Energy Laboratory’s (NREL) Q1 2021 Benchmarking report<sup>109</sup> which provided detailed cost information on modules, inverters (by technology), structural and electrical balance of system, supply chain, permitting-inspection-interconnection, marketing, overhead, and profit. Cost parameters were adjusted these from a national level to Missouri-specific values by using various market data provided by Energy Sage<sup>110</sup>. This analysis produced an estimated installation cost per watt installed which was applied to various system sizes to estimate total installed cost. Additionally, O&M costs were included that scale with system size. Finally, we assumed the impact of the federal investment tax credit (ITC) to follow the existing schedule at the time of this report which equates to a 30% tax credit for commercial and residential systems by 2023.<sup>111,112</sup>

In addition to modeling solar PV system costs, the GDS team also estimated cost impacts for solar PV systems coupled with battery storage. As these systems are far less prevalent in both residential and commercial systems at the time of reporting, fewer published data on battery costs, balance of system costs, and maintenance were available. Moreover, the battery capacity is also variable based on the service need. Ultimately, multiple data sources were used to assume

<sup>108</sup> 20 CSR 4240-20.050 20 CSR 4240-20.050(3)(G)1

<sup>109</sup> U.S. Solar Photovoltaic System Cost Benchmark: Q1 2021. NREL, November 2021.

<sup>110</sup> Energysage Solar Marketplace Intel Report, H2 2021 – H1 2022.

<sup>111</sup> 20 CSR 4240-20.050 (3)(G)5C

<sup>112</sup> EO-2023-0099 1CA (Special Contemporary Issues)

an overall capital cost per kWh based on a 3- or 4-hour battery for various measure permutations. O&M costs were largely defined by a ten-year amortized battery replacement cost.

TABLE 5-7: ASSUMED SOLAR PV INSTALLATION COST (2023)

Sector	System Cost (\$/ DC Watt)
Residential	\$2.72
Residential (Battery)	\$3.20-\$6.70
Business, roof mounted	\$1.72
Business, roof mounted (Battery)	\$1.98-\$3.35
Business, ground mounted	\$1.72
Business, ground mounted (Battery)	\$1.84
Operations & Maintenance	\$16/kW/yr
Operations & Maintenance (with battery)	\$29/kW/yr

#### 5.1.4 Customer Adoption

It is notable while the TRC test for solar PV systems doesn't meet a 1.0 cost-effectiveness threshold, Ameren Missouri customers install solar PV systems at their homes and businesses. Consequently, a baseline, business-as-usual (BAU) forecast was developed for integration into the IRP modeling along with expected customer adoption for maximum and realistic potential for those system configurations and premise types where technologies pass a cost-effectiveness threshold of TRC equal to 1.0 or greater. The customer adoption forecasts are based upon:

- Number of existing installed systems,
- Trend of existing system installation from 2015-2021,
- Willingness to participate and market adoption data collected from Ameren customers during the 2020 Ameren Missouri DSM Market Potential Study,
- Bass-diffusion curve and coefficients based upon the NREL dGen model<sup>113</sup> for the state of Missouri, EIA DGPV interconnection and Census data

Three adoption scenarios for CHP and solar PV installations are described below:

- **Realistic Achievable Potential;**
  - up to 36% market adoption for the residential sector, and
  - up to 15% market adoption for the non-residential sector, and
- **Maximum Achievable Potential;**
  - up to 74% market adoption for the residential sector, and
  - up to 26% market adoption for the non-residential sector, and

## 5.2 DER POTENTIAL FINDINGS

This section of the report presents the Technical, Economic, Achievable (MAP and RAP) for CHP and Solar PV.

<sup>113</sup> <https://www.nrel.gov/analysis/dgen/>

5.2.1 Combined Heat & Power

Table 5-8 summarizes the CHP cumulative annual potential estimates for electric demand and Table 5-9 for electric energy. 2043 technical market potential for CHP represents 22.0% of the 2043 business sector sales forecast and economic potential represents 6.4% of the 2040 business sector sales forecast.

TABLE 5-8: CUMULATIVE SUMMARY OF CHP ELECTRIC DEMAND MARKET POTENTIAL

Year	Technical (MW)	Economic (MW)	MAP (MW)	RAP (MW)
2026	6.4	1.5	0.7	0.6
2033	22.5	5.3	2.5	1.8
2043	120.0	28.5	8.8	4.0

TABLE 5-9: CUMULATIVE SUMMARY OF CHP ELECTRIC ENERGY MARKET POTENTIAL

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
2026	90,465	26,187	14,203	12,583
2033	639,313	185,060	91,052	73,339
2043	4,251,069	1,230,559	469,316	284,237

Figure 5-3 summarizes the shares of technical potential by CHP technology type.

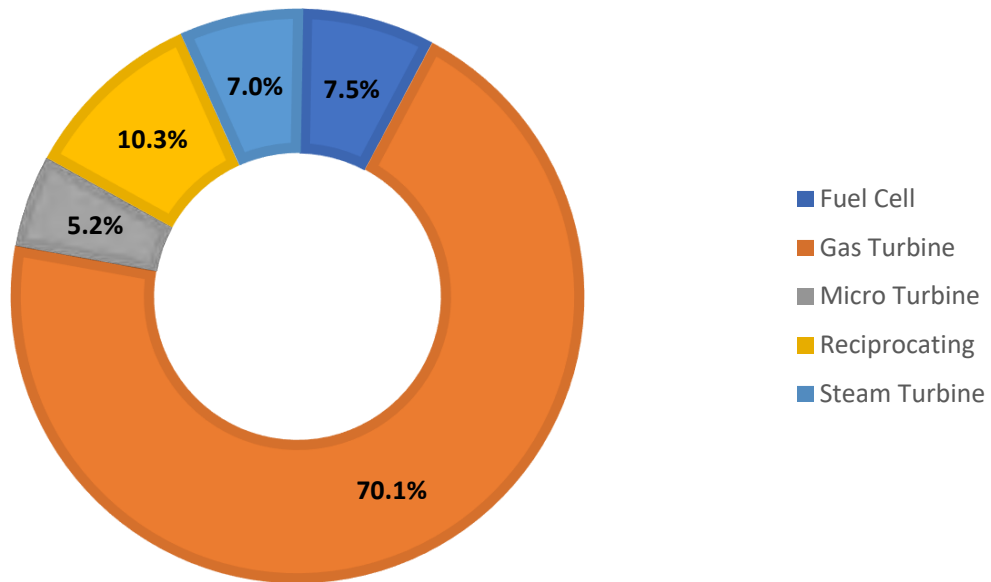


FIGURE 5-3: CHP 2043 TECHNICAL POTENTIAL TECHNOLOGY SHARES

Table 5-10 summarizes the cost effectiveness results for each technology and for each cost-effectiveness perspective. Costs included in the Utility Cost test (UCT) and Rate Impact Measure (RIM) test include incentives to the customer at a 30% share of the technology incremental cost. The Participant Test does not include the consideration of the customer incentive as representation of the customer decision-making process absent program intervention.

TABLE 5-10: SUMMARY OF CHP COST-EFFECTIVENESS<sup>114</sup>

CHP Technologies	TRC Test Range	UCT Range	Participant Test Range	RIM Ratio Range
Fuel Cell (175 - 1,125kW)	0.4 – 0.6	0.8 – 2.1	0.9 – 2.6	0.3 – 0.5
Gas Turbine (2,500 – 10,000kW)	0.8 – 1.3	3.8 – 5.7	1.9 – 3.0	0.5 – 0.6
Micro-Turbine (Gas) (25 – 200kW)	0.5 – 0.6	1.8 – 2.1	1.2 – 1.3	0.4
Reciprocating Engine (125 – 4,500kW)	0.5 – 0.8	1.8 – 2.9	1.2 – 1.8	0.3 – 0.6
Steam Turbine (1,500 – 5,000kW)	0.2	1.4	0.6	0.1

Large gas turbines, with capacity greater than 7.5 MW, are the technologies that are passing TRC cost-effectiveness. For all CHP technologies, the systems with the larger capacity are the most cost-effective with economies of scale.

It is notable that most of the CHP technologies do not pass cost-effectiveness screening under the TRC test following the MEEIA framework. This test is the primary cost-effectiveness criteria used to determine whether a utility sponsored program intervention is prudent. However, it may be the case that certain site location conditions have important performance parameters that allow for a favorable cost-effectiveness assessment for that specific site, even if the average system and facility is not cost-effective as analyzed. Additionally, it is notable that many of the technologies are cost-effective from the participant cost test perspective, while failing the TRC test.

This analysis assumes that Ameren Missouri will continue to offer CHP technologies through the Business Custom program for upcoming years. Table 5-11 summarizes that expected budget that would need to be included within the Custom program to cover the CHP market achievable potential.

TABLE 5-11: CHP PROGRAM BUDGETS (\$ IN MILLIONS)

Year	Program MAP Budget (Millions)	Program RAP Budget (Millions)
2033	\$2.9	\$1.2
2043	\$8.5	\$2.6

Program budgets reflect the following assumptions regarding CHP:

- For Realistic Achievable Potential (RAP), there is an assumed installation incentive of \$200/kW up to \$25,000 (or 40% of installed cost), until a project hit a \$2M total rebate.
- For Maximum Achievable Potential (RAP), there is an assumed installation incentive of 100% of installed cost.
- Program administrative cost of 25% of the total incentive costs was assumed.<sup>115</sup>

### 5.2.2 Solar Photovoltaics

Table 5-12 and Table 5-13 summarize the Solar PV cumulative energy potential estimates for electric generation for the residential and non-residential sectors respectively. Table 5-14 and Table 5-15 summarize the Solar PV cumulative demand potential estimates for the residential and non-residential sectors. 2043 technical market potential for Solar PV represents 36.8% of the 2043 residential and business sector sales forecast combined.

<sup>114</sup> 20 CSR 4240-20.050 (5)(E); 20 CSR 4240-20.050 (5)(F)

<sup>115</sup> 20 CSR 4240-20.050 (3)(G)5B

**TABLE 5-12: SUMMARY OF RESIDENTIAL SOLAR PV ELECTRIC DEMAND MARKET POTENTIAL**

Year	Technical DC Capacity (MW)	Technical Peak Capacity (MW) <sup>116</sup>	Economic (MW)	MAP (MW)	RAP (MW)
2026	14.6	62	0	0	0
2033	2,155	914	0	0	0
2043	6,015	2,551	0	0	0

**TABLE 5-13: SUMMARY OF NON-RESIDENTIAL SOLAR PV ELECTRIC DEMAND MARKET POTENTIAL**

Year	Technical DC Capacity (MW)	Technical Peak Capacity (MW) <sup>117</sup>	Economic (MW)	MAP (MW)	RAP (MW)
2026	30.6	13.4	4.24	2.30	2.04
2033	216	94.4	30	14.8	11.9
2043	1,441	629	200	76.2	46.1

**TABLE 5-14: SUMMARY OF RESIDENTIAL SOLAR ELECTRIC ENERGY MARKET POTENTIAL**

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
2033	3,072,067	0	0	0
2043	8,571,985	0	0	0

**TABLE 5-15: SUMMARY OF COMMERCIAL SOLAR ELECTRIC ENERGY MARKET POTENTIAL**

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
2033	309,125	97,290	47,867	38,554
2043	2,058,371	647,830	247,044	149,596

Table 5-16 summarizes the cost effectiveness results for each technology and for each cost-effectiveness perspective. Costs included in the UCT and RIM test include incentives to the customer at a 30% share of the technology incremental cost. The participant cost test does not include incentive payments. This is a necessary assumption to identify likely participant decision-making, in the absence of a utility funded program intervention. The participant cost test also assumes that all energy produced is consumed on site.

**TABLE 5-16: SUMMARY OF SOLAR PV COST-EFFECTIVENESS<sup>118</sup>**

Solar PV Technologies	TRC Test Range	UCT Range	Participant Test Range	RIM Ratio Range
Residential Roof-mounted (3 – 25kW)	0.5 – 0.7	1.0 – 1.2	0.9 – 1.1	0.4 – 0.5
Residential Roof-mounted with Batteries (3-25kW)	0.6 – 0.7	0.2 – 1.9	1.0 – 1.2	0.5
Business Roof mounted (5 – 1,000kW)	0.8 – 1.0	3.0 – 3.4	1.6	0.7

<sup>116</sup> This peak capacity represents the alternating current (AC) production between the hours of 16 and 18 and may not align with MISO Resource Adequacy models.

<sup>117</sup> This peak capacity represents the alternating current (AC) production between the hours of 16 and 18 and may not align with MISO Resource Adequacy models.

<sup>118</sup> 20 CSR 4240-20.050 (5)(E); 20 CSR 4240-20.050 (5)(F)

Solar PV Technologies	TRC Test Range	UCT Range	Participant Test Range	RIM Ratio Range
Business Roof mounted with Batteries (5-1,000kW)	0.8	1.6 – 2.6	1.1 – 1.4	0.5 – 0.6
Business Ground mounted (100 kW-2MW)	0.8 – 1.0	3.0 – 3.4	1.6	0.7
Business Ground mounted with Batteries (100 kW-2MW)	0.8	1.6 – 2.6	1.1 – 1.4	0.5 – 0.6
Business Ground mounted Tracking (100 kW-2MW)	1.0 – 1.1	3.0 – 3.6	1.6 – 1.7	0.6 – 0.7
Business Ground mounted Tracking with Batteries (5-50kW)	0.7 – 0.8	2.2 – 2.9	1.4 – 1.5	0.5 – 0.6

It is notable that no Solar PV technologies pass cost-effectiveness screening under the TRC test following the MEEIA framework. This test is the primary cost-effectiveness criteria used to determine whether a utility sponsored program intervention is prudent. For all technologies, the systems with the larger capacity are more cost-effective largely because of the economies of scale. As systems approach small utility/neighborhood scale, over 500 kW, systems become marginally cost-effective. Consequently, while these customer-owned, behind-the-meter systems do not pass cost-effectiveness, readers should not conclude that solar PV is a resource where Ameren should not consider investment as there are alternative cost-effectiveness perspectives outside of the MEEIA framework.

Additionally, it is notable that many of the technologies are cost-effective from the participant cost test perspective while failing the TRC test as shown in **Error! Reference source not found.** While the participant cost is not an exact replica of a customer choice criteria, like a pay-back period, it is a reasonable proxy for customer decision making. With many technologies passing the participant cost test, this is congruent with industry interest and adoption of solar PV systems, in particular for large business sector customers.

The battery storage capacity and battery dispatch approach can have a significant impact on the hourly load. The battery was sized to be dispatched for up 3 to 4 hours of operation of approximately 20-25% of the solar PV DC capacity rating. The dispatch model selected was a method that would be beneficial for the end-use customer, specifically to extend the solar production shape further into the late afternoon to reduce tariff demand charges and/or accommodate short-term weather events. It is assumed that the battery would be dispatched to 85% of the rated capacity and primarily on weekdays. Increasing the battery capacity to maximize the peak capacity benefits was considered, but the additional costs did not outweigh the additional benefits. Finally, the battery storage is assumed to be charged by the solar PV (and not re-charged by the electric grid). This approach ultimately shifts the production load shape an hour or two later into the afternoon.

### 5.3 SENSITIVITIES

As part of the market potential assessment for DERs, five sensitivities were analyzed to consider potentially different outcomes if input parameters effecting future participation or cost-effectiveness were to change from the original assumptions.<sup>119</sup> These sensitivities included:

- Higher and lower avoided energy costs
- Higher avoided transmission and distribution costs
- All eligible DSM opt-out large business customers included
- Decreasing technology costs of solar PV and batteries

<sup>119</sup> 20 CSR 4240-20.050 (6)(C)1; 20 CSR 4240-20.050 (6)(C)2

### 5.3.1 Avoided Energy Costs Sensitivity

Table 5-17 summarizes the market potential outcomes and changes if avoided energy costs were to increase by 30% or decrease by 50%.

TABLE 5-17: SUMMARY OF MARKET POTENTIAL OUTCOMES WITH DIFFERENT AVOIDED ENERGY COSTS

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
<b>Higher Avoided Energy Costs (30%)</b>				
Combined Heat and Power (2043)	4,251,069	2,284,749	871,367	527,735
Percent difference to base scenario	0%	86%	86%	86%
Solar PV (2043)	10,630,356	1,922,121	732,983	443,855
Percent difference to base scenario	0%	197%	197%	197%
<b>Lower Avoided Energy Costs (50%)</b>				
Combined Heat and Power (2043)	4,251,069	0	0	0
Percent difference to base scenario	0%	n/a	n/a	n/a
Solar PV (2043)	10,630,356	42,675	16,274	9,854
Percent difference to base scenario	0%	93%	93%	93%

### 5.3.2 Avoided T&D Cost Sensitivity

Table 5-18 summarizes the market potential outcomes and changes if avoided transmission and distribution costs were to increase by 200% or 500%. This sensitivity is a proxy analysis for potential locational value where specific electric network component costs could be deferred or eliminated through the acquisition of DERs on that limited network.

TABLE 5-18: SUMMARY OF MARKET POTENTIAL OUTCOMES WITH DIFFERENT AVOIDED T&D COSTS

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
<b>Higher Avoided T&amp;D Costs (200%)</b>				
Combined Heat and Power (2043)	4,251,069	1,845,838	703,974	426,356
Percent difference to base scenario	0%	50%	50%	50%
Solar PV (2043)	10,630,356	1,922,121	732,983	443,855
Percent difference to base scenario	0%	197%	197%	197%
<b>Higher Avoided T&amp;D Costs (500%)</b>				
Combined Heat and Power (2043)	4,251,069	2,284,749	871,367	527,735
Percent difference to base scenario	0%	86%	86%	86%
Solar PV (2043)	10,630,356	2,028,107	773,400	468,329
Percent difference to base scenario	0%	213%	213%	213%

### 5.3.3 All Large Business Customer Opt-Outs Removed

Table 5-19 summarizes the market potential outcomes and changes if all eligible large business customers opt-out of DSM (largely rate class 11M). Solar PV does not substantially change, because the removal of these several hundred customers does not remove much available roof area.



TABLE 5-19: SUMMARY OF MARKET POTENTIAL OUTCOMES RELATED TO LARGE CUSTOMER OPT-OUTS

Year	Technical (MWh)	Economic (MWh)	MAP (MWh)	RAP (MWh)
Combined Heat and Power (2040)	5,313,836	1,538,199	586,645	355,296
Percent difference to base scenario	25%	25%	25%	25%

5.3.4 Decreasing Technology Cost of Solar PV and Batteries

Table 5-20 summarizes the market potential outcomes and changes if solar PV and battery storage costs continue to decline in future years. Cost Effectiveness analysis considers technology costs in 2030. As shown here, total economic and all achievable potential would increase by almost 200%.

TABLE 5-20: SUMMARY OF MARKET POTENTIAL OUTCOMES RELATED TO DECREASING TECHNOLOGY COSTS

Year	Technical (MW)	Economic (MW)	MAP (MW)	RAP (MW)
Solar PV (2043)	10,630,356	1,922,121	732,983	443,855
Percent difference to base scenario	0%	197%	197%	197%

Future cost assumptions are as follows and illustrated in Figure 5-4.

- **Solar PV price drop:** 2017 - 2030: 2.4% annually
  - Source: NREL
- **Battery Storage:** price drop 2018 – 2030: 3.8% annually
- **Battery Storage:** price drop 2031 – 2050: 1.2% annually
  - Source: NREL

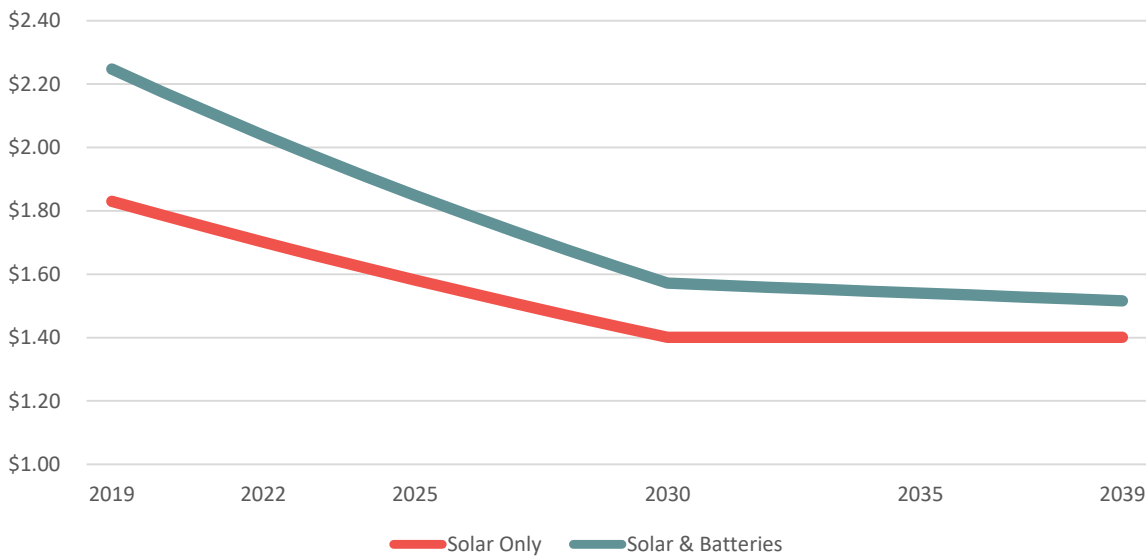


FIGURE 5-4: \$/KW COST FOR BUSINESS SECTOR SOLAR PV INSTALLATIONS

## 6 COMBINED RESULTS

This section provides total cost-effectiveness, savings, and program budgets for each study, along with a combined total, where appropriate.

### 6.1 CUMULATIVE ANNUAL POTENTIAL SAVINGS

Table 6-1 provides cumulative annual program RAP results across the 2024-2028 (Years 1-5) timeframe, as well as for 2033 (10<sup>th</sup>-year) and 2043 (20<sup>th</sup>-year). The combined program RAP potential is more than 1.0 million MWh by 2026, with more than two thirds of the potential from the business sector. By 2043 the combined program RAP is more than 4.0 million MWh.

TABLE 6-1 COMBINED PROGRAM RAP ENERGY EFFICIENCY POTENTIAL

Sector	2024	2025	2026	2027	2028	2033	2043
Residential	105,159	216,057	333,390	456,473	585,581	1,223,770	2,262,238
Business	233,465	458,816	678,451	885,578	1,083,194	1,260,512	1,431,130
Demand Response	0	0	0	0	0	0	0
Distributed Energy	5,346	11,522	18,638	26,819	36,196	105,995	387,375
Combined Total	343,970	686,394	1,030,478	1,368,870	1,704,971	2,590,276	4,080,743

Figure 6-1 shows breakdown of the contributions of each study component towards the 5-yr, 10-yr, and 20-yr program RAP savings as a percentage of total forecasted sales. The cumulative annual savings increases from 5.8% in 2024 to 12.7% by 2043. The residential sector accounts for 34% of the potential in 2026, rising to 56% by 2043, with most of the remaining potential from the business sector. Distributed energy accounts for a small portion of the potential. Demand response does not contribute to the energy savings potential.<sup>120</sup>

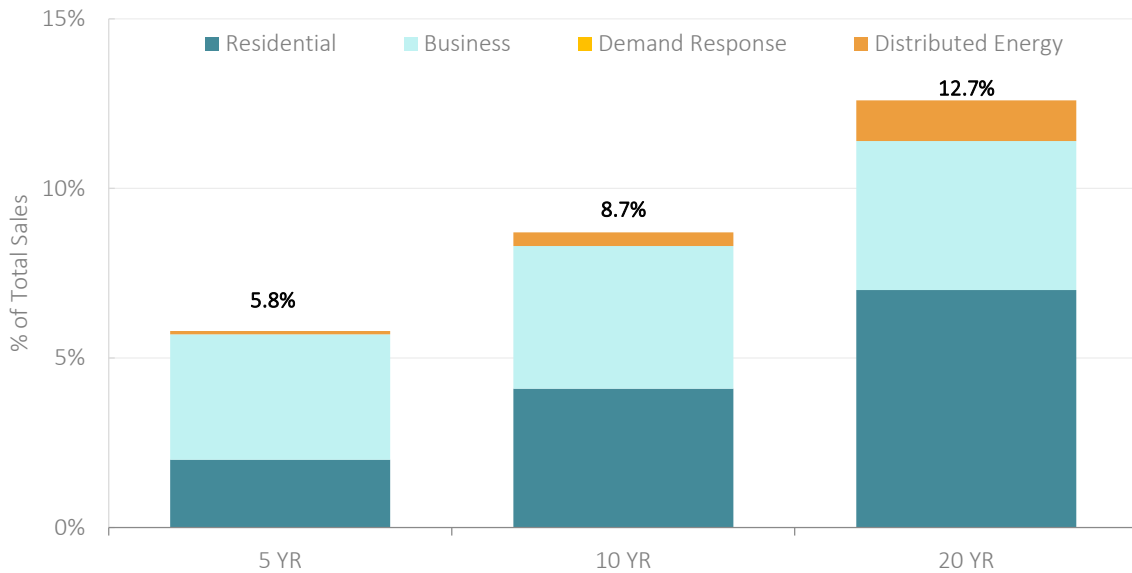


FIGURE 6-1: PROGRAM RAP ENERGY EFFICIENCY POTENTIAL BY STUDY COMPONENT

Table 6-2 provides cumulative annual program RAP results across the 2024-2028 (Years 1-5) timeframe, as well as for 2033 (10<sup>th</sup>-year) and 2043 (20<sup>th</sup>-year). The combined program RAP potential is more than 515 MW by 2026, with more than 40% of the potential from demand response. By 2043 the combined program RAP is nearly 1,600 MW.

<sup>120</sup> Potential savings from DER installations would likely be attributed to the business custom program.

TABLE 6-2 COMBINED PROGRAM RAP PEAK DEMAND REDUCTION POTENTIAL

	2024	2025	2026	2027	2028	2033	2043
<b>Residential</b>	40	80	122	164	207	355	509
<b>Business</b>	59	117	174	229	281	545	697
<b>Demand Response</b>	172	192	214	232	246	271	298
<b>Distributed Energy</b>	1	2	4	6	8	23	89
<b>Combined Total</b>	<b>271</b>	<b>392</b>	<b>515</b>	<b>631</b>	<b>741</b>	<b>1,194</b>	<b>1,594</b>

### 6.2 BENEFITS/COSTS

Table 6-3 below provides the net-present-value (“NPV”) benefits and costs (according to the TRC test) of the combined program potential across the study timeframe. The overall TRC ratio is 1.73, with an estimated total of nearly \$1.6 billion in net benefits.

TABLE 6-3: COMBINED PROGRAM RAP TRC NPV BENEFITS AND COSTS –BY 2043 (\$, IN MILLIONS)

Study Area	NPV Benefits	NPV Costs	NPV Net Benefits	TRC Ratio
<b>Residential</b>	\$1,591	\$1,137	\$455	1.40
<b>Business</b>	\$1,572	\$707	\$864	2.22
<b>Demand Response</b>	\$446	\$196	\$250	2.27
<b>Distributed Energy</b>	\$124	\$112	\$12	1.11
<b>Total</b>	<b>\$3,733</b>	<b>\$2,152</b>	<b>\$1,581</b>	<b>1.73</b>

Figure 6-2 shows the annual program RAP budgets for all study components. Total budgets range from \$109 million in 2024 to more than \$162 million by 2043.

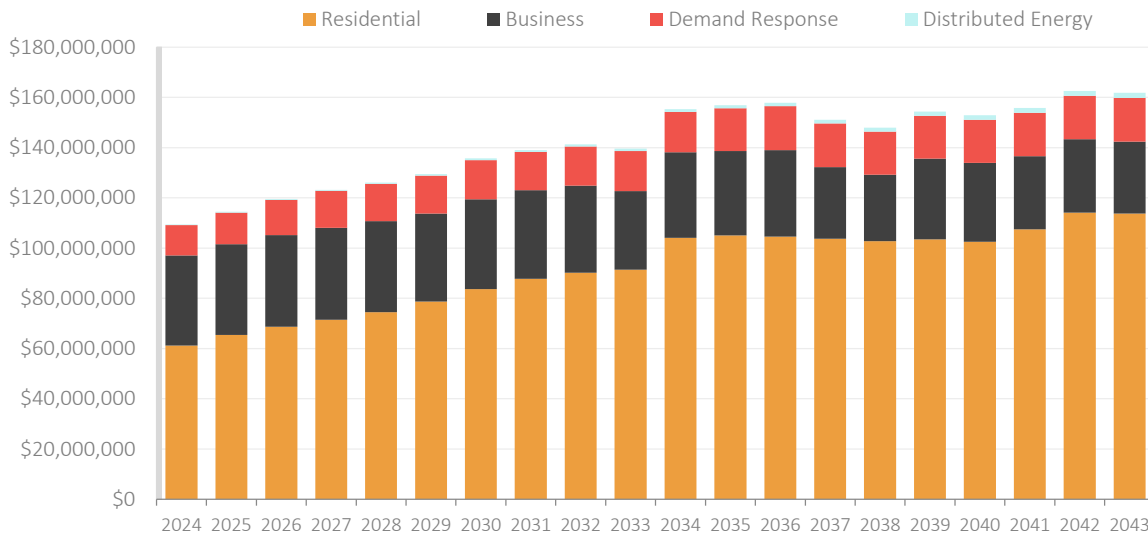


FIGURE 6-2: COMBINED PROGRAM RAP BUDGETS

### 6.3 ENERGY EFFICIENCY BENCHMARKING

As part of a review of the energy efficiency potential results, the GDS Team was tasked to update the benchmarking analysis (completed as part of the 2020 MPS) with the current 2023 MPS results for Ameren Missouri and any updated potential estimates available from the comparison utilities. The first step in the

benchmarking analysis was a top-down approach. This approach was intended to be national and comprehensive.<sup>121</sup> The source of this data was the DOE’s Energy Efficiency Studies Catalog (DOE Catalog).<sup>122</sup> The DOE Catalog is a compilation of roughly 93 state and local energy efficiency potential studies published since 2007. To provide a more direct comparison to the 2020 Ameren Missouri MPS, the GDS Team limited the comparison to studies in the DOE Catalog that included estimates of achievable potential and covered a roughly 20-year timeframe.<sup>123</sup> The DOE MAP-comparison was based on the average of the highest two utilities in the benchmarking analysis, while the DOE-RAP comparison was based on the 50th percentile. Table 6-4 provides the result of the top-down benchmarking, noting relative close alignment in the result, particularly with regard to the Realistic Achievable Potential levels.

TABLE 6-4: TOP-DOWN BENCHMARKING OF ENERGY EFFICIENCY POTENTIAL

	DOE	GDS
Achievable Potential (as a % of eligible sales)	20 YR	20 YR
Maximum Achievable Potential (MAP)	25%	19%
Realistic Achievable Potential (RAP)	16%	15%

Following the top-down benchmarking, the GDS Team then sought to take a “deep-dive” to focus on the most recent potential data for neighboring states or other utilities in the region.

Table 6-5 provides a list of the potential studies included in the “deep-dive” benchmarking analysis, as well as a comparison of maximum achievable and realistic achievable potential results. The GDS Team selected studies that were publicly available and provided enough methodological and reporting detail to allow for basic comparisons.<sup>124</sup> With a variety of different consultants undertaking the many other potential studies that are available, differences across studies assumptions and methodologies, different regulatory environments, and different program design considerations can result in varying levels of estimated future potential savings. The GDS Team briefly reviewed the methodological considerations of these studies relative to the 2023 Ameren Missouri MPS to better understand the varying outcomes. Appendix A provides a summary review of each benchmarked study.

TABLE 6-5: BENCHMARKING OF ENERGY EFFICIENCY POTENTIAL TO OTHER UTILITIES

STUDY	# YEARS	MAP* (%)	RAP (%)
Ameren Illinois (IL)	20	16%	13%
ComEd (IL)	18	10%	7%
AES-Indiana (IN)	19	25%	19%
Consumers Energy (MI)	20	17%	14%
Focus on Energy (WI)	12	17%	13%

<sup>121</sup> 20 CSR 4240-20.050 (2)

<sup>122</sup> The DOE Catalog was also used in the 2020 benchmarking analysis. The last update to this catalog was in December 2020, with only a few additional studies included in the catalog. As a result, the DOE comparison data is nearly identical to the 2020 analysis.

<sup>123</sup> The DOE Catalog provides estimates of long-term potential as a % of average annual potential savings. For direct comparison, the GDS Team multiplied the average annual savings \* length of the study. This data point was then compared to the cumulative annual savings found in the 2020 Ameren Missouri MPS.

<sup>124</sup> The GDS Team sought input from stakeholders to produce additional studies to incorporate into the benchmarking analysis. While a few jurisdictions currently have new market potential analyses underway, no additional studies were offered for review.

STUDY	# YEARS	MAP* (%)	RAP (%)
<b>Pennsylvania Statewide (PA)</b>	10	13%	6%
<b>Eversource (MO)</b>	20	13%	8%
<b>Louisville Gas &amp; Electric</b>	20	6%	6%
<b>Arkansas PSC (AR)</b>	10	9%	8%
<b>Minnesota Statewide (MN)</b>	10	21%	14%

*\*MAP or similar "high" scenario*

Last, because the potential study benchmarking focuses largely on the forecasted cumulative 20-year potential, we also compared the near-term potential identified in the 2023 MPS with most 2021 reported data of actual energy efficiency savings from 32 investor-owned utilities (IOUs) in nearby or neighboring states.<sup>125</sup> Across the residential and commercial sectors combined<sup>126</sup>, the near-term RAP savings from the first year of the MPS (2024) are at the 48<sup>th</sup> percentile of the comparison group. This increases to the 69<sup>th</sup> percentile under the MAP scenario. Thus, the near-term savings represent roughly the median savings of comparison utilities, and the MAP is greater than 2/3<sup>rd</sup> of the comparison group.

<sup>125</sup> 2021 energy efficiency savings and sales data is from EIA Form 861. Investor-owned utilities in Arkansas, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, and Oklahoma are included.

<sup>126</sup> Industrial sales and savings were excluded from the comparison due to concerns over opt-out customers and the potential impact on the data.

## APPENDIX A: BENCHMARKING

GDS gathered information from ten publicly available potential studies conducted in the Midwest or reflecting similarities to the Midwest. In some cases, jurisdictions have not made updates since this information was provided in the prior Ameren Missouri (Ameren) potential study, though several have made updates since that time. These studies and their outcomes can be used to compare Ameren’s current potential study results to those conducted elsewhere. This appendix provides summary information from ten studies, providing key metrics and a discussion of nuances that can drive differences between the studies and the interpretation of results.

All ten studies were completed between 2015 and 2022. They share common elements – modeling technical, economic, and achievable potentials. Most utilize the TRC test for cost-effectiveness, with two using the UCT, and one the SCT. Achievable potential definitions and boundaries differ, but typically have realistic achievable estimates constraining a maximum achievable estimate with annual budget limitations or assumptions about market adoption of measures that pass the economic potential screening. Each study provides a different range of detail and information. Table A-1 summarizes key metrics, below. Following Table A-1, each study is summarized and includes additional information for further comparison.

Across the ten comparison studies, achievable potential varied as a percent of load. Factors include underlying modeling assumptions or unique conditions not present in one study or another. For example, Louisville Gas & Electric and Kentucky Utilities applied a value of \$0 to any capacity savings for energy efficiency and allowed only replace-on-failure (i.e. lost opportunity) savings for the second ten years of their potential study. Studies with longer time horizons tended to have higher achievable potential savings, likely reflecting that programs would have greater opportunity with more available time to engage with the market. Other factors that may shape differences between the studies, but were not readily apparent with consistent available information in the reports, include:

- ❑ Avoided cost and other major modeling assumptions
- ❑ Demographic and firmographic differences between utilities
- ❑ Differences in utility climate and weather sensitive loads
- ❑ The assumptions used to account for current equipment saturation
- ❑ Differences in adoption curves or willingness-to-pay modeling
- ❑ Cumulative savings being relative to a year preceding the study period or at the end of the study period

All of these factors can lead to varying outcomes that are not fully explained in each report in a way that makes them directly comparable to Ameren’s potential study. However, as a body of recent potential studies from the middle portion of the U.S., they do provide context and perspective useful for making comparisons to Ameren’s study.

Table A-1 below, provides a summary of key comparison metrics. Beneath the table, each of the utilities included in the comparison has a brief description of its potential study and more detail behind the summary results.

TABLE A-1 KEY POTENTIAL STUDY METRICS

Study Name	ISO	Subject	Year Published	Forecast Period	Market Size	Achievable Potential
<b>Ameren Missouri 2023 Energy Efficiency Potential Study</b>	MISO	Energy Efficiency	2023	2024-2043	2040 Forecast: Res: 16,800 GWh C&I: 15,900 GWh	RAP: 15% MAP: 19%
<b>Ameren Illinois Demand Side Management Market Potential Study</b>	MISO	Energy Efficiency	2016	2017-2036	2036 Forecast: Res: 11,300 GWh C&I: 24,000 GWh	RAP: 12.5% MAP: 16.4%
<b>Arkansas Energy Efficiency Potential Study</b>	MISO (mostly)	Energy Efficiency	2015	2016-2025	2016 Statewide: C&I: ~14,000 GWh Res: ~11,500 GWh	Higher \$: 9.0% Current \$: 7.8% Lower \$: 5.7%

Study Name	ISO	Subject	Year Published	Forecast Period	Market Size	Achievable Potential
		(statewide, IOUs only)				
		Demand Response			Not presented for DR	9%
<b>Focus on Energy Wisconsin Energy Efficiency Potential Study</b>	MISO	Energy Efficiency (Statewide)	2021	2023-2034	Res: 21,000 GWh C&I: 50,000 GWh	Optimized Potential: 17%  Current Policy Potential: 13%
<b>ComEd Energy Efficiency Potential Study</b>	PJM	Energy Efficiency	2016	2017-2030	Res: 3.5 MM C&I: 376 k	Max: 10% PP Ach: 7%
<b>Consumers Energy Electric Energy Waste Reduction Potential Study</b>	MISO	Energy Efficiency	2021	2021-2040	2040 baseline load: Res: 14,861 GWh Com: 14,528 GWh Ind: 11,205 GWh	2040 Cumulative Max Ach: 16.5% Prog Ach: 14.1%
<b>AES Indiana Market Potential Study (Formerly IPL)</b>	MISO	Energy Efficiency	2022	2024-2042	2024 forecasted load: Res: 5,200 GWh C&I: 8,200 GWh	RAP: 19% MAP: 25%
		Demand Response			3.3 GW peak 2042	20% in 2042
<b>Evergy 2019 DSM Potential Study (Formerly Kansas City Power &amp; Light)</b>	SPP	Energy Efficiency	2019	2023-2042 (savings potential relative to 2032)	2019 loads Res: 6,552 GWh Com: 7,743 GWh Ind: 2,733 GWh	Max Ach: 13.2% (net) Realistic Ach: 7.6% (net)
		Demand Response			2019 summer peak Res: 1,521 MW Com: 1,183 MW Ind: 345 MW	Max Ach: 20% Realistic Ach: 12.5%
<b>Louisville Gas &amp; Electric and Kentucky Utilities</b>	N/A	Energy Efficiency	2017	2019-2038	Res: 11,453 GWh Com: 10,200 GWh	Incentive Scenarios Low: 4.2% Mid: 5.5% High: 6.2%
<b>MN Statewide</b>	MISO	Energy Efficiency	2018	2020-2029	Res: 32% of market% Com: 36% Ind: 19% Opt-Out: 13%	PA Ach: 14% MAP: 21%
<b>Energy Efficiency Potential Study for Pennsylvania</b>	PJM	Energy Efficiency (Statewide)	2020	2021-2030	2010 load <sup>1</sup> Res: 54,193 GWh Com: 55,957 GWh Ind: 36,511 GWh	PA Ach: 6.3% MAP: 12.8% (% of 2010 load)

**Summary Descriptions of Comparison Potential Studies**

In developing the data to support Table A-1, GDS researched the details of each of the example potential studies to help provide context to the underlying modeling and considerations for developing achievable potential. Below, each study is described in a mini-case study format, with information related to how achievable potential was defined and scenarios that that were used to test the sensitivity of multiple achievable potential perspectives.

<sup>1</sup> In Pennsylvania utilities must meet energy efficiency percentage reductions relative to their 2010 load.

### Ameren Illinois Demand Side Management Market Potential Study (2016)

Ameren Illinois' 2016 DSM Market Potential Study served to assess various tiers of energy efficiency potential including technical, economic, maximum achievable, and realistic achievable potential. This study appears to be the most recently completed for Ameren Illinois.<sup>2</sup> The study developed baseline estimates with the latest information on federal, state, and local codes and standards for improving energy efficiency, updated from the prior study completed in 2013. The study consisted of three primary components: market research, a full energy efficiency potential analysis at the measure and program levels, and estimation of supply curves.

Ameren Illinois undertook primary market research to collect data for the Ameren Illinois service territory, including electric and natural gas end-use data, end-use saturation data, and customer psychographics, demographics, and firmographics. This information enables Ameren Illinois to understand how their customers make decisions related to their energy use and energy efficiency investment decisions.

Ameren Illinois' definition of maximum achievable assumed ideal market, implementation, and customer preference conditions, with well-established communication channels, trade allies and delivery partners, and high levels of incentives, administrative, and marketing costs. Realistic achievable potential assumed more conservative conditions as well as limited program budgets. Savings were presented as net.

Primary market research produced adoption rates that were typically lower than those produced from the 2019 Ameren Missouri market research, particularly for maximum achievable potential. In addition, estimates of technical and economic potential are generally lower, suggesting differences in electric equipment penetration or assumptions regarding the current saturation of efficient equipment. Avoided costs were not presented in the study.

TABLE A-2. AMEREN ILLINOIS 2017-2036 ENERGY EFFICIENCY POTENTIAL COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Share of Savings	Commercial Share of Savings	Industrial Share of Savings
2017-2036	TRC	Max: 16.4% PP: 12.5%	Max: 22% PP: 23%	Max: 54% PP: 52%	Max: 24% PP: 24%

### Arkansas Energy Efficiency Potential Study (2016)

The Arkansas Public Service Commission filed its 2016-2025 potential study in mid-2015. Arkansas has not completed a potential study since that time, though is in process with developing a new study in 2023. Economic potential was estimated at 15.5 percent of the 2025 load forecast. Using current budgeting as the base achievable potential scenario, a cumulative saving of 7.8 percent was estimated as achievable across the 10-year forecast period. Additional scenarios also tested the effect of lower budgets, higher budgets, and in the event of a carbon value. The cumulative achievable potential ranged from 5.7 percent (low budget) to 9.0 percent (high budget). No scenario equivalent to maximum achievable potential was presented in the report. Savings are described as being net of free riders, though no details were offered on how net savings were developed. In Arkansas some customers have the option to operate their own self-direct program. Achievable savings were treated as net of self-direct customers, removing their underlying load from the analysis for all technical, economic, and achievable estimates of potential savings.

The market scope included all investor-owned utilities (IOUs) in Arkansas. The market size being modeled for the study was not explicitly described. However, graphical depictions of the residential and commercial/industrial loads were included. The residential market is approximately 11,500 GWh per year, with the commercial/industrial market at approximately 14,000 GWh per year. Technical potential is 32% of the residential market and 13% of the C&I market. To model achievable potential, the study incorporates

<sup>2</sup> <https://www.ilsag.info/resources/potential-studies/>



Arkansas energy efficiency policy requiring that “all major end-uses” be covered, and that achievable potential include savings of “all achievable within a reasonable time period and maximizing net benefits to customers and utility system.” Achievable potential was determined by applying payback acceptance curves that were based on 2012 market research conducted for Kansas City Power & Light.

The potential study included a section related to demand response. The demand response “realistic” achievable potential was estimated at nine percent of capacity by 2025. The “realistic” demand response potential considered demand forecasts, customer acceptance rates, and programmatic best practices. Economic potential was not presented in the report.

Table A-3 summarizes key achievable potential metrics by sector resulting from the Arkansas Energy Efficiency Potential Study for energy efficiency. Sector-level details were not provided for the low and high incentive scenarios.

TABLE A-3. ARKANSAS ENERGY EFFICIENCY POTENTIAL STUDY KEY COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Ach Potential	C&I Ach Potential
2016-2025	TRC	Low \$: 5.7% Current \$: 7.8% High \$: 9.0%	Low \$: N/A Current \$: 10.3% High \$: N/A	Low \$: N/A Current \$: 5.2% High \$: N/A

**Focus on Energy Wisconsin Energy Efficiency Potential Study (2021)**

Wisconsin has a state-wide energy efficiency program that includes all IOUs, most municipal utilities, and many cooperative utilities. In 2021, the Public Service Commission of Wisconsin published its 2021 Focus on Energy Energy Efficiency Potential Study. The study analyzed energy efficiency savings potential for the 2023-2034 time period, reflecting three quadrennial plan periods. For 12-year span, the study found an economic potential of 21 percent of forecasted 2034 electricity sales. Achievable potential used a “current policy potential” to reflect current spending, and a “optimized potential” that reflected more aggressive, though achievable, programs. The overall Current Policy Potential was found to be 13 percent of electricity sales, while the overall Optimized Potential was found to be 17 percent of electricity sales.

For the Focus on Energy study, achievable potentials were defined as:<sup>3</sup>

**Optimized Potential:** all theoretical cost-effective savings opportunities that could realistically be realized if program funding were not constrained. It represents the portion of economic potential that might be assumed reasonably attainable over the course of the planning horizon, given minimal implementation barriers to impede customer participation in Focus on Energy programs.

**Current Policy Potential:** is a subset of optimized potential, constrained by the current annual Focus on Energy budget and in consideration of the equitable balance of current ratepayer program contributions, such as splits between fuels and customer sectors.

Savings are only presented as gross savings and explicitly do not consider net to gross ratios or other considerations for program attribution or spillover. Wisconsin uses a modified TRC test that incorporates a \$15 per ton of carbon value as well as criteria air pollutant emission values reflecting utility costs for avoidance.

Table A-4 summarizes key achievable metrics by sector for the Focus on Energy BAU scenario with sector-level results for each scenario.

<sup>3</sup> [https://focusonenergy.com/sites/default/files/inline-files/Potential\\_Study\\_Report-FoE\\_Efficiency-2021.pdf](https://focusonenergy.com/sites/default/files/inline-files/Potential_Study_Report-FoE_Efficiency-2021.pdf), pp. 2-3.

TABLE A-4. FOCUS ON ENERGY WISCONSIN SCENARIO COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Ach Potentials	C&I Ach Potential
2016-2025	Modified TRC	Opt: 17% Current: 13%	Opt: 19.9% Current: 12.8%	Opt: 15.3% Current: 13.4%

### ComEd Energy Efficiency Potential Study, 2017-2030

ComEd's distribution arm operates energy efficiency programs across its service territory. In 2016, ComEd published its potential study which forecasted opportunities for energy efficiency spanning the 14 years of 2017-2030. The study found an overall economic potential of roughly 29% at the end of 2030 and a maximum achievable potential of 10%. When constrained by program assumptions that maintained current funding levels, the cumulative achievable potential in 2030 was found to be 7 percent. The share of savings was heavily weighted toward the commercial sector, with 66 percent of the potential savings. The residential sector was estimated to achieve 25 percent of savings, with the industrial sector contributing the remaining eight percent.

In the ComEd study, achievable savings were presented as net savings and defined as:

1. Maximum achievable is the amount of cost-effective program potential that could be achieved absent program budget constraints and with incentives set at 100 percent of incremental cost.
2. Program achievable is based on the maximum budget under a two percent of customers' electricity costs limitation and follow current program budgets.

Net savings were derived from the historical evaluated net to gross ratios developed by program evaluators. The industrial sector does not appear to exclude any existing load from the energy efficiency potential analysis (a provision that exempts certain customers was signed into law in late 2016). Adoption rates were informed by interviews with program managers and often constrained by current participation levels and often assumed some potential decrease over time.

Avoided costs were not presented in the study. Savings by year were not tabulated, though were indicated as being influenced by known code and standards changes as well as the treatment of behavioral programs for persistence year-to-year.

TABLE A-5. COMED 2017-2030 ENERGY EFFICIENCY POTENTIAL COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Share of Savings	Commercial Share of Savings	Industrial Share of Savings
2017-2030	TRC	Max: 10% PP: 7%	Max: 22% PP: 25%	Max: 72% PP: 66%	Max: 6% PP: 8%

### Consumers Energy Electric Energy Waste Reduction Potential Study (2021)

In 2021, Consumers Energy (Michigan) completed its most recent energy efficiency potential study. This study presented gross savings across a twenty-year period – 2021-2040. Unlike most studies in this comparison analysis, Consumers Energy utilizes the Utility Cost Test, also known as the Program Administrator Cost Test. The economically achievable potential was estimated at 25.5 percent of baseline sales in 2040. The maximum achievable potential (MAP) was estimated as 16.5 percent, while the potential achievable savings (PAP) was estimated 14.1 percent across the 20-year period.

The chief differences between MAP and PAP are the levels of constraint placed on the potential. MAP is described as unlimited in terms of savings and budgets, focusing primarily on limitations driven by market barriers and customer willingness to adopt measures. Additionally, MAP assumes 60 percent of residential customers will participate in a home energy reports program. Under MAP, savings are expressed in gross

terms. PAP savings are expressed on a net basis and for measures currently offered or have the potential to be offered by Consumers Energy over the forecast horizon. PAP spending and incentives are calibrated to historical budgets. While not explicitly mentioned in the potential study, Michigan’s Public Act 295 of 2008, limited utility expenditures to two percent of retail sales unless approved by the Michigan Public Service Commission.

TABLE A-6. CONSUMERS ENERGY ENERGY EFFICIENCY POTENTIAL STUDY COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	Commercial Achievable Potential	Industrial Achievable Potential
20121-2040	UCT	MAP: 16.5% PAP: 14.1%	MAP: 15.2% PAP: 12%	MAP: 19.0% PAP: 17%	MAP: 15.1% RAP: 14%

### AES Indiana Market Potential Study 2022 (formerly Indianapolis Power and Light)

Conducted by GDS Associates, the AES Indiana Market Potential Study covers the 2024-2042 timeframe, covering an assessment of market potential for the residential, commercial, and industrial sectors. GDS used a bottom-up approach to estimate energy efficiency potential in the residential sector. In the C&I sectors, GDS utilized the bottom-up modeling approach to first estimate measure-level savings and costs, as well as cost-effectiveness, and then applied cost-effective measure savings to all applicable energy shares of load. All savings estimates are provided at the gross level.

Economic potential was determined using the UCT Test. The analysis included estimates of maximum and realistic achievable potential, with definitions of each scenario similar to the 2023 Ameren MPS. Industrial opt-outs were excluded from the estimates of long-term potential baseline load.

In the MAP scenario, incentive levels were assumed to represent 100% of the incremental measure cost. In the RAP scenario, incentives reflected historical levels, though no constraints were placed on overall spending. Achievable potential adoption rates were based on primary WTP data collected as part of the MPS. Similar to the 2023 Ameren Missouri MPS, a share of the measures that reached the end of their useful life were allowed to re-enter the eligible potential market, assuming sustained savings and a new set of measure/program costs.<sup>4</sup>

TABLE A-7. AES INDIANA MARKET POTENTIAL STUDY COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	C&I Achievable Potential
2024-2042	UCT	MAP: 31% RAP: 19%	MAP: 23% RAP: 18%	MAP: 25% RAP: 20%

### Evergy (formerly KCP&L) 2019 DSM Potential Study

In 2020, Evergy (formerly KCP&L) published its 2019 DSM Potential Study, estimating DSM potential from 2023 through 2042. This study considered both energy efficiency and demand response, with energy efficiency savings reflecting net savings. The Evergy energy efficiency technical potential is estimated at 20 percent of overall load, with roughly 75 percent of the technical potential being economic under the TRC cost-effectiveness test. For demand response, the technical potential was estimated as 41 percent of summer peak load and 34 percent of winter peak load. There was no distinction between technical and economic DR potential.

<sup>4</sup> The remaining share of savings were removed from the incremental annual potential savings and costs to reflect an element of market transformation. Market transformation was assumed to be relatively modest, with only commercial LED lighting equipment measures assumed to be significantly transformed at the end of its useful life. Note, cumulative annual impacts were not impacted by the market transformation/second life adjustment.

The energy efficiency achievable potentials were presented with multiple metrics – three varieties of realistic achievable potential (RAP) reflecting three levels of realistic program performance, a higher MEEIA scenario (higher savings than RAP) and a maximum achievable potential (MAP) scenario with incentives equating to 100 percent of incremental measure costs. Overall energy efficiency MAP and RAP were estimated at 13.2 percent and 7.6 percent across the forecast period and in reference to 2019 electricity sales. Energy efficiency savings were presented as being net of gross savings. In the table below, RAP savings reflect central (reference) program performance levels. For the C&I sectors, MAP reflects the MEEIA case.

Demand response savings potential scenarios were developed along similar logics as the energy efficiency potentials. The maximum achievable demand response scenario reflected an overall 20 percent reduction in peak summer load, with the central RAP scenario reflecting a 12.5 percent load reduction. 2019 peak demand was the reference from which these potentials were developed.

TABLE A-8. EVERGY 2019 DSM POTENTIAL STUDY COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	Commercial Achievable Potential	Industrial Achievable Potential
2023-2042 Energy Efficiency	TRC	MAP: 13.2% RAP: 7.6%	MAP: 17.2% RAP: 9.7%	MAP: 8.4% RAP: 4.1%	MAP: 17.1% RAP: 12.7%
2023-2042 Demand Response	TRC	MAP: 20% RAP: 12.5%	Not available	Not available	Not available

**Louisville Gas and Electric and Kentucky Utilities Demand-Side Potential Study (2017)**

In 2017 Louisville Gas and Electric and Kentucky Utilities (LG&E and KU), as one company with two operating units, completed its DSM potential study for the 2019 through 2038 period. Using the TRC cost-effectiveness test, the study found economic energy efficiency potential equal to nine percent of LG&E and KU’s forecasted 2038 loads (technical potential was approximately 33% of baseline sales). The baseline forecast includes the presence of naturally occurring energy efficiency, but otherwise describes savings as gross savings. This study exhibits the lowest economic potential of any of the compared studies. Of note, the analysts modeled avoided energy costs that had decreased 20 percent since the prior 2013 study. Additionally, avoided capacity from energy efficiency was valued at \$0/kW, rather than the \$100/kW value used in the 2013 study. This treatment of avoided costs may explain the lower economic and achievable potential found for LG&E and KU compared to other studies, with a sensitivity analysis showing economic potential increasing to 15 percent of the 2038 forecasted load if capacity values were set at \$100/kW.

Achievable potential was developed using three scenarios, representing varying incentive levels. The scenarios presented incentive levels of 0 percent, 50 percent, and 75 percent of incremental cost coverage. Willingness-to-pay survey results were used to estimate achievable program adoption within the service territory. The outcome were achievable potentials of 4.0 percent, 5.8 percent, and 6.5 percent, increasing along with higher incentives. The study calculated achievable potential savings with only the first ten years allowing for measure retrofits and lost opportunity (natural replacement and new construction) measures. In the second half of the study period, only lost opportunity measures were considered for savings. The effect of this assumption on 2038 cumulative savings is unknown.

Table A-9 presents summary results of the achievable potential estimates, reflecting the three incentive scenarios described above.

TABLE A-9. LG&E AND KU ENERGY EFFICIENCY POTENTIAL COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	Com & Ind Achievable Potential
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2019-2038	TRC	75%: 6.5%	75%: 6.2%	75%: 6.8%
		50%: 5.8%	50%: 5.5%	50%: 6.1%
		0%: 4.0%	0%: 4.2%	0%: 3.8%

**Minnesota Energy Efficiency Potential Study (2018)**

The Minnesota Energy Efficiency Potential Study analyzed energy efficiency potential over a 10-year period, beginning in 2020 through 2029. The MN MPS utilizes a “top-down” approach for all sectors. All savings are reported as gross savings.

The MN EE Potential Study used the Societal Test for screening. As such, avoided costs included a value for avoided environmental emissions and overall benefits of energy efficiency to society. Overall economic potential for the state by 2029 was estimated to be 33%.

The definition of maximum achievable potential generally mirrored the 2023 Ameren Missouri MPS with financial incentives representing 100% of the incremental costs of each measure, along with aggressive marketing and program designs. Beyond maximum achievable, the study also provided an estimate of program achievable potential, which assumed a standard incentive that represents 50% of incremental measure costs for program planning purposes. To estimate achievable penetration, the MN MPS utilized a combination of program awareness and willingness-to-adopt factors. The awareness factors were not readily accessible, but the MN MPS does note that willingness-to-adopt factors generally ranged from 60% to 85% for market-driven measures (e.g. replace on failure or major renovation) and 50%-80% for retrofit measures. Maximum penetrations rates were generally met over a period of 5-15 years.

TABLE A-10. MINNESOTA ENERGY EFFICIENCY POTENTIAL COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	Com & Ind Achievable Potential
2020-2029	Societal	MAP: 21% Prog Pot:14%	Program Potential: 8%	Program Potential: 18%

**Pennsylvania Energy Efficiency Potential Study (2020)**

Pennsylvania completed its most recent potential study in 2020, spanning a 10-year forecast of potential savings from 2021 through 2030. As a statewide study, it reflects the potential energy efficiency savings from all investor-owned utilities in the State, each of which operate their own programs. Pennsylvania’s study is somewhat different from other studies in this comparison in that it used 2010 as a baseline year – substantially preceding the forecast period. Using the TRC and with no option for opt-out electricity customers, the study found an overall economic potential of 26.4 percent relative to the 2010 baseline year using the TRC cost-effectiveness test. The study presents savings at the gross-level, without net savings effects.

The Pennsylvania potential study presents two levels of achievable potential: Maximum Achievable Potential (MAP) and Program Achievable Potential (BAP). The MAP assumes an aggressive program scenario that includes 100 percent of measure incremental costs being paid for by the program. The PAP restricts the savings potential by using the historical program spending of the Pennsylvania utilities as well as the measure adoption rates evident in prior program years. The overall achievable potential (relative to the 2010 base year loads) is 12.8 percent under MAP and 6.3 percent under PAP.

While sector-level details are available, they only cover 2021-2025, a relatively short period meant to reflect near-term programs. Sector level savings details are not available for the 2021-2030 timeframe.

TABLE A-11. PENNSYLVANIA STATEWIDE ENERGY EFFICIENCY POTENTIAL COMPARISON METRICS

Forecast Period	Benefit-Cost Model	Overall Ach Potential	Residential Achievable Potential	Commercial Achievable Potential	Industrial Achievable Potential
2021-2030	TRC	MAP: 13.2% BAP: 8.3%	Not reported	Not reported	Not reported

## APPENDIX B: RESIDENTIAL SECTOR ENERGY EFFICIENCY DETAILS

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
1001	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	MO	442	10%	44	0.01	17	\$40	100%	84%	REFR-1	167%	25%	0.8	1.0	2.6
1002	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	MO	442	10%	44	0.01	17	\$40	100%	100%	REFR-2	130%	25%	0.8	0.8	2.8
1003	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER1	1,028	55%	565	0.07	6	\$753	100%	99%	REFR-2	130%	25%	0.2	0.2	1.5
1004	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER2	442	10%	44	0.01	11	\$0	100%	35%	REFR-2	130%	25%	1.0	1.0	1.0
1005	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER3	442	10%	44	0.01	17	\$40	100%	100%	REFR-2	130%	25%	0.8	0.8	2.8
1006	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	NC	442	10%	44	0.01	17	\$40	100%	84%	REFR-3	167%	0%	0.8	1.0	2.6
1007	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	442	10%	44	0.01	17	\$40	100%	84%	REFR-4	130%	25%	0.8	1.0	2.6
1008	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER1	1,028	55%	565	0.07	6	\$753	100%	32%	REFR-4	130%	25%	0.2	0.7	0.9
1009	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER2	442	10%	44	0.01	11	\$0	100%	35%	REFR-4	130%	25%	1.0	1.0	1.0
1010	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER3	442	10%	44	0.01	17	\$40	100%	80%	REFR-4	130%	25%	0.8	1.0	2.6
1011	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	442	10%	44	0.01	17	\$40	100%	84%	REFR-5	105%	25%	0.8	1.0	2.6
1012	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER1	1,028	55%	563	0.07	6	\$753	100%	32%	REFR-5	130%	25%	0.2	0.7	0.8
1013	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER2	442	10%	44	0.01	11	\$0	100%	35%	REFR-5	130%	25%	1.0	1.0	1.0
1014	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER3	442	10%	44	0.01	17	\$40	100%	100%	REFR-5	130%	25%	0.8	0.8	2.8
1015	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	NC	442	10%	44	0.01	17	\$40	100%	84%	REFR-6	130%	0%	0.8	1.0	2.6
1016	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	139	100%	139	0.06	5	\$43	100%	12%	DEHUM RECY	23%	0%	1.5	12.4	2.1
1017	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	139	100%	139	0.06	5	\$43	100%	12%	DEHUM RECY	23%	0%	1.5	12.4	2.1
1018	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	139	100%	139	0.06	5	\$43	100%	12%	DEHUM RECY	23%	0%	1.5	12.4	2.1
1019	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	139	100%	139	0.06	5	\$43	100%	12%	DEHUM RECY	23%	0%	1.5	12.4	2.1
1020	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	767	100%	767	0.13	8	\$140	100%	18%	FR RECY-1	50%	0%	2.3	12.6	5.1
1021	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	767	100%	767	0.13	8	\$140	100%	18%	FR RECY-2	50%	0%	2.3	12.6	5.1
1022	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	767	100%	767	0.13	8	\$140	100%	18%	FR RECY-3	5%	0%	2.3	12.6	5.1
1023	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	767	100%	767	0.13	8	\$140	100%	18%	FR RECY-4	13%	0%	2.3	12.6	5.1
1024	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	1,178	100%	1,178	0.15	8	\$140	100%	18%	REF RECY-1	167%	0%	3.1	17.4	7.7
1025	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	1,178	100%	1,178	0.15	8	\$140	100%	18%	REF RECY-2	109%	0%	3.1	17.4	7.7
1026	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	1,178	100%	1,178	0.15	8	\$140	100%	18%	REF RECY-3	130%	0%	3.1	17.4	7.7
1027	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	1,178	100%	1,178	0.15	8	\$140	100%	18%	REF RECY-4	105%	0%	3.1	17.4	7.7
1028	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	803	100%	803	0.10	8	\$140	100%	18%	REF RECY-1	167%	0%	2.1	11.9	5.3
1029	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	803	100%	803	0.10	8	\$140	100%	18%	REF RECY-2	109%	0%	2.1	11.9	5.3
1030	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	803	100%	803	0.10	8	\$140	100%	18%	REF RECY-3	130%	0%	2.1	11.9	5.3
1031	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	803	100%	803	0.10	8	\$140	100%	18%	REF RECY-4	105%	0%	2.1	11.9	5.3
1032	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-1	12%	25%	5.0	7.8	13.4
1033	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-2	12%	25%	5.0	7.8	13.4
1034	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	NC	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-3	12%	0%	5.0	7.8	13.4
1035	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-4	12%	25%	5.0	7.8	13.4
1036	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-5	12%	25%	5.0	7.8	13.4
1037	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	NC	911	63%	570	0.07	9	\$45	100%	64%	AIR PUR-6	12%	0%	5.0	7.8	13.4
1038	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	766	19%	146	0.03	14	\$75	100%	84%	DRYER-1	73%	7%	1.3	1.5	3.6
1039	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	766	19%	146	0.03	14	\$75	100%	84%	DRYER-2	73%	7%	1.3	1.5	3.6
1040	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	NC	766	19%	146	0.03	14	\$75	100%	84%	DRYER-3	73%	0%	1.3	1.5	3.6
1041	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	766	19%	146	0.03	14	\$75	100%	84%	DRYER-4	73%	7%	1.3	1.5	3.6
1042	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	766	19%	146	0.03	14	\$75	100%	84%	DRYER-5	73%	7%	1.3	1.5	3.6
1043	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	NC	766	19%	146	0.03	14	\$75	100%	84%	DRYER-6	73%	0%	1.3	1.5	3.6
1044	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	590	40%	236	0.03	14	\$141	100%	84%	CW-1	22%	74%	1.0	1.2	3.2
1045	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	590	40%	236	0.03	14	\$141	100%	84%	CW-2	30%	74%	1.0	1.2	3.2
1046	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	NC	590	40%	236	0.03	14	\$141	100%	84%	CW-3	22%	0%	1.0	1.2	3.2
1047	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	590	40%	236	0.03	14	\$141	100%	84%	CW-4	17%	74%	1.0	1.2	3.2
1048	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	590	40%	236	0.03	14	\$141	100%	84%	CW-5	34%	74%	1.0	1.2	3.2
1049	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	NC	590	40%	236	0.03	14	\$141	100%	84%	CW-6	17%	0%	1.0	1.2	3.2
1050	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-1	23%	85%	3.4	3.4	7.5
1051	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-2	23%	85%	3.4	3.4	7.5
1052	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	NC	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-3	23%	0%	3.4	3.4	7.5
1053	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-4	23%	85%	3.4	3.4	7.5
1054	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-5	23%	85%	3.4	3.4	7.5



Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
1055	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	NC	1,095	12%	134	0.03	12	\$10	100%	100%	DEHUM-6	23%	0%	3.4	3.4	7.5
1056	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	MO	307	12%	37	0.00	11	\$76	100%	84%	DISH-1	71%	74%	0.2	0.2	1.4
1057	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	MO	307	12%	37	0.00	11	\$76	100%	84%	DISH-2	71%	74%	0.2	0.2	1.4
1058	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	NC	307	12%	37	0.00	11	\$76	100%	84%	DISH-3	71%	0%	0.2	0.2	1.4
1059	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	MO	307	12%	37	0.00	11	\$76	100%	84%	DISH-4	71%	74%	0.2	0.2	1.4
1060	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	MO	307	12%	37	0.00	11	\$76	100%	84%	DISH-5	71%	74%	0.2	0.2	1.4
1061	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	NC	307	12%	37	0.00	11	\$76	100%	84%	DISH-6	71%	0%	0.2	0.2	1.4
1062	Appliances	Freezers ENERGY STAR	Efficient Products	SF	MO	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-1	50%	19%	0.7	0.9	2.2
1063	Appliances	Freezers ENERGY STAR	Efficient Products	SF	MO	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-2	50%	19%	0.7	0.9	2.2
1064	Appliances	Freezers ENERGY STAR	Efficient Products	SF	NC	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-3	50%	0%	0.7	0.9	2.2
1065	Appliances	Freezers ENERGY STAR	Efficient Products	MF	MO	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-4	5%	19%	0.7	0.9	2.2
1066	Appliances	Freezers ENERGY STAR	Efficient Products	MF	MO	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-5	13%	19%	0.7	0.9	2.2
1067	Appliances	Freezers ENERGY STAR	Efficient Products	MF	NC	268	10%	27	0.00	22	\$35	100%	71%	FREEZER-6	5%	0%	0.7	0.9	2.2
1068	Appliances	Heat Pump Dryer	Efficient Products	SF	MO	766	49%	378	0.14	14	\$900	100%	84%	DRYER-1	73%	7%	0.4	0.5	1.4
1069	Appliances	Heat Pump Dryer	Efficient Products	SF	MO	766	49%	378	0.14	14	\$900	100%	84%	DRYER-2	73%	7%	0.4	0.5	1.4
1070	Appliances	Heat Pump Dryer	Efficient Products	SF	NC	766	49%	378	0.14	14	\$900	100%	84%	DRYER-3	73%	0%	0.4	0.5	1.4
1071	Appliances	Heat Pump Dryer	Efficient Products	MF	MO	766	49%	378	0.14	14	\$900	100%	84%	DRYER-4	73%	7%	0.4	0.5	1.4
1072	Appliances	Heat Pump Dryer	Efficient Products	MF	MO	766	49%	378	0.14	14	\$900	100%	84%	DRYER-5	73%	7%	0.4	0.5	1.4
1073	Appliances	Heat Pump Dryer	Efficient Products	MF	NC	766	49%	378	0.14	14	\$900	100%	84%	DRYER-6	73%	0%	0.4	0.5	1.4
2001	Behavior	Home Energy Report	No program	SF	MO	14,064	1%	140	0.07	1	\$0	100%	35%	HER-1	100%	0%	1.0	1.0	1.0
2002	Behavior	Home Energy Report	No program	SF	MO	14,064	1%	140	0.07	1	\$0	100%	35%	HER-2	100%	0%	1.0	1.0	1.0
2003	Behavior	Home Energy Report	No program	SF	NC	14,064	1%	140	0.07	1	\$0	100%	35%	HER-3	100%	0%	1.0	1.0	1.0
2004	Behavior	Home Energy Report	No program	MF	MO	7,601	2%	140	0.07	1	\$0	100%	35%	HER-4	100%	0%	1.0	1.0	1.0
2005	Behavior	Home Energy Report	No program	MF	MO	7,601	2%	140	0.07	1	\$0	100%	35%	HER-5	100%	0%	1.0	1.0	1.0
2006	Behavior	Home Energy Report	No program	MF	NC	7,601	2%	140	0.07	1	\$0	100%	35%	HER-6	100%	0%	1.0	1.0	1.0
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	14,064	3%	451	0.05	5	\$90	100%	84%	HEM-1	100%	0%	1.1	1.4	3.8
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	14,064	3%	451	0.05	5	\$90	100%	84%	HEM-2	100%	0%	1.1	1.4	3.8
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	14,064	3%	451	0.05	5	\$90	100%	84%	HEM-3	100%	0%	1.1	1.4	3.8
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	7,601	3%	244	0.03	5	\$90	100%	84%	HEM-4	100%	0%	0.6	0.7	2.5
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	7,601	3%	244	0.03	5	\$90	100%	84%	HEM-5	100%	0%	0.6	0.7	2.5
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	7,601	3%	244	0.03	5	\$90	100%	84%	HEM-6	100%	0%	0.6	0.7	2.5
2013	Behavior	AMI Data Portal	No program	SF	MO	14,064	2%	281	0.03	1	\$0	100%	100%	AMI-1	100%	0%	39.4	39.4	112.2
2014	Behavior	AMI Data Portal	No program	SF	MO	14,064	2%	281	0.03	1	\$0	100%	100%	AMI-2	100%	0%	39.4	39.4	112.2
2015	Behavior	AMI Data Portal	No program	SF	NC	14,064	2%	281	0.03	1	\$0	100%	100%	AMI-3	100%	0%	39.4	39.4	112.2
2016	Behavior	AMI Data Portal	No program	MF	MO	7,601	2%	152	0.02	1	\$0	100%	100%	AMI-4	100%	0%	21.3	21.3	61.1
2017	Behavior	AMI Data Portal	No program	MF	MO	7,601	2%	152	0.02	1	\$0	100%	100%	AMI-5	100%	0%	21.3	21.3	61.1
2018	Behavior	AMI Data Portal	No program	MF	NC	7,601	2%	152	0.02	1	\$0	100%	100%	AMI-6	100%	0%	21.3	21.3	61.1
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	SF	Retrofit	12,872	2%	246	0.12	15	\$246	100%	100%	AIR-1	27%	57%	0.7	0.6	1.8
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	12,872	1%	143	0.07	15	\$143	100%	56%	AIR-2	44%	62%	1.5	2.1	2.3
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	MF	Retrofit	3,190	4%	134	0.06	15	\$134	100%	100%	AIR-3	60%	64%	0.4	0.3	1.5
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	3,190	3%	92	0.04	15	\$92	100%	25%	AIR-4	67%	61%	1.5	4.7	2.0
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	12,872	4%	493	0.23	15	\$246	100%	100%	AIR-5	27%	73%	1.2	1.1	2.5
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	12,872	2%	287	0.13	15	\$143	100%	56%	AIR-6	44%	67%	2.6	4.2	3.8
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	3,190	8%	267	0.12	15	\$134	100%	100%	AIR-7	60%	69%	0.7	0.6	1.8
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	3,190	6%	185	0.09	15	\$92	100%	25%	AIR-8	67%	64%	2.6	9.4	3.5
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	12,872	6%	739	0.35	15	\$246	100%	100%	AIR-9	27%	97%	1.8	1.7	3.2
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	12,872	3%	430	0.20	15	\$143	100%	56%	AIR-10	44%	92%	3.8	6.3	5.3
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	3,190	13%	401	0.19	15	\$134	100%	100%	AIR-11	60%	93%	1.0	0.9	2.2
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	3,190	9%	277	0.13	15	\$92	100%	25%	AIR-12	67%	85%	3.8	14.0	5.0

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	SF	Retrofit	6,906	3%	212	0.10	15	\$246	100%	100%	AIR-13	5%	57%	0.6	0.5	1.7
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	6,906	2%	123	0.06	15	\$143	100%	56%	AIR-14	6%	62%	1.3	1.8	2.1
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	MF	Retrofit	2,120	5%	115	0.05	15	\$134	100%	100%	AIR-15	11%	64%	0.3	0.3	1.4
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	2,120	4%	80	0.04	15	\$92	100%	25%	AIR-16	6%	61%	1.3	4.0	1.8
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	6,906	6%	424	0.20	15	\$246	100%	100%	AIR-17	5%	73%	1.1	0.9	2.3
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	6,906	4%	247	0.12	15	\$143	100%	56%	AIR-18	6%	67%	2.3	3.6	3.4
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	2,120	11%	230	0.11	15	\$134	100%	100%	AIR-19	11%	69%	0.6	0.5	1.7
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	2,120	8%	159	0.07	15	\$92	100%	25%	AIR-20	6%	64%	2.3	8.1	3.1
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	6,906	9%	637	0.30	15	\$246	100%	100%	AIR-21	5%	97%	1.6	1.4	2.9
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	6,906	5%	370	0.17	15	\$143	100%	56%	AIR-22	6%	92%	3.3	5.4	4.7
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	2,120	16%	345	0.16	15	\$134	100%	100%	AIR-23	11%	93%	0.8	0.8	2.0
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	2,120	11%	239	0.11	15	\$92	100%	25%	AIR-24	6%	85%	3.3	12.1	4.3
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	SF	Retrofit	2,450	2%	41	0.02	15	\$246	100%	100%	AIR-25	64%	57%	0.2	0.1	1.2
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	2,450	1%	24	0.01	15	\$143	100%	56%	AIR-26	48%	62%	0.5	0.3	1.1
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	MF	Retrofit	874	3%	22	0.01	15	\$134	100%	100%	AIR-27	25%	64%	0.1	0.0	1.1
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	874	2%	15	0.01	15	\$92	100%	25%	AIR-28	23%	61%	0.5	0.8	0.8
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	2,450	3%	82	0.04	15	\$246	100%	100%	AIR-29	64%	73%	0.3	0.1	1.3
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	2,450	2%	48	0.02	15	\$143	100%	56%	AIR-30	48%	67%	0.7	0.7	1.3
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	874	5%	45	0.02	15	\$134	100%	100%	AIR-31	25%	69%	0.1	0.1	1.2
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	874	4%	31	0.01	15	\$92	100%	25%	AIR-32	23%	64%	0.7	1.6	1.0
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	2,450	5%	123	0.06	15	\$246	100%	100%	AIR-33	64%	97%	0.3	0.2	1.4
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	2,450	3%	72	0.03	15	\$143	100%	56%	AIR-34	48%	92%	0.9	1.0	1.6
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	874	8%	67	0.03	15	\$134	100%	100%	AIR-35	25%	93%	0.2	0.1	1.2
3036	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	874	5%	46	0.02	15	\$92	100%	25%	AIR-36	23%	85%	0.9	2.3	1.3
3037	Building Shell	Ceiling Insulation R11-R49 electric furnace base	PAYS	SF	Retrofit	12,872	9%	1,203	0.56	25	\$2,406	100%	17%	CEIL-1	27%	70%	1.1	4.9	1.5
3038	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	6%	742	0.35	25	\$1,484	100%	86%	CEIL-2	44%	59%	1.1	0.9	2.2
3039	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	3,190	30%	955	0.45	25	\$1,910	100%	3%	CEIL-3	60%	62%	1.1	27.0	1.3
3040	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	22%	688	0.32	25	\$1,376	100%	4%	CEIL-4	67%	48%	1.1	20.7	1.4
3041	Building Shell	Ceiling Insulation R5-R30 electric furnace base	PAYS	SF	Retrofit	12,872	15%	1,941	0.90	25	\$1,317	100%	30%	CEIL-1	27%	70%	2.7	7.8	3.6
3042	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	9%	1,197	0.56	25	\$812	100%	86%	CEIL-2	44%	59%	2.7	2.8	4.2
3043	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Market Rate	MF	Retrofit	3,190	48%	1,541	0.72	25	\$1,045	100%	3%	CEIL-3	60%	62%	2.7	79.5	3.3
3044	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	35%	1,110	0.52	25	\$753	100%	4%	CEIL-4	67%	48%	2.7	61.1	3.3
3045	Building Shell	Ceiling Insulation R5-R38 electric furnace base	PAYS	SF	Retrofit	12,872	16%	2,088	0.97	25	\$1,907	100%	21%	CEIL-1	27%	70%	2.1	8.4	2.7
3046	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	10%	1,288	0.60	25	\$1,176	100%	86%	CEIL-2	44%	59%	2.1	2.1	3.4
3047	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Market Rate	MF	Retrofit	3,190	52%	1,658	0.77	25	\$1,514	100%	3%	CEIL-3	60%	62%	2.1	59.0	2.6

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3048	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	37%	1,194	0.56	25	\$1,090	100%	4%	CEIL-4	67%	48%	2.1	45.4	2.6
3049	Building Shell	Ceiling Insulation R5-R49 electric furnace base	PAYS	SF	Retrofit	12,872	17%	2,225	1.04	25	\$2,917	100%	14%	CEIL-1	27%	70%	1.5	9.0	2.0
3050	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	11%	1,372	0.64	25	\$1,799	100%	86%	CEIL-2	44%	59%	1.5	1.4	2.7
3051	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	3,190	55%	1,766	0.82	25	\$2,316	100%	3%	CEIL-3	60%	62%	1.5	41.1	1.9
3052	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	40%	1,272	0.59	25	\$1,668	100%	4%	CEIL-4	67%	48%	1.5	31.6	1.9
3053	Building Shell	Ceiling Insulation R5-R60 electric furnace base	PAYS	SF	Retrofit	12,872	18%	2,304	1.07	25	\$3,882	100%	10%	CEIL-1	27%	70%	1.3	9.3	1.6
3054	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	11%	1,421	0.66	25	\$2,394	100%	86%	CEIL-2	44%	59%	1.3	1.1	2.4
3055	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Market Rate	MF	Retrofit	3,190	57%	1,829	0.85	25	\$3,081	100%	3%	CEIL-3	60%	62%	1.3	32.0	1.5
3056	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	41%	1,317	0.61	25	\$2,220	100%	4%	CEIL-4	67%	48%	1.3	24.6	1.5
3057	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	SF	Retrofit	6,906	11%	749	0.35	25	\$2,406	100%	17%	CEIL-5	5%	70%	0.8	3.0	1.1
3058	Building Shell	Ceiling Insulation R11-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	7%	462	0.22	25	\$1,484	100%	86%	CEIL-6	6%	59%	0.8	0.6	1.8
3059	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	MF	Retrofit	2,120	28%	595	0.28	25	\$1,910	100%	21%	CEIL-7	11%	62%	0.8	2.4	1.1
3060	Building Shell	Ceiling Insulation R11-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	20%	428	0.20	25	\$1,376	100%	4%	CEIL-8	6%	48%	0.8	12.9	1.0
3061	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	SF	Retrofit	6,906	18%	1,214	0.57	25	\$1,317	100%	30%	CEIL-5	5%	70%	1.8	4.9	2.5
3062	Building Shell	Ceiling Insulation R5-R30 heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	11%	749	0.35	25	\$812	100%	86%	CEIL-6	6%	59%	1.8	1.7	3.0
3063	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	MF	Retrofit	2,120	45%	964	0.45	25	\$1,045	100%	38%	CEIL-7	11%	62%	1.8	3.9	2.6
3064	Building Shell	Ceiling Insulation R5-R30 heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	33%	694	0.32	25	\$753	100%	4%	CEIL-8	6%	48%	1.8	38.3	2.2
3065	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	SF	Retrofit	6,906	19%	1,305	0.61	25	\$1,907	100%	21%	CEIL-5	5%	70%	1.4	5.3	1.9
3066	Building Shell	Ceiling Insulation R5-R38 heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	12%	805	0.38	25	\$1,176	100%	86%	CEIL-6	6%	59%	1.4	1.3	2.6
3067	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	MF	Retrofit	2,120	49%	1,036	0.48	25	\$1,514	100%	26%	CEIL-7	11%	62%	1.4	4.2	2.0
3068	Building Shell	Ceiling Insulation R5-R38 heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	35%	746	0.35	25	\$1,090	100%	4%	CEIL-8	6%	48%	1.4	28.4	1.7
3069	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	SF	Retrofit	6,906	20%	1,385	0.65	25	\$2,917	100%	14%	CEIL-5	5%	70%	1.1	5.6	1.4
3070	Building Shell	Ceiling Insulation R5-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	12%	854	0.40	25	\$1,799	100%	86%	CEIL-6	6%	59%	1.1	0.9	2.1
3071	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	MF	Retrofit	2,120	52%	1,099	0.51	25	\$2,316	100%	17%	CEIL-7	11%	62%	1.1	4.4	1.4
3072	Building Shell	Ceiling Insulation R5-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	37%	792	0.37	25	\$1,668	100%	4%	CEIL-8	6%	48%	1.1	19.7	1.3
3073	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	6,906	21%	1,441	0.67	25	\$3,882	100%	10%	CEIL-5	5%	70%	0.9	5.8	1.2
3074	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	13%	889	0.41	25	\$2,394	100%	86%	CEIL-6	6%	59%	0.9	0.7	1.9
3075	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	MF	Retrofit	2,120	54%	1,144	0.53	25	\$3,081	100%	13%	CEIL-7	11%	62%	0.9	4.6	1.2
3076	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	39%	824	0.38	25	\$2,220	100%	4%	CEIL-8	6%	48%	0.9	15.4	1.1
3077	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	PAYS	SF	Retrofit	2,450	6%	159	0.07	25	\$2,406	100%	17%	CEIL-9	64%	70%	0.4	0.6	0.6
3078	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	4%	98	0.05	25	\$1,484	100%	86%	CEIL-10	48%	59%	0.4	0.1	1.3
3079	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	874	55%	478	0.22	25	\$1,910	100%	3%	CEIL-11	25%	62%	0.7	13.5	0.8
3080	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	10%	91	0.04	25	\$1,376	100%	4%	CEIL-12	23%	48%	0.4	2.7	0.5
3081	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	PAYS	SF	Retrofit	2,450	11%	261	0.12	25	\$1,317	100%	30%	CEIL-9	64%	70%	0.6	1.1	1.0
3082	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	7%	161	0.08	25	\$812	100%	86%	CEIL-10	48%	59%	0.6	0.4	1.6

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3083	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	874	89%	775	0.36	25	\$1,045	100%	3%	CEIL-11	25%	62%	1.5	40.0	1.8
3084	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	17%	149	0.07	25	\$753	100%	4%	CEIL-12	23%	48%	0.6	8.2	0.7
3085	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	PAYS	SF	Retrofit	2,450	12%	284	0.13	25	\$1,907	100%	21%	CEIL-9	64%	70%	0.5	1.1	0.8
3086	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	7%	175	0.08	25	\$1,176	100%	86%	CEIL-10	48%	59%	0.5	0.3	1.5
3087	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	874	96%	838	0.39	25	\$1,514	100%	3%	CEIL-11	25%	62%	1.2	29.8	1.5
3088	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	19%	162	0.08	25	\$1,090	100%	4%	CEIL-12	23%	48%	0.5	6.2	0.6
3089	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	PAYS	SF	Retrofit	2,450	12%	295	0.14	25	\$2,917	100%	14%	CEIL-9	64%	70%	0.5	1.2	0.6
3090	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	7%	182	0.08	25	\$1,799	100%	86%	CEIL-10	48%	59%	0.5	0.2	1.4
3091	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	874	102%	892	0.42	25	\$2,316	100%	3%	CEIL-11	25%	62%	0.9	20.8	1.1
3092	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	19%	169	0.08	25	\$1,668	100%	4%	CEIL-12	23%	48%	0.5	4.2	0.5
3093	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	PAYS	SF	Retrofit	2,450	13%	306	0.14	25	\$3,882	100%	10%	CEIL-9	64%	70%	0.4	1.2	0.6
3094	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	8%	189	0.09	25	\$2,394	100%	86%	CEIL-10	48%	59%	0.4	0.1	1.3
3095	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	874	105%	919	0.43	25	\$3,081	100%	3%	CEIL-11	25%	62%	0.8	16.1	0.9
3096	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	20%	175	0.08	25	\$2,220	100%	4%	CEIL-12	23%	48%	0.4	3.3	0.5
3097	Building Shell	Duct Insulation - electric furnace base	PAYS	SF	Retrofit	12,872	9%	1,146	0.54	20	\$169	100%	100%	DI-1	27%	70%	10.0	9.7	13.4
3098	Building Shell	Duct Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	9%	1,146	0.54	20	\$169	100%	100%	DI-2	44%	59%	3.1	3.0	4.8
3099	Building Shell	Duct Insulation - electric furnace base	PAYS	MF	Retrofit	3,190	9%	284	0.13	20	\$84	100%	100%	DI-3	60%	62%	5.1	4.8	7.3
3100	Building Shell	Duct Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	9%	284	0.13	20	\$84	100%	100%	DI-4	67%	48%	3.8	3.6	5.7
3101	Building Shell	Duct Insulation - heat pump base	PAYS	SF	Retrofit	6,906	9%	615	0.29	20	\$169	100%	100%	DI-5	5%	70%	5.5	5.2	7.8
3102	Building Shell	Duct Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	9%	615	0.29	20	\$169	100%	100%	DI-6	6%	59%	1.7	1.6	3.1
3103	Building Shell	Duct Insulation - heat pump base	PAYS	MF	Retrofit	2,120	9%	189	0.09	20	\$84	100%	100%	DI-7	11%	62%	3.5	3.2	5.3
3104	Building Shell	Duct Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	9%	189	0.09	20	\$84	100%	89%	DI-8	6%	48%	3.5	3.6	5.2
3105	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	6%	140	0.07	20	\$169	100%	100%	DI-9	64%	70%	1.5	1.2	2.8
3106	Building Shell	Duct Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	6%	140	0.07	20	\$169	100%	100%	DI-10	48%	59%	0.5	0.4	1.5
3107	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	874	6%	50	0.02	20	\$84	100%	100%	DI-11	25%	62%	1.1	0.8	2.4
3108	Building Shell	Duct Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	6%	50	0.02	20	\$84	100%	24%	DI-12	23%	48%	1.1	3.6	1.6
3109	Building Shell	Duct Sealing - electric furnace base	PAYS	SF	Retrofit	12,872	2%	197	0.09	20	\$322	100%	100%	DS-1	27%	70%	0.9	0.7	2.1
3110	Building Shell	Duct Sealing - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	2%	197	0.09	20	\$322	100%	100%	DS-2	44%	59%	0.9	0.7	2.1
3111	Building Shell	Duct Sealing - electric furnace base	PAYS	MF	Retrofit	3,190	3%	82	0.04	20	\$161	100%	100%	DS-3	60%	62%	0.8	0.6	2.0
3112	Building Shell	Duct Sealing - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	3%	82	0.04	20	\$161	100%	100%	DS-4	67%	48%	0.8	0.6	2.0
3113	Building Shell	Duct Sealing - heat pump base	PAYS	SF	Retrofit	6,906	2%	106	0.05	20	\$322	100%	100%	DS-5	5%	70%	0.6	0.4	1.7
3114	Building Shell	Duct Sealing - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	2%	106	0.05	20	\$322	100%	100%	DS-6	6%	59%	0.6	0.4	1.7
3115	Building Shell	Duct Sealing - heat pump base	PAYS	MF	Retrofit	2,120	3%	55	0.03	20	\$161	100%	100%	DS-7	11%	62%	0.6	0.4	1.7
3116	Building Shell	Duct Sealing - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	3%	55	0.03	20	\$161	100%	100%	DS-8	6%	48%	0.6	0.4	1.7
3117	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	2%	40	0.02	20	\$322	100%	100%	DS-9	64%	70%	0.4	0.1	1.4
3118	Building Shell	Duct Sealing - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	2%	40	0.02	20	\$322	100%	100%	DS-10	48%	59%	0.4	0.1	1.4
3119	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	MF	Retrofit	874	2%	17	0.01	20	\$161	100%	100%	DS-11	25%	62%	0.4	0.1	1.4
3120	Building Shell	Duct Sealing - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	2%	17	0.01	20	\$161	100%	100%	DS-12	23%	48%	0.4	0.1	1.4
3121	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	SF	Retrofit	12,872	22%	2,781	1.30	25	\$772	100%	100%	FLOOR-1	2%	50%	6.1	5.8	8.6
3122	Building Shell	Floor Insulation (R4 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	13%	1,715	0.80	25	\$476	100%	100%	FLOOR-2	5%	47%	3.0	2.8	4.7
3123	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	MF	Retrofit	3,190	22%	689	0.32	25	\$772	100%	100%	FLOOR-3	7%	60%	1.7	1.4	3.1

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3124	Building Shell	Floor Insulation (R4 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	13%	425	0.20	25	\$476	100%	100%	FLOOR-4	2%	60%	1.7	1.4	3.1
3125	Building Shell	Floor Insulation (R4 base) - heat pump base	PAYS	SF	Retrofit	6,906	23%	1,612	0.75	25	\$772	100%	100%	FLOOR-5	0%	50%	3.7	3.4	5.6
3126	Building Shell	Floor Insulation (R4 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	14%	994	0.46	25	\$476	100%	100%	FLOOR-6	1%	47%	1.8	1.6	3.2
3127	Building Shell	Floor Insulation (R4 base) - heat pump base	PAYS	MF	Retrofit	2,120	23%	495	0.23	25	\$772	100%	100%	FLOOR-7	1%	60%	1.3	1.0	2.6
3128	Building Shell	Floor Insulation (R4 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	14%	305	0.14	25	\$476	100%	100%	FLOOR-8	0%	60%	1.3	1.0	2.6
3129	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	11%	261	0.12	25	\$772	100%	100%	FLOOR-9	4%	50%	0.8	0.5	2.0
3130	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	7%	161	0.07	25	\$476	100%	100%	FLOOR-10	5%	47%	0.4	0.3	1.5
3131	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	PAYS	MF	Retrofit	874	11%	93	0.04	25	\$772	100%	100%	FLOOR-11	3%	60%	0.5	0.2	1.5
3132	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	7%	57	0.03	25	\$476	100%	100%	FLOOR-12	1%	60%	0.5	0.2	1.5
3133	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	SF	Retrofit	12,872	2%	250	0.12	25	\$772	100%	100%	FLOOR-1	2%	50%	0.8	0.5	2.0
3134	Building Shell	Floor Insulation (R13 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	1%	154	0.07	25	\$476	100%	100%	FLOOR-2	5%	47%	0.4	0.3	1.5
3135	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	MF	Retrofit	3,190	2%	62	0.03	25	\$772	100%	100%	FLOOR-3	7%	60%	0.4	0.1	1.5
3136	Building Shell	Floor Insulation (R13 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	1%	38	0.02	25	\$476	100%	100%	FLOOR-4	2%	60%	0.4	0.1	1.5
3137	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	SF	Retrofit	6,906	2%	148	0.07	25	\$772	100%	100%	FLOOR-5	0%	50%	0.6	0.3	1.7
3138	Building Shell	Floor Insulation (R13 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	1%	91	0.04	25	\$476	100%	100%	FLOOR-6	1%	47%	0.3	0.2	1.3
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	2,120	2%	45	0.02	25	\$772	100%	100%	FLOOR-7	1%	60%	0.4	0.1	1.4
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	1%	28	0.01	25	\$476	100%	100%	FLOOR-8	0%	60%	0.4	0.1	1.4
3141	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	1%	23	0.01	25	\$772	100%	100%	FLOOR-9	4%	50%	0.3	0.0	1.4
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	1%	14	0.01	25	\$476	100%	100%	FLOOR-10	5%	47%	0.2	0.0	1.2
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	MF	Retrofit	874	1%	8	0.00	25	\$772	100%	100%	FLOOR-11	3%	60%	0.3	0.0	1.3
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	1%	5	0.00	25	\$476	100%	100%	FLOOR-12	1%	60%	0.3	0.0	1.3
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	6,829	0%	1	0.00	5	\$36	100%	100%	WINDOW INS	100%	16%	0.3	0.0	1.3
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	6,829	0%	1	0.00	5	\$36	100%	100%	WINDOW INS	100%	16%	0.3	0.0	1.3
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	1,630	0%	1	0.00	5	\$36	100%	100%	WINDOW INS	100%	16%	0.3	0.0	1.3
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	1,630	0%	1	0.00	5	\$36	100%	100%	WINDOW INS	100%	16%	0.3	0.0	1.3
3149	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	SF	Retrofit	12,872	8%	1,024	0.97	20	\$696	100%	100%	BWI-1	27%	65%	3.7	3.4	3.9
3150	Building Shell	Basement Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	5%	594	0.56	20	\$696	100%	100%	BWI-2	44%	46%	2.3	2.0	2.8
3151	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	MF	Retrofit	3,190	11%	351	0.33	20	\$183	100%	100%	BWI-3	60%	61%	4.7	4.4	4.7
3152	Building Shell	Basement Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	8%	241	0.23	20	\$183	100%	100%	BWI-4	67%	61%	3.4	3.1	3.7
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	6,906	5%	311	0.29	20	\$696	100%	100%	BWI-5	5%	65%	1.3	1.0	2.1
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	3%	180	0.17	20	\$696	100%	100%	BWI-6	6%	46%	0.9	0.6	1.8
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	2,120	4%	93	0.09	20	\$183	100%	100%	BWI-7	11%	61%	1.5	1.2	2.2
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	3%	64	0.06	20	\$183	100%	100%	BWI-8	6%	61%	1.1	0.8	1.9
3157	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	-2%	-49	-0.05	20	\$696	100%	100%	BWI-9	64%	65%	0.3	0.0	1.2
3158	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	-1%	-31	-0.03	20	\$696	100%	100%	BWI-10	48%	46%	0.3	0.0	1.2
3159	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	874	-5%	-41	-0.04	20	\$183	100%	100%	BWI-11	25%	61%	0.2	0.0	0.9

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3160	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	-3%	-26	-0.02	20	\$183	100%	100%	BWI-12	23%	61%	0.2	0.0	1.0
3161	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	SF	Retrofit	12,872	8%	1,063	1.01	20	\$341	100%	100%	FSI-1	2%	65%	7.5	7.2	6.9
3162	Building Shell	Foundation Sidewall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	5%	617	0.58	20	\$341	100%	100%	FSI-2	5%	46%	4.5	4.2	4.5
3163	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	MF	Retrofit	3,190	11%	362	0.34	20	\$91	100%	100%	FSI-3	7%	61%	9.5	9.2	8.4
3164	Building Shell	Foundation Sidewall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	8%	249	0.24	20	\$91	100%	100%	FSI-4	2%	61%	6.6	6.3	6.2
3165	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	SF	Retrofit	6,906	5%	314	0.30	20	\$341	100%	100%	FSI-5	0%	65%	2.4	2.1	2.9
3166	Building Shell	Foundation Sidewall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	3%	182	0.17	25	\$341	100%	100%	FSI-6	1%	46%	1.7	1.4	2.4
3167	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	MF	Retrofit	2,120	5%	100	0.09	25	\$91	100%	100%	FSI-7	1%	61%	3.2	2.9	3.5
3168	Building Shell	Foundation Sidewall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	3%	69	0.07	25	\$91	100%	100%	FSI-8	0%	61%	2.3	2.0	2.8
3169	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	-2%	-39	-0.04	25	\$341	100%	100%	FSI-9	4%	65%	0.2	0.0	1.1
3170	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	-1%	-25	-0.02	25	\$341	100%	100%	FSI-10	5%	46%	0.3	0.0	1.1
3171	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	874	-3%	-24	-0.02	25	\$91	100%	100%	FSI-11	3%	61%	0.2	0.0	0.8
3172	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	-2%	-15	-0.01	25	\$91	100%	100%	FSI-12	1%	61%	0.2	0.0	1.0
3173	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	SF	Retrofit	12,872	16%	2,060	0.66	15	\$2,769	100%	7%	CELLULAR-1	27%	16%	0.7	9.8	1.2
3174	Building Shell	Insulated Cellular Shades - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	16%	2,060	0.66	15	\$2,769	100%	7%	CELLULAR-2	44%	16%	0.7	9.8	1.2
3175	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	MF	Retrofit	3,190	16%	510	0.42	15	\$1,190	100%	17%	CELLULAR-3	60%	16%	0.7	4.4	0.8
3176	Building Shell	Insulated Cellular Shades - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	16%	510	0.42	15	\$1,190	100%	17%	CELLULAR-4	67%	16%	0.7	4.4	0.8
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	6,906	16%	1,105	0.45	15	\$2,769	100%	7%	CELLULAR-5	5%	16%	0.4	6.0	0.7
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	16%	1,105	0.45	15	\$2,769	100%	7%	CELLULAR-6	6%	16%	0.4	6.0	0.7
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	2,120	16%	339	0.29	15	\$1,190	100%	17%	CELLULAR-7	11%	16%	0.5	3.0	0.6
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	16%	339	0.29	15	\$1,190	100%	17%	CELLULAR-8	6%	16%	0.5	3.0	0.6
3181	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	16%	392	0.61	15	\$2,769	100%	7%	CELLULAR-9	64%	16%	0.4	5.6	0.3
3182	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	16%	392	0.61	15	\$2,769	100%	7%	CELLULAR-10	48%	16%	0.4	5.6	0.3
3183	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	MF	Retrofit	874	16%	140	0.39	15	\$1,190	100%	17%	CELLULAR-1	25%	16%	0.6	3.3	0.3
3184	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	16%	140	0.39	15	\$1,190	100%	17%	CELLULAR-1	23%	16%	0.6	3.3	0.3
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	12,872	6%	738	0.34	20	\$1,161	100%	26%	WINDOW-1	27%	10%	1.2	3.5	1.7
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	5%	590	0.28	20	\$929	100%	32%	WINDOW-2	44%	10%	1.2	2.8	1.8
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	3,190	14%	443	0.21	20	\$696	100%	43%	WINDOW-3	60%	10%	1.2	2.1	1.9
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	9%	295	0.14	20	\$464	100%	65%	WINDOW-4	67%	10%	1.2	1.4	2.1
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	6,906	7%	459	0.21	20	\$1,161	100%	26%	WINDOW-5	5%	10%	0.9	2.2	1.3
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	5%	367	0.17	20	\$929	100%	32%	WINDOW-6	6%	10%	0.9	1.7	1.3
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	2,120	13%	275	0.13	20	\$696	100%	43%	WINDOW-7	11%	10%	0.9	1.3	1.4
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	9%	184	0.09	20	\$464	100%	65%	WINDOW-8	6%	10%	0.9	0.9	1.7
3193	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	6%	144	0.07	20	\$1,161	100%	26%	WINDOW-9	64%	10%	0.5	0.7	0.8
3194	Building Shell	Storm Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	5%	115	0.05	20	\$929	100%	32%	WINDOW-10	48%	10%	0.5	0.5	0.8
3195	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	MF	Retrofit	874	10%	87	0.04	20	\$696	100%	43%	WINDOW-1	25%	10%	0.5	0.4	1.0
3196	Building Shell	Storm Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	7%	58	0.03	20	\$464	100%	65%	WINDOW-1	23%	10%	0.5	0.3	1.2
3197	Building Shell	Wall Insulation - electric furnace base	PAYS	SF	Retrofit	12,872	9%	1,189	0.00	25	\$2,254	100%	100%	WALL-1	27%	93%	0.6	0.3	2.4
3198	Building Shell	Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	5%	690	0.00	25	\$2,254	100%	100%	WALL-2	44%	65%	0.5	0.2	1.9

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
3199	Building Shell	Wall Insulation - electric furnace base	PAYS	MF	Retrofit	3,190	16%	525	0.00	25	\$969	100%	100%	WALL-3	60%	93%	0.6	0.3	2.4
3200	Building Shell	Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	11%	361	0.00	25	\$969	100%	100%	WALL-4	67%	65%	0.5	0.2	2.1
3201	Building Shell	Wall Insulation - heat pump base	PAYS	SF	Retrofit	6,906	8%	556	0.00	25	\$2,254	100%	100%	WALL-5	5%	93%	0.5	0.2	1.8
3202	Building Shell	Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	5%	323	0.00	25	\$2,254	100%	100%	WALL-6	6%	65%	0.4	0.1	1.6
3203	Building Shell	Wall Insulation - heat pump base	PAYS	MF	Retrofit	2,120	12%	262	0.00	25	\$969	100%	100%	WALL-7	11%	93%	0.5	0.2	1.9
3204	Building Shell	Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	8%	180	0.00	25	\$969	100%	100%	WALL-8	6%	65%	0.4	0.1	1.7
3205	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	3%	73	0.00	25	\$2,254	100%	100%	WALL-9	64%	93%	0.3	0.0	1.4
3206	Building Shell	Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	2%	46	0.00	25	\$2,254	100%	100%	WALL-10	48%	65%	0.3	0.0	1.3
3207	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	874	8%	69	0.00	25	\$969	100%	100%	WALL-11	25%	93%	0.3	0.0	1.4
3208	Building Shell	Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	5%	44	0.00	25	\$969	100%	100%	WALL-12	23%	65%	0.3	0.0	1.4
3209	Building Shell	Thin Triple Windows - electric furnace base	PAYS	SF	Retrofit	12,872	7%	903	0.27	40	\$6,350	100%	5%	WINDOW-1	27%	16%	0.3	4.7	0.5
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	6%	722	0.22	40	\$5,080	100%	6%	WINDOW-2	44%	16%	0.3	3.8	0.5
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	3,190	17%	542	0.16	40	\$3,810	100%	8%	WINDOW-3	60%	16%	0.4	2.8	0.6
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	11%	361	0.11	40	\$2,540	100%	12%	WINDOW-4	67%	16%	0.5	1.9	0.7
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	6,906	14%	935	0.28	40	\$6,350	100%	5%	WINDOW-5	5%	16%	0.3	4.9	0.5
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	11%	748	0.22	40	\$5,080	100%	6%	WINDOW-6	6%	16%	0.3	3.9	0.5
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	2,120	26%	561	0.17	40	\$3,810	100%	8%	WINDOW-7	11%	16%	0.4	2.9	0.6
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	18%	374	0.11	40	\$2,540	100%	12%	WINDOW-8	6%	16%	0.5	2.0	0.7
3217	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	8%	184	0.06	40	\$6,350	100%	5%	WINDOW-9	64%	16%	0.1	1.0	0.2
3218	Building Shell	Thin Triple Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	6%	147	0.04	40	\$5,080	100%	6%	WINDOW-10	48%	16%	0.2	0.8	0.3
3219	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	MF	Retrofit	874	13%	110	0.03	40	\$3,810	100%	8%	WINDOW-11	25%	16%	0.2	0.6	0.3
3220	Building Shell	Thin Triple Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	8%	74	0.02	40	\$2,540	100%	12%	WINDOW-12	23%	16%	0.3	0.4	0.4
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	12,872	10%	1,287	0.23	25	\$2,470	100%	100%	WALL-1	27%	93%	0.8	0.5	2.4
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	12,872	10%	1,287	0.23	25	\$2,470	100%	100%	WALL-2	44%	65%	0.8	0.5	2.4
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	3,190	10%	319	0.23	25	\$1,581	100%	100%	WALL-3	60%	93%	0.7	0.4	1.7
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	3,190	10%	319	0.23	25	\$1,581	100%	100%	WALL-4	67%	65%	0.7	0.4	1.7
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	6,906	10%	691	0.23	25	\$2,470	100%	100%	WALL-5	5%	93%	0.7	0.4	1.9
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	6,906	10%	691	0.23	25	\$2,470	100%	100%	WALL-6	6%	65%	0.7	0.4	1.9
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	2,120	10%	212	0.23	25	\$1,581	100%	100%	WALL-7	11%	93%	0.7	0.4	1.6
3228	Building Shell	Advanced Walls - heat pump base	Multifamily Income Eligible	MF	Retrofit	2,120	10%	212	0.23	25	\$1,581	100%	100%	WALL-8	6%	65%	0.7	0.4	1.6
3229	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	SF	Retrofit	2,450	10%	245	0.23	25	\$2,470	100%	100%	WALL-9	64%	93%	0.6	0.3	1.5
3230	Building Shell	Advanced Walls - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	2,450	10%	245	0.23	25	\$2,470	100%	100%	WALL-10	48%	65%	0.6	0.3	1.5
3231	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	MF	Retrofit	874	10%	87	0.23	25	\$1,581	100%	100%	WALL-11	25%	93%	0.6	0.3	1.4
3232	Building Shell	Advanced Walls - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	874	10%	87	0.23	25	\$1,581	100%	100%	WALL-12	23%	65%	0.6	0.3	1.4
3233	Building Shell	Cool Roof	PAYS	SF	Retrofit	2,115	2%	41	0.13	20	\$509	100%	100%	ROOF-1	100%	5%	0.5	0.5	1.1
3234	Building Shell	Cool Roof	Single Family Income Eligible	SF	Retrofit	2,115	1%	26	0.13	20	\$509	100%	100%	ROOF-2	100%	5%	0.5	0.5	1.1
3235	Building Shell	Cool Roof	PAYS	MF	Retrofit	793	5%	41	0.13	20	\$509	100%	100%	ROOF-3	100%	5%	0.5	0.5	1.1
3236	Building Shell	Cool Roof	Multifamily Income Eligible	MF	Retrofit	793	3%	26	0.13	20	\$509	100%	100%	ROOF-4	100%	5%	0.5	0.5	1.1
3237	Building Shell	Shade Trees	No program	SF	Retrofit	2,115	5%	106	0.14	30	\$85	100%	100%	SHADE-1	100%	50%	4.6	4.6	3.8
3238	Building Shell	Shade Trees	No program	SF	Retrofit	2,115	5%	106	0.14	30	\$85	100%	100%	SHADE-2	100%	50%	4.6	4.6	3.8
3239	Building Shell	Shade Trees	No program	MF	Retrofit	793	5%	40	0.09	30	\$85	100%	100%	SHADE-3	100%	50%	2.8	2.8	2.0
3240	Building Shell	Shade Trees	No program	MF	Retrofit	793	5%	40	0.09	30	\$85	100%	100%	SHADE-4	100%	50%	2.8	2.8	2.0
4001	Custom	MFMR Custom	Multifamily Market Rate	MF	Retrofit	1,814	25%	454	0.35	19	\$249	100%	100%	Custom-1	100%	0%	3.4	3.4	4.1
4002	Custom	MFLI Custom	Multifamily Income Eligible	MF	Retrofit	1,786	25%	447	0.08	8	\$408	100%	100%	Custom-2	100%	0%	0.4	0.4	2.0
5001	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	432	36%	154	0.02	10	\$10	100%	100%	APS-1	100%	23%	2.7	2.7	7.7
5002	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	432	36%	154	0.02	10	\$10	100%	100%	APS-2	100%	23%	2.7	2.7	7.7
5003	Electronics	Advanced Tier 2 Power Strips	Single Family Income Eligible	SF	Retrofit	432	36%	154	0.02	10	\$30	100%	100%	APS-2	100%	23%	1.0	1.0	3.4

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
5004	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	NC	432	36%	154	0.02	10	\$10	100%	100%	APS-3	100%	0%	2.7	2.7	7.7
5005	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	432	36%	154	0.02	10	\$10	100%	100%	APS-4	100%	23%	2.7	2.7	7.7
5006	Electronics	Advanced Tier 2 Power Strips	Multifamily Market Rate	MF	Retrofit	432	36%	154	0.02	10	\$10	100%	100%	APS-4	100%	23%	2.7	2.7	7.7
5007	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	432	36%	154	0.02	10	\$10	100%	100%	APS-5	100%	23%	2.7	2.7	7.7
5008	Electronics	Advanced Tier 2 Power Strips	Multifamily Income Eligible	MF	Retrofit	432	36%	154	0.02	10	\$30	100%	100%	APS-5	100%	23%	1.1	1.1	3.7
5009	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	NC	432	36%	154	0.02	10	\$10	100%	100%	APS-6	100%	0%	2.7	2.7	7.7
5010	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-1	100%	23%	1.2	1.6	3.8
5011	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-1	100%	23%	1.2	1.6	3.8
5012	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-1	100%	23%	1.2	1.6	3.8
5013	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-2	100%	23%	1.2	1.6	3.8
5014	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-2	100%	23%	1.2	1.6	3.8
5015	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-2	100%	23%	1.2	1.6	3.8
5016	Electronics	Advanced Tier 2 Power Strips	Single Family Income Eligible	SF	Retrofit	432	13%	56	0.01	10	\$30	100%	50%	APS-2	100%	23%	0.8	1.6	2.5
5017	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	NC	432	13%	56	0.01	10	\$20	100%	75%	APS-3	100%	0%	1.2	1.6	3.8
5018	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-4	100%	23%	1.2	1.6	3.8
5019	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-4	100%	23%	1.2	1.6	3.8
5020	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-4	100%	23%	1.2	1.6	3.8
5021	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-5	100%	23%	1.2	1.6	3.8
5022	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-5	100%	23%	1.2	1.6	3.8
5023	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	432	13%	56	0.01	10	\$20	100%	75%	APS-5	100%	23%	1.2	1.6	3.8
5024	Electronics	Advanced Tier 1 Power Strips	Multifamily Income Eligible	MF	Retrofit	432	13%	56	0.01	10	\$30	100%	50%	APS-5	100%	23%	0.8	1.6	2.5
5025	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	NC	432	13%	56	0.01	10	\$20	100%	75%	APS-6	100%	0%	1.2	1.6	3.8
5026	Electronics	ENERGY STAR TV	No program	SF	MO	83	20%	17	0.00	6	\$0	100%	35%	TV-1	236%	74%	1.0	1.0	1.0
5027	Electronics	ENERGY STAR TV	No program	SF	MO	83	20%	17	0.00	6	\$0	100%	35%	TV-2	236%	74%	1.0	1.0	1.0
5028	Electronics	ENERGY STAR TV	No program	SF	NC	83	20%	17	0.00	6	\$0	100%	35%	TV-3	236%	0%	1.0	1.0	1.0
5029	Electronics	ENERGY STAR TV	No program	MF	MO	83	20%	17	0.00	6	\$0	100%	35%	TV-4	236%	74%	1.0	1.0	1.0
5030	Electronics	ENERGY STAR TV	No program	MF	MO	83	20%	17	0.00	6	\$0	100%	35%	TV-5	236%	74%	1.0	1.0	1.0
5031	Electronics	ENERGY STAR TV	No program	MF	NC	83	20%	17	0.00	6	\$0	100%	35%	TV-6	236%	0%	1.0	1.0	1.0
5032	Electronics	Smart Plug	No program	SF	Retrofit	466	6%	28	0.00	7	\$50	100%	100%	PLUG-1	100%	0%	0.2	0.2	1.4
5033	Electronics	Smart Plug	No program	SF	Retrofit	466	6%	28	0.00	7	\$50	100%	100%	PLUG-2	100%	0%	0.2	0.2	1.4
5034	Electronics	Smart Plug	No program	SF	NC	466	6%	28	0.00	7	\$50	100%	100%	PLUG-3	100%	0%	0.2	0.2	1.4
5035	Electronics	Smart Plug	No program	MF	Retrofit	466	6%	28	0.00	7	\$50	100%	100%	PLUG-4	100%	0%	0.2	0.2	1.4
5036	Electronics	Smart Plug	No program	MF	Retrofit	466	6%	28	0.00	7	\$50	100%	100%	PLUG-5	100%	0%	0.2	0.2	1.4
5037	Electronics	Smart Plug	No program	MF	NC	466	6%	28	0.00	7	\$50	100%	100%	PLUG-6	100%	0%	0.2	0.2	1.4
6001	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	11,562	34%	3,962	1.99	6	\$669	100%	75%	HP-2	5%	52%	6.3	4.4	7.9
6002	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	8,005	2%	150	0.16	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6003	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	8,005	2%	150	0.16	18	\$0	100%	100%	HP-2	5%	52%	0.7	0.7	1.5
6004	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	11,562	34%	3,962	1.99	6	\$669	100%	75%	HP-4	6%	25%	6.3	4.4	7.9
6005	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	8,005	2%	150	0.16	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6006	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	8,005	2%	150	0.16	18	\$0	100%	100%	HP-4	6%	25%	0.7	0.7	1.5
6007	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	7,733	40%	3,086	1.46	6	\$669	100%	75%	HP-8	11%	52%	5.4	3.3	7.0
6008	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	4,051	8%	323	0.11	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6009	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	4,051	8%	323	0.11	18	\$0	100%	100%	HP-8	11%	52%	0.7	0.7	2.1
6010	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	7,733	40%	3,086	1.46	6	\$669	100%	75%	HP-10	6%	25%	5.4	3.3	7.0
6011	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	4,051	8%	323	0.11	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6012	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	4,051	8%	323	0.11	18	\$0	100%	100%	HP-10	6%	25%	0.7	0.7	2.1
6013	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	11,562	37%	4,251	2.08	6	\$813	100%	62%	HP-2	5%	52%	5.3	4.6	6.7
6014	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	8,005	6%	443	0.27	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6015	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	8,005	6%	443	0.27	18	\$135	100%	100%	HP-2	5%	52%	1.3	1.3	2.5
6016	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	11,562	37%	4,251	2.08	6	\$813	100%	62%	HP-4	6%	25%	5.3	4.6	6.7
6017	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	8,005	6%	443	0.27	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6018	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	8,005	6%	443	0.27	18	\$135	100%	100%	HP-4	6%	25%	1.3	1.3	2.5
6019	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	7,733	36%	2,817	1.29	6	\$833	100%	60%	HP-8	11%	52%	4.1	2.9	5.4
6020	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	4,051	9%	381	0.18	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6021	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	4,051	9%	381	0.18	18	\$135	100%	100%	HP-8	11%	52%	1.0	1.0	2.3
6022	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	7,733	36%	2,817	1.29	6	\$833	100%	60%	HP-10	6%	25%	4.1	2.9	5.4
6023	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	4,051	9%	381	0.18	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6024	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	4,051	9%	381	0.18	18	\$135	100%	100%	HP-10	6%	25%	1.0	1.0	2.3



Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6025	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	11,562	40%	4,659	2.10	6	\$1,008	100%	69%	HP-2	5%	52%	4.4	3.4	5.9
6026	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	8,005	11%	847	0.41	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6027	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	8,005	11%	847	0.41	18	\$286	100%	100%	HP-2	5%	52%	1.6	1.6	3.0
6028	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	11,562	40%	4,659	2.10	6	\$1,008	100%	69%	HP-4	6%	25%	4.4	3.4	5.9
6029	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	8,005	11%	847	0.41	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6030	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	8,005	11%	847	0.41	18	\$286	100%	100%	HP-4	6%	25%	1.6	1.6	3.0
6031	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	7,733	41%	3,168	1.30	6	\$814	100%	86%	HP-8	11%	52%	4.3	2.2	6.0
6032	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	4,051	15%	604	0.27	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6033	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	4,051	15%	604	0.27	18	\$286	100%	100%	HP-8	11%	52%	1.1	1.1	2.4
6034	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	7,733	41%	3,168	1.30	6	\$814	100%	86%	HP-10	6%	25%	4.3	2.2	6.0
6035	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	4,051	15%	604	0.27	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6036	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	4,051	15%	604	0.27	18	\$286	100%	100%	HP-10	6%	25%	1.1	1.1	2.4
6037	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	11,562	45%	5,242	2.24	6	\$1,120	100%	71%	HP-2	5%	52%	4.1	3.2	5.8
6038	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER2	8,005	17%	1,329	0.50	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6039	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER3	8,005	17%	1,329	0.50	18	\$380	100%	100%	HP-2	5%	52%	1.8	1.8	3.8
6040	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	11,562	45%	5,242	2.24	6	\$1,120	100%	71%	HP-4	6%	25%	4.1	3.2	5.8
6041	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER2	8,005	17%	1,329	0.50	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6042	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER3	8,005	17%	1,329	0.50	18	\$380	100%	100%	HP-4	6%	25%	1.8	1.8	3.8
6043	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER1	7,733	40%	3,118	1.52	6	\$749	100%	100%	HP-8	11%	52%	4.6	2.1	6.2
6044	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER2	4,051	16%	667	0.25	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6045	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER3	4,051	16%	667	0.25	18	\$380	100%	100%	HP-8	11%	52%	0.9	0.9	2.4
6046	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER1	7,733	40%	3,118	1.52	6	\$749	100%	100%	HP-10	6%	25%	4.6	2.1	6.2
6047	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER2	4,051	16%	667	0.25	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6048	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER3	4,051	16%	667	0.25	18	\$380	100%	100%	HP-10	6%	25%	0.9	0.9	2.4
6049	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	11,562	58%	6,672	3.11	6	\$1,404	100%	64%	HP-2	5%	52%	3.9	3.9	5.4
6050	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	8,005	20%	1,613	0.77	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6051	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	8,005	20%	1,613	0.77	18	\$475	100%	100%	HP-2	5%	52%	2.3	2.3	4.0
6052	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	11,562	58%	6,672	3.11	6	\$1,404	100%	64%	HP-4	6%	25%	3.9	3.9	5.4
6053	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	8,005	20%	1,613	0.77	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6054	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	8,005	20%	1,613	0.77	18	\$475	100%	100%	HP-4	6%	25%	2.3	2.3	4.0
6055	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	7,733	43%	3,307	1.43	6	\$1,003	100%	90%	HP-8	11%	52%	3.6	1.8	5.2
6056	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	4,051	18%	743	0.40	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6057	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	4,051	18%	743	0.40	18	\$475	100%	100%	HP-8	11%	52%	1.1	1.1	2.4
6058	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	7,733	43%	3,307	1.43	6	\$1,003	100%	90%	HP-10	6%	25%	3.6	1.8	5.2
6059	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	4,051	18%	743	0.40	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6060	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	4,051	18%	743	0.40	18	\$475	100%	100%	HP-10	6%	25%	1.1	1.1	2.4
6061	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	11,562	45%	5,257	2.46	6	\$1,255	100%	96%	HP-2	5%	52%	3.8	2.3	5.5
6062	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER2	8,005	18%	1,435	0.65	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6063	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER3	8,005	18%	1,435	0.65	18	\$571	100%	100%	HP-2	5%	52%	1.5	1.5	3.0
6064	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	11,562	45%	5,257	2.46	6	\$1,255	100%	96%	HP-4	6%	25%	3.8	2.3	5.5
6065	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER2	8,005	18%	1,435	0.65	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6066	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER3	8,005	18%	1,435	0.65	18	\$571	100%	100%	HP-4	6%	25%	1.5	1.5	3.0
6067	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER1	7,733	44%	3,366	1.48	6	\$1,098	100%	100%	HP-8	11%	52%	3.1	1.4	4.6
6068	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER2	4,051	20%	802	0.45	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6069	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER3	4,051	20%	802	0.45	18	\$571	100%	100%	HP-8	11%	52%	1.0	1.0	2.1
6070	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER1	7,733	44%	3,366	1.48	6	\$1,098	100%	100%	HP-10	6%	25%	3.1	1.4	4.6
6071	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER2	4,051	20%	802	0.45	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6072	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER3	4,051	20%	802	0.45	18	\$571	100%	100%	HP-10	6%	25%	1.0	1.0	2.1
6073	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER1	11,562	56%	6,494	2.80	6	\$1,492	100%	74%	HP-2	5%	52%	3.5	2.9	5.1
6074	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER2	8,005	26%	2,106	0.83	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6075	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	8,005	26%	2,106	0.83	18	\$668	100%	100%	HP-2	5%	52%	2.2	2.2	4.2
6076	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER1	11,562	56%	6,494	2.80	6	\$1,492	100%	74%	HP-4	6%	25%	3.5	2.9	5.1
6077	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER2	8,005	26%	2,106	0.83	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6078	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	8,005	26%	2,106	0.83	18	\$668	100%	100%	HP-4	6%	25%	2.2	2.2	4.2
6079	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	7,733	44%	3,419	1.53	6	\$1,195	100%	92%	HP-8	11%	52%	3.1	1.6	4.6
6080	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	4,051	21%	855	0.50	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6081	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	4,051	21%	855	0.50	18	\$668	100%	100%	HP-8	11%	52%	1.2	1.2	2.3
6082	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	7,733	44%	3,419	1.53	6	\$1,195	100%	92%	HP-10	6%	25%	3.1	1.6	4.6

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6083	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	4,051	21%	855	0.50	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6084	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	4,051	21%	855	0.50	18	\$668	100%	100%	HP-10	6%	25%	1.2	1.2	2.3
6085	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	8,005	2%	151	0.17	18	\$0	100%	100%	HP-2	5%	52%	4.7	0.7	5.5
6086	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	8,005	2%	151	0.17	18	\$0	100%	100%	HP-4	6%	25%	4.7	0.7	5.5
6087	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	NC	8,005	2%	151	0.17	18	\$0	100%	100%	HP-6	5%	0%	4.7	0.7	5.5
6088	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	4,051	-1%	-21	0.08	18	\$0	100%	100%	HP-8	11%	52%	4.2	0.2	4.9
6089	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	4,051	-1%	-21	0.08	18	\$0	100%	100%	HP-10	6%	25%	4.2	0.2	4.9
6090	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	NC	4,051	-1%	-21	0.08	18	\$0	100%	100%	HP-12	11%	0%	4.2	0.2	4.9
6091	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	8,005	7%	535	0.28	18	\$135	100%	100%	HP-2	5%	52%	5.5	1.5	6.8
6092	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	8,005	7%	535	0.28	18	\$135	100%	100%	HP-4	6%	25%	5.5	1.5	6.8
6093	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	NC	8,005	7%	535	0.28	18	\$135	100%	100%	HP-6	5%	0%	5.5	1.5	6.8
6094	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	4,051	5%	202	0.13	18	\$135	100%	100%	HP-8	11%	52%	4.6	0.6	5.7
6095	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	4,051	5%	202	0.13	18	\$135	100%	100%	HP-10	6%	25%	4.6	0.6	5.7
6096	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	NC	4,051	5%	202	0.13	18	\$135	100%	100%	HP-12	11%	0%	4.6	0.6	5.7
6097	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	8,005	10%	825	0.41	18	\$286	100%	100%	HP-2	5%	52%	4.4	1.5	5.8
6098	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	8,005	10%	825	0.41	18	\$286	100%	100%	HP-4	6%	25%	4.4	1.5	5.8
6099	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	NC	8,005	10%	825	0.41	18	\$286	100%	100%	HP-6	5%	0%	4.4	1.5	5.8
6100	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	4,051	18%	728	0.27	18	\$286	100%	100%	HP-8	11%	52%	4.0	1.1	5.6
6101	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	4,051	18%	728	0.27	18	\$286	100%	100%	HP-10	6%	25%	4.0	1.1	5.6
6102	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	NC	4,051	18%	728	0.27	18	\$286	100%	100%	HP-12	11%	0%	4.0	1.1	5.6
6103	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	8,005	17%	1,369	0.49	18	\$380	100%	100%	HP-2	5%	52%	4.4	1.9	6.4
6104	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	8,005	17%	1,369	0.49	18	\$380	100%	100%	HP-4	6%	25%	4.4	1.9	6.4
6105	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	NC	8,005	17%	1,369	0.49	18	\$380	100%	100%	HP-6	5%	0%	4.4	1.9	6.4
6106	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	4,051	20%	802	0.34	18	\$380	100%	100%	HP-8	11%	52%	3.7	1.2	5.2
6107	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	4,051	20%	802	0.34	18	\$380	100%	100%	HP-10	6%	25%	3.7	1.2	5.2
6108	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	NC	4,051	20%	802	0.34	18	\$380	100%	100%	HP-12	11%	0%	3.7	1.2	5.2
6109	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	8,005	19%	1,493	0.66	18	\$475	100%	100%	HP-2	5%	52%	4.3	2.0	6.0
6110	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	8,005	19%	1,493	0.66	18	\$475	100%	100%	HP-4	6%	25%	4.3	2.0	6.0
6111	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	NC	8,005	19%	1,493	0.66	18	\$475	100%	100%	HP-6	5%	0%	4.3	2.0	6.0
6112	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	4,051	21%	867	0.40	18	\$475	100%	100%	HP-8	11%	52%	3.4	1.2	4.8
6113	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	4,051	21%	867	0.40	18	\$475	100%	100%	HP-10	6%	25%	3.4	1.2	4.8
6114	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	NC	4,051	21%	867	0.40	18	\$475	100%	100%	HP-12	11%	0%	3.4	1.2	4.8
6115	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	8,005	20%	1,625	0.68	18	\$571	100%	100%	HP-2	5%	52%	3.9	1.9	5.7
6116	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	8,005	20%	1,625	0.68	18	\$571	100%	100%	HP-4	6%	25%	3.9	1.9	5.7
6117	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	NC	8,005	20%	1,625	0.68	18	\$571	100%	100%	HP-6	5%	0%	3.9	1.9	5.7
6118	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	4,051	23%	926	0.45	18	\$571	100%	100%	HP-8	11%	52%	3.2	1.2	4.5
6119	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	4,051	23%	926	0.45	18	\$571	100%	100%	HP-10	6%	25%	3.2	1.2	4.5
6120	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	NC	4,051	23%	926	0.45	18	\$571	100%	100%	HP-12	11%	0%	3.2	1.2	4.5
6121	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	8,005	29%	2,341	0.88	18	\$668	100%	100%	HP-2	5%	52%	4.2	2.4	6.4
6122	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	8,005	29%	2,341	0.88	18	\$668	100%	100%	HP-4	6%	25%	4.2	2.4	6.4
6123	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	NC	8,005	29%	2,341	0.88	18	\$668	100%	100%	HP-6	5%	0%	4.2	2.4	6.4
6124	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	4,051	24%	979	0.50	18	\$668	100%	100%	HP-8	11%	52%	3.0	1.2	4.3
6125	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	4,051	24%	979	0.50	18	\$668	100%	100%	HP-10	6%	25%	3.0	1.2	4.3
6126	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	NC	4,051	24%	979	0.50	18	\$668	100%	100%	HP-12	11%	0%	3.0	1.2	4.3
6127	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	59%	10,855	1.99	6	\$669	100%	100%	HP-1	27%	0%	7.8	4.9	14.7
6128	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	52%	8,914	0.16	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6129	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	52%	8,914	0.16	18	\$0	100%	100%	HP-1	27%	0%	6.2	6.2	22.2
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	59%	10,855	1.99	6	\$669	100%	100%	HP-3	27%	0%	7.8	4.9	14.7
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	52%	8,914	0.16	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	52%	8,914	0.16	18	\$0	100%	100%	HP-3	27%	0%	6.2	6.2	22.2
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	18,455	59%	10,855	1.99	6	\$669	100%	100%	HP-3	27%	0%	0.8	0.5	2.3
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	17,078	52%	8,914	0.16	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	17,078	52%	8,914	0.16	18	\$0	100%	100%	HP-3	27%	0%	14.5	14.5	50.5
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	60%	7,987	1.46	6	\$732	100%	96%	HP-7	60%	0%	6.2	3.6	11.4
6137	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	76%	6,555	0.11	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6138	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	76%	6,555	0.11	18	\$0	100%	100%	HP-7	60%	0%	4.5	4.5	16.6
6139	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	13,204	60%	7,987	1.46	6	\$732	100%	100%	HP-7	60%	0%	5.8	3.2	10.7
6140	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	8,682	76%	6,555	0.11	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6141	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	8,682	76%	6,555	0.11	18	\$0	100%	100%	HP-7	60%	0%	10.6	10.6	37.4
6142	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	60%	7,987	1.46	6	\$732	100%	96%	HP-9	67%	0%	6.2	3.6	11.4
6143	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	76%	6,555	0.11	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6144	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	76%	6,555	0.11	18	\$0	100%	100%	HP-9	67%	0%	4.5	4.5	16.6
6145	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	13,204	60%	7,987	1.46	6	\$732	100%	100%	HP-9	67%	0%	1.4	0.8	3.3
6146	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	8,682	76%	6,555	0.11	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6147	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	8,682	76%	6,555	0.11	18	\$0	100%	100%	HP-9	67%	0%	10.6	10.6	37.4
6148	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	61%	11,236	2.08	6	\$813	100%	86%	HP-1	27%	0%	6.8	5.1	13.0
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	55%	9,324	0.27	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	55%	9,324	0.27	18	\$135	100%	100%	HP-1	27%	0%	6.8	6.8	23.2
6151	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	18,455	61%	11,236	2.08	6	\$813	100%	37%	HP-1	27%	0%	6.8	11.9	12.5
6152	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	17,078	55%	9,324	0.27	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6153	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	17,078	55%	9,324	0.27	18	\$135	100%	100%	HP-1	27%	0%	15.8	15.8	52.8
6154	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	61%	11,236	2.08	6	\$813	100%	86%	HP-3	27%	0%	6.8	5.1	13.0
6155	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	55%	9,324	0.27	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6156	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	55%	9,324	0.27	18	\$135	100%	100%	HP-3	27%	0%	6.8	6.8	23.2
6157	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	18,455	61%	11,236	2.08	6	\$813	100%	37%	HP-3	27%	0%	6.8	11.9	12.5
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	17,078	55%	9,324	0.27	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	17,078	55%	9,324	0.27	18	\$135	100%	100%	HP-3	27%	0%	15.8	15.8	52.8
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	18,455	61%	11,236	2.08	6	\$813	100%	100%	HP-3	27%	0%	0.8	0.5	2.4
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	17,078	55%	9,324	0.27	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	17,078	55%	9,324	0.27	18	\$135	100%	100%	HP-3	27%	0%	15.8	15.8	52.8
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	100%	HP-7	60%	0%	4.7	2.5	9.0
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-7	60%	0%	10.7	10.7	36.2
6166	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	84%	HP-7	60%	0%	5.2	3.3	9.6
6167	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6168	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-7	60%	0%	4.6	4.6	16.1
6169	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	36%	HP-7	60%	0%	5.2	7.7	9.1

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6170	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6171	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-7	60%	0%	10.7	10.7	36.2
6172	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	84%	HP-9	67%	0%	5.2	3.3	9.6
6173	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6174	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-9	67%	0%	4.6	4.6	16.1
6175	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	36%	HP-9	67%	0%	5.2	7.7	9.1
6176	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6177	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-9	67%	0%	10.7	10.7	36.2
6178	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	13,204	57%	7,497	1.29	6	\$833	100%	100%	HP-9	67%	0%	1.3	0.7	3.2
6179	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	8,682	73%	6,331	0.18	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6180	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	8,682	73%	6,331	0.18	18	\$135	100%	100%	HP-9	67%	0%	10.7	10.7	36.2
6181	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	66%	12,102	2.10	6	\$1,008	100%	89%	HP-1	27%	0%	5.7	4.1	11.3
6182	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	60%	10,311	0.41	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6183	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	60%	10,311	0.41	18	\$286	100%	100%	HP-1	27%	0%	6.0	6.0	20.1
6184	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	66%	12,102	2.10	6	\$1,008	100%	89%	HP-3	27%	0%	5.7	4.1	11.3
6185	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	60%	10,311	0.41	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6186	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	60%	10,311	0.41	18	\$286	100%	100%	HP-3	27%	0%	6.0	6.0	20.1
6187	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	13,204	61%	8,046	1.22	6	\$814	100%	100%	HP-7	60%	0%	3.9	2.1	7.9
6188	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	8,682	81%	7,025	0.25	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6189	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	8,682	81%	7,025	0.25	18	\$286	100%	100%	HP-7	60%	0%	12.2	12.2	40.0
6190	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	61%	8,046	1.22	6	\$814	100%	100%	HP-7	60%	0%	4.8	2.6	9.5
6191	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	81%	7,025	0.25	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6192	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	81%	7,025	0.25	18	\$286	100%	100%	HP-7	60%	0%	4.1	4.1	14.0
6193	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	61%	8,046	1.22	6	\$814	100%	100%	HP-9	67%	0%	4.8	2.6	9.5
6194	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	81%	7,025	0.25	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6195	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	81%	7,025	0.25	18	\$286	100%	100%	HP-9	67%	0%	4.1	4.1	14.0
6196	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	70%	12,870	2.24	6	\$1,120	100%	89%	HP-1	27%	0%	5.3	4.0	10.7
6197	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	65%	11,027	0.50	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6198	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	65%	11,027	0.50	18	\$380	100%	100%	HP-1	27%	0%	5.9	5.9	19.4
6199	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	70%	12,870	2.24	6	\$1,120	100%	89%	HP-3	27%	0%	5.3	4.0	10.7
6200	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	65%	11,027	0.50	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6201	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	65%	11,027	0.50	18	\$380	100%	100%	HP-3	27%	0%	5.9	5.9	19.4
6202	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	13,204	36%	4,695	1.24	6	\$749	100%	100%	HP-7	60%	0%	3.4	1.6	5.8
6203	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	8,682	41%	3,544	0.15	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6204	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	8,682	41%	3,544	0.15	18	\$380	100%	79%	HP-7	60%	0%	5.0	6.3	16.3

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6205	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	36%	4,695	1.24	6	\$749	100%	100%	HP-7	60%	0%	3.8	1.8	6.3
6206	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	41%	3,544	0.15	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6207	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	41%	3,544	0.15	18	\$380	100%	100%	HP-7	60%	0%	1.9	1.9	6.9
6208	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	36%	4,695	1.24	6	\$749	100%	100%	HP-9	67%	0%	3.8	1.8	6.3
6209	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	41%	3,544	0.15	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6210	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	41%	3,544	0.15	18	\$380	100%	100%	HP-9	67%	0%	1.9	1.9	6.9
6211	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	88%	16,242	3.11	6	\$1,404	100%	78%	HP-1	27%	0%	5.1	4.7	10.3
6212	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	81%	13,779	0.77	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6213	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	81%	13,779	0.77	18	\$475	100%	100%	HP-1	27%	0%	7.0	7.0	21.9
6214	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	88%	16,242	3.11	6	\$1,404	100%	78%	HP-3	27%	0%	5.1	4.7	10.3
6215	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	81%	13,779	0.77	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6216	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	81%	13,779	0.77	18	\$475	100%	100%	HP-3	27%	0%	7.0	7.0	21.9
6217	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	62%	8,176	1.34	6	\$971	100%	100%	HP-7	60%	0%	4.1	2.2	8.0
6218	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	82%	7,155	0.37	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6219	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	82%	7,155	0.37	18	\$475	100%	100%	HP-7	60%	0%	3.6	3.6	11.8
6220	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	13,204	62%	8,176	1.34	6	\$971	100%	100%	HP-9	67%	0%	0.9	0.5	2.6
6221	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	8,682	82%	7,155	0.37	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6222	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	8,682	82%	7,155	0.37	18	\$475	100%	63%	HP-9	67%	0%	8.3	13.1	25.7
6223	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	67%	12,313	2.46	6	\$1,255	100%	96%	HP-1	27%	0%	4.8	3.4	9.4
6224	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	61%	10,405	0.65	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6225	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	61%	10,405	0.65	18	\$571	100%	100%	HP-1	27%	0%	4.9	4.9	15.5
6226	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	67%	12,313	2.46	6	\$1,255	100%	96%	HP-3	27%	0%	4.8	3.4	9.4
6227	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	61%	10,405	0.65	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6228	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	61%	10,405	0.65	18	\$571	100%	100%	HP-3	27%	0%	4.9	4.9	15.5
6229	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	62%	8,232	1.39	6	\$1,066	100%	100%	HP-7	60%	0%	3.8	2.1	7.5
6230	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	83%	7,210	0.43	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6231	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	83%	7,210	0.43	18	\$571	100%	100%	HP-7	60%	0%	3.4	3.4	11.0
6232	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	13,204	62%	8,232	1.39	6	\$1,066	100%	100%	HP-9	67%	0%	0.9	0.5	2.6
6233	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	8,682	83%	7,210	0.43	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6234	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	8,682	83%	7,210	0.43	18	\$571	100%	53%	HP-9	67%	0%	7.1	13.5	21.6
6235	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	81%	14,996	2.80	6	\$1,492	100%	87%	HP-1	27%	0%	4.5	3.7	9.3
6236	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	76%	12,915	0.83	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6237	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	76%	12,915	0.83	18	\$668	100%	100%	HP-1	27%	0%	5.7	5.7	17.6
6238	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	18,455	81%	14,996	2.80	6	\$1,492	100%	87%	HP-3	27%	0%	4.5	3.7	9.3
6239	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	17,078	76%	12,915	0.83	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6240	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	17,078	76%	12,915	0.83	18	\$668	100%	100%	HP-3	27%	0%	5.7	5.7	17.6
6241	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13,204	63%	8,282	1.44	6	\$1,163	100%	100%	HP-7	60%	0%	3.5	2.0	7.0
6242	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	8,682	84%	7,260	0.47	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6243	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	8,682	84%	7,260	0.47	18	\$668	100%	100%	HP-7	60%	0%	3.2	3.2	10.3
6244	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	13,204	63%	8,282	1.44	6	\$1,163	100%	100%	HP-9	67%	0%	0.9	0.5	2.6
6245	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	8,682	84%	7,260	0.47	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6246	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	8,682	84%	7,260	0.47	18	\$668	100%	45%	HP-9	67%	0%	6.2	13.8	18.6
6247	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	54%	9,224	0.17	18	\$0	100%	100%	HP-1	27%	0%	9.3	6.4	25.8
6248	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	54%	9,224	0.17	18	\$0	100%	100%	HP-3	27%	0%	9.3	6.4	25.8
6249	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	54%	9,224	0.17	18	\$0	100%	100%	HP-5	27%	0%	9.3	6.4	25.8
6250	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	52%	4,555	0.08	18	\$0	100%	100%	HP-7	60%	0%	6.0	3.2	14.7
6251	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	8,682	52%	4,555	0.08	18	\$0	100%	100%	HP-9	67%	0%	14.1	7.4	33.0
6252	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	52%	4,555	0.08	18	\$0	100%	100%	HP-11	60%	0%	6.0	3.2	14.7
6253	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	59%	10,112	0.28	18	\$135	100%	100%	HP-1	27%	0%	10.2	7.3	27.9
6254	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	59%	10,112	0.28	18	\$135	100%	100%	HP-3	27%	0%	10.2	7.3	27.9
6255	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	59%	10,112	0.28	18	\$135	100%	100%	HP-5	27%	0%	10.2	7.3	27.9
6256	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	8,682	56%	4,883	0.13	18	\$135	100%	100%	HP-7	60%	0%	14.9	8.2	34.8
6257	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	56%	4,883	0.13	18	\$135	100%	100%	HP-7	60%	0%	6.4	3.5	15.5
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	56%	4,883	0.13	18	\$135	100%	100%	HP-9	67%	0%	6.4	3.5	15.5
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	56%	4,883	0.13	18	\$135	100%	100%	HP-11	60%	0%	6.4	3.5	15.5
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	61%	10,338	0.41	18	\$286	100%	100%	HP-1	27%	0%	8.3	6.0	22.4
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	61%	10,338	0.41	18	\$286	100%	100%	HP-3	27%	0%	8.3	6.0	22.4
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	61%	10,338	0.41	18	\$286	100%	100%	HP-5	27%	0%	8.3	6.0	22.4
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	8,682	74%	6,452	0.23	18	\$286	100%	100%	HP-7	60%	0%	17.8	11.2	43.5
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	8,682	74%	6,452	0.23	18	\$286	100%	100%	HP-9	67%	0%	17.8	11.2	43.5
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	74%	6,452	0.23	18	\$286	100%	100%	HP-11	60%	0%	5.9	3.7	15.2
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	67%	11,440	0.49	18	\$380	100%	100%	HP-1	27%	0%	8.1	6.1	22.1
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	67%	11,440	0.49	18	\$380	100%	100%	HP-3	27%	0%	8.1	6.1	22.1
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	67%	11,440	0.49	18	\$380	100%	100%	HP-5	27%	0%	8.1	6.1	22.1
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	8,682	80%	6,904	0.31	18	\$380	100%	79%	HP-7	60%	0%	15.0	12.3	36.3
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	8,682	80%	6,904	0.31	18	\$380	100%	79%	HP-9	67%	0%	15.0	12.3	36.3
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	80%	6,904	0.31	18	\$380	100%	100%	HP-11	60%	0%	5.7	3.7	14.5
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	65%	11,141	0.66	18	\$475	100%	100%	HP-1	27%	0%	7.5	5.7	19.7
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	65%	11,141	0.66	18	\$475	100%	100%	HP-3	27%	0%	7.5	5.7	19.7
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	65%	11,141	0.66	18	\$475	100%	100%	HP-5	27%	0%	7.5	5.7	19.7

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	76%	6,595	0.36	18	\$475	100%	100%	HP-7	60%	0%	5.1	3.3	12.8
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	76%	6,595	0.36	18	\$475	100%	100%	HP-9	67%	0%	5.1	3.3	12.8
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	76%	6,595	0.36	18	\$475	100%	100%	HP-11	60%	0%	5.1	3.3	12.8
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	64%	10,935	0.68	18	\$571	100%	100%	HP-1	27%	0%	6.8	5.2	17.9
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	64%	10,935	0.68	18	\$571	100%	100%	HP-3	27%	0%	6.8	5.2	17.9
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	64%	10,935	0.68	18	\$571	100%	100%	HP-5	27%	0%	6.8	5.2	17.9
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	87%	7,565	0.44	18	\$571	100%	100%	HP-7	60%	0%	5.2	3.5	13.2
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	8,682	87%	7,565	0.44	18	\$571	100%	53%	HP-9	67%	0%	10.9	14.1	26.1
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	87%	7,565	0.44	18	\$571	100%	100%	HP-11	60%	0%	5.2	3.5	13.2
6284	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	79%	13,530	0.88	18	\$668	100%	100%	HP-1	27%	0%	7.5	5.9	19.9
6285	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	17,078	79%	13,530	0.88	18	\$668	100%	100%	HP-3	27%	0%	7.5	5.9	19.9
6286	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	NC	17,078	79%	13,530	0.88	18	\$668	100%	100%	HP-5	27%	0%	7.5	5.9	19.9
6287	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	77%	6,665	0.43	18	\$668	100%	100%	HP-7	60%	0%	4.5	2.9	11.1
6288	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	8,682	77%	6,665	0.43	18	\$668	100%	100%	HP-9	67%	0%	4.5	2.9	11.1
6289	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	NC	8,682	77%	6,665	0.43	18	\$668	100%	100%	HP-11	60%	0%	4.5	2.9	11.1
6290	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	8,005	14%	1,085	0.41	18	\$2,937	100%	57%	HP-2	5%	52%	1.1	0.7	1.9
6291	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	8,005	14%	1,085	0.41	18	\$2,937	100%	57%	HP-4	6%	25%	1.1	0.7	1.9
6292	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	NC	8,005	14%	1,085	0.41	18	\$2,937	100%	57%	HP-6	5%	0%	1.1	0.7	1.9
6293	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	4,051	27%	1,085	0.41	18	\$2,937	100%	31%	HP-8	11%	52%	1.1	1.3	1.6
6294	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	4,051	27%	1,085	0.41	18	\$2,937	100%	31%	HP-10	6%	25%	1.1	1.3	1.6
6295	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	NC	4,051	27%	1,085	0.41	18	\$2,937	100%	31%	HP-12	11%	0%	1.1	1.3	1.6
6296	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	8,005	20%	1,630	0.61	18	\$3,177	100%	57%	HP-2	5%	52%	1.2	1.0	2.1
6297	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	8,005	20%	1,630	0.61	18	\$3,177	100%	57%	HP-4	6%	25%	1.2	1.0	2.1
6298	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	NC	8,005	20%	1,630	0.61	18	\$3,177	100%	57%	HP-6	5%	0%	1.2	1.0	2.1
6299	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	4,051	40%	1,630	0.61	18	\$3,177	100%	31%	HP-8	11%	52%	1.2	1.8	1.8
6300	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	4,051	40%	1,630	0.61	18	\$3,177	100%	31%	HP-10	6%	25%	1.2	1.8	1.8
6301	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	NC	4,051	40%	1,630	0.61	18	\$3,177	100%	31%	HP-12	11%	0%	1.2	1.8	1.8
6302	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	8,005	28%	2,255	0.83	18	\$3,627	100%	57%	HP-2	5%	52%	1.2	1.2	2.2
6303	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	8,005	28%	2,255	0.83	18	\$3,627	100%	57%	HP-4	6%	25%	1.2	1.2	2.2
6304	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	NC	8,005	28%	2,255	0.83	18	\$3,627	100%	57%	HP-6	5%	0%	1.2	1.2	2.2
6305	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	4,051	56%	2,255	0.83	18	\$3,627	100%	30%	HP-8	11%	52%	1.2	2.2	1.9
6306	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	4,051	56%	2,255	0.83	18	\$3,627	100%	30%	HP-10	6%	25%	1.2	2.2	1.9
6307	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	NC	4,051	56%	2,255	0.83	18	\$3,627	100%	30%	HP-12	11%	0%	1.2	2.2	1.9
6308	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	3,731	60%	2,222	2.11	6	\$576	100%	52%	CAC-1	114%	52%	4.6	6.8	4.3
6309	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	2,278	7%	165	0.16	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6310	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-1	114%	52%	1.2	1.2	1.9
6311	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	3,731	60%	2,222	2.11	6	\$576	100%	52%	CAC-2	79%	25%	4.6	6.8	4.3
6312	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	2,278	7%	165	0.16	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6313	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-2	79%	25%	1.2	1.2	1.9
6314	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER1	3,731	60%	2,222	2.11	6	\$576	100%	100%	CAC-2	79%	25%	0.5	0.4	1.4
6315	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER2	2,278	7%	165	0.16	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6316	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER3	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-2	79%	25%	1.2	1.2	1.9
6317	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	2,504	53%	1,323	1.25	6	\$576	100%	52%	CAC-4	100%	52%	3.2	4.1	3.2
6318	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	1,127	5%	55	0.05	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6319	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-4	100%	52%	0.4	0.4	1.3
6320	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER1	2,504	53%	1,323	1.25	6	\$576	100%	52%	CAC-4	100%	52%	3.2	4.1	3.2
6321	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER2	1,127	5%	55	0.05	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6322	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER3	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-4	100%	52%	0.4	0.4	1.3

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6323	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	2,504	53%	1,323	1.25	6	\$576	100%	52%	CAC-5	63%	25%	3.2	4.1	3.2
6324	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	1,127	5%	55	0.05	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6325	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-5	63%	25%	0.4	0.4	1.3
6326	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER1	2,504	53%	1,323	1.25	6	\$576	100%	100%	CAC-5	63%	25%	2.0	1.3	2.7
6327	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER2	1,127	5%	55	0.05	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6328	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER3	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-5	63%	25%	0.4	0.4	1.3
6329	HVAC	Central AC 16 SEER ER	HVAC	SF	ER1	3,731	58%	2,164	2.05	6	\$655	100%	46%	CAC-1	114%	52%	4.0	6.7	3.7
6330	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	2,278	12%	284	0.27	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6331	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-1	114%	52%	2.1	2.1	2.6
6332	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	3,731	58%	2,164	2.05	6	\$655	100%	46%	CAC-1	114%	52%	4.0	6.7	3.7
6333	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	2,278	12%	284	0.27	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6334	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-1	114%	52%	2.1	2.1	2.6
6335	HVAC	Central AC 16 SEER ER	HVAC	SF	ER1	3,731	58%	2,164	2.05	6	\$655	100%	46%	CAC-2	79%	25%	4.0	6.7	3.7
6336	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	2,278	12%	284	0.27	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6337	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-2	79%	25%	2.1	2.1	2.6
6338	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	3,731	58%	2,164	2.05	6	\$655	100%	46%	CAC-2	79%	25%	4.0	6.7	3.7
6339	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	2,278	12%	284	0.27	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6340	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-2	79%	25%	2.1	2.1	2.6
6341	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER1	3,731	58%	2,164	2.05	6	\$655	100%	100%	CAC-2	79%	25%	0.5	0.4	1.4
6342	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER2	2,278	12%	284	0.27	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6343	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER3	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-2	79%	25%	2.1	2.1	2.6
6344	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	55%	CAC-4	100%	52%	3.7	4.8	3.7
6345	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6346	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-4	100%	52%	1.9	1.9	2.4
6347	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	55%	CAC-4	100%	52%	3.7	4.8	3.7
6348	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6349	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-4	100%	52%	1.9	1.9	2.4
6350	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	55%	CAC-4	100%	52%	3.7	4.8	3.7
6351	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6352	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-4	100%	52%	1.9	1.9	2.4
6353	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	55%	CAC-5	63%	25%	3.7	4.8	3.7
6354	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6355	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-5	63%	25%	1.9	1.9	2.4
6356	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	55%	CAC-5	63%	25%	3.7	4.8	3.7
6357	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6358	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-5	63%	25%	1.9	1.9	2.4
6359	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER1	2,504	63%	1,566	1.48	6	\$546	100%	100%	CAC-5	63%	25%	2.2	1.6	2.9
6360	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER2	1,127	23%	258	0.24	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6361	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER3	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-5	63%	25%	1.9	1.9	2.4
6362	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	3,731	61%	2,273	2.15	6	\$1,059	100%	47%	CAC-1	114%	52%	2.6	4.2	2.5
6363	HVAC	Central AC 17 SEER ER	HVAC	SF	ER2	2,278	17%	392	0.37	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6364	HVAC	Central AC 17 SEER ER	HVAC	SF	ER3	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-1	114%	52%	1.4	1.7	1.9
6365	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	3,731	61%	2,273	2.15	6	\$1,059	100%	47%	CAC-2	79%	25%	2.6	4.2	2.5
6366	HVAC	Central AC 17 SEER ER	HVAC	SF	ER2	2,278	17%	392	0.37	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6367	HVAC	Central AC 17 SEER ER	HVAC	SF	ER3	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-2	79%	25%	1.4	1.7	1.9
6368	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER1	3,731	61%	2,273	2.15	6	\$1,059	100%	100%	CAC-2	79%	25%	0.5	0.4	1.4
6369	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER2	2,278	17%	392	0.37	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6370	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER3	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-2	79%	25%	1.4	1.7	1.9
6371	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	2,504	87%	2,166	2.05	6	\$1,026	100%	49%	CAC-4	100%	52%	2.5	4.0	2.6
6372	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	1,127	32%	361	0.34	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6373	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-4	100%	52%	1.3	1.6	1.8
6374	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER1	2,504	87%	2,166	2.05	6	\$1,026	100%	49%	CAC-4	100%	52%	2.5	4.0	2.6
6375	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER2	1,127	32%	361	0.34	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6376	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER3	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-4	100%	52%	1.3	1.6	1.8
6374	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	2,504	87%	2,166	2.05	6	\$1,026	100%	49%	CAC-5	63%	25%	2.5	4.0	2.6
6375	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	1,127	32%	361	0.34	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6376	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-5	63%	25%	1.3	1.6	1.8
6377	HVAC	Central AC 18 SEER ER	HVAC	SF	ER1	3,731	67%	2,518	2.39	6	\$1,323	100%	53%	CAC-1	114%	52%	2.2	3.3	2.3



Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score	
6378	HVAC	Central AC 18 SEER ER		HVAC	SF	ER2	2,278	25%	561	0.53	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6379	HVAC	Central AC 18 SEER ER		HVAC	SF	ER3	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-1	114%	52%	1.5	1.8	2.0
6380	HVAC	Central AC 18 SEER ER		HVAC	SF	ER1	3,731	67%	2,518	2.39	6	\$1,323	100%	53%	CAC-2	79%	25%	2.2	3.3	2.3
6381	HVAC	Central AC 18 SEER ER		HVAC	SF	ER2	2,278	25%	561	0.53	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6382	HVAC	Central AC 18 SEER ER		HVAC	SF	ER3	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-2	79%	25%	1.5	1.8	2.0
6383	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	HVAC	SF	ER1	3,731	67%	2,518	2.39	6	\$1,323	100%	100%	CAC-2	79%	25%	0.6	0.4	1.4
6384	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	HVAC	SF	ER2	2,278	25%	561	0.53	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6385	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	HVAC	SF	ER3	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-2	79%	25%	1.5	1.8	2.0
6386	HVAC	Central AC 18 SEER ER		HVAC	MF	ER1	2,504	85%	2,129	2.02	6	\$1,312	100%	53%	CAC-4	100%	52%	2.0	2.8	2.1
6387	HVAC	Central AC 18 SEER ER		HVAC	MF	ER2	1,127	29%	330	0.31	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6388	HVAC	Central AC 18 SEER ER		HVAC	MF	ER3	1,127	29%	330	0.31	18	\$827	100%	85%	CAC-4	100%	52%	0.9	1.0	1.5
6389	HVAC	Central AC 18 SEER ER		HVAC	MF	ER1	2,504	85%	2,129	2.02	6	\$1,312	100%	53%	CAC-5	63%	25%	2.0	2.8	2.1
6390	HVAC	Central AC 18 SEER ER		HVAC	MF	ER2	1,127	29%	330	0.31	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6391	HVAC	Central AC 18 SEER ER		HVAC	MF	ER3	1,127	29%	330	0.31	18	\$827	100%	85%	CAC-5	63%	25%	0.9	1.0	1.5
6392	HVAC	Central AC 19 SEER ER		HVAC	SF	ER1	3,731	90%	3,354	3.18	6	\$1,676	100%	48%	CAC-1	114%	52%	2.2	3.9	2.2
6393	HVAC	Central AC 19 SEER ER		HVAC	SF	ER2	2,278	38%	871	0.83	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6394	HVAC	Central AC 19 SEER ER		HVAC	SF	ER3	2,278	38%	871	0.83	18	\$1,033	100%	77%	CAC-1	114%	52%	1.9	2.4	2.2
6395	HVAC	Central AC 19 SEER ER		HVAC	SF	ER1	3,731	90%	3,354	3.18	6	\$1,676	100%	48%	CAC-2	79%	25%	2.2	3.9	2.2
6396	HVAC	Central AC 19 SEER ER		HVAC	SF	ER2	2,278	38%	871	0.83	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6397	HVAC	Central AC 19 SEER ER		HVAC	SF	ER3	2,278	38%	871	0.83	18	\$1,033	100%	77%	CAC-2	79%	25%	1.9	2.4	2.2
6398	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	HVAC	SF	ER1	3,731	90%	3,354	3.18	6	\$1,676	100%	100%	CAC-2	79%	25%	0.7	0.6	1.6
6399	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	HVAC	SF	ER2	2,278	38%	871	0.83	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6400	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	HVAC	SF	ER3	2,278	38%	871	0.83	18	\$1,033	100%	77%	CAC-2	79%	25%	1.9	2.4	2.2
6401	HVAC	Central AC 19 SEER ER		HVAC	MF	ER1	2,504	56%	1,403	1.33	6	\$1,331	100%	60%	CAC-4	100%	52%	1.4	1.6	1.8
6402	HVAC	Central AC 19 SEER ER		HVAC	MF	ER2	1,127	35%	391	0.37	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6403	HVAC	Central AC 19 SEER ER		HVAC	MF	ER3	1,127	35%	391	0.37	18	\$1,033	100%	77%	CAC-4	100%	52%	0.8	1.1	1.4
6404	HVAC	Central AC 19 SEER ER		HVAC	MF	ER1	2,504	56%	1,403	1.33	6	\$1,331	100%	60%	CAC-5	63%	25%	1.4	1.6	1.8
6405	HVAC	Central AC 19 SEER ER		HVAC	MF	ER2	1,127	35%	391	0.37	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6406	HVAC	Central AC 19 SEER ER		HVAC	MF	ER3	1,127	35%	391	0.37	18	\$1,033	100%	77%	CAC-5	63%	25%	0.8	1.1	1.4
6407	HVAC	Central AC 20 SEER ER		HVAC	SF	ER1	3,731	78%	2,896	2.74	6	\$1,748	100%	51%	CAC-1	114%	52%	1.9	3.0	2.0
6408	HVAC	Central AC 20 SEER ER		HVAC	SF	ER2	2,278	33%	759	0.72	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6409	HVAC	Central AC 20 SEER ER		HVAC	SF	ER3	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-1	114%	52%	1.4	1.9	1.7
6410	HVAC	Central AC 20 SEER ER		HVAC	SF	ER1	3,731	78%	2,896	2.74	6	\$1,748	100%	51%	CAC-2	79%	25%	1.9	3.0	2.0
6411	HVAC	Central AC 20 SEER ER		HVAC	SF	ER2	2,278	33%	759	0.72	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6412	HVAC	Central AC 20 SEER ER		HVAC	SF	ER3	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-2	79%	25%	1.4	1.9	1.7
6413	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	HVAC	SF	ER1	3,731	78%	2,896	2.74	6	\$1,748	100%	100%	CAC-2	79%	25%	0.6	0.5	1.5
6414	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	HVAC	SF	ER2	2,278	33%	759	0.72	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6415	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	HVAC	SF	ER3	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-2	79%	25%	1.4	1.9	1.7
6416	HVAC	Central AC 20 SEER ER		HVAC	MF	ER1	2,504	57%	1,436	1.36	6	\$1,538	100%	59%	CAC-4	100%	52%	1.3	1.5	1.6
6417	HVAC	Central AC 20 SEER ER		HVAC	MF	ER2	1,127	40%	446	0.42	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6418	HVAC	Central AC 20 SEER ER		HVAC	MF	ER3	1,127	40%	446	0.42	18	\$1,240	100%	73%	CAC-4	100%	52%	0.8	1.1	1.3
6419	HVAC	Central AC 20 SEER ER		HVAC	MF	ER1	2,504	57%	1,436	1.36	6	\$1,538	100%	59%	CAC-5	63%	25%	1.3	1.5	1.6
6420	HVAC	Central AC 20 SEER ER		HVAC	MF	ER2	1,127	40%	446	0.42	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6421	HVAC	Central AC 20 SEER ER		HVAC	MF	ER3	1,127	40%	446	0.42	18	\$1,240	100%	73%	CAC-5	63%	25%	0.8	1.1	1.3
6422	HVAC	Central AC 21 SEER ER		HVAC	SF	ER1	3,731	76%	2,849	2.70	6	\$1,929	100%	52%	CAC-1	114%	52%	1.7	2.6	1.9
6423	HVAC	Central AC 21 SEER ER		HVAC	SF	ER2	2,278	39%	887	0.84	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6424	HVAC	Central AC 21 SEER ER		HVAC	SF	ER3	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-1	114%	52%	1.4	2.0	1.7
6425	HVAC	Central AC 21 SEER ER		HVAC	SF	ER1	3,731	76%	2,849	2.70	6	\$1,929	100%	52%	CAC-2	79%	25%	1.7	2.6	1.9
6426	HVAC	Central AC 21 SEER ER		HVAC	SF	ER2	2,278	39%	887	0.84	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6427	HVAC	Central AC 21 SEER ER		HVAC	SF	ER3	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-2	79%	25%	1.4	2.0	1.7
6428	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	HVAC	SF	ER1	3,731	76%	2,849	2.70	6	\$1,929	100%	100%	CAC-2	79%	25%	0.6	0.5	1.5
6429	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	HVAC	SF	ER2	2,278	39%	887	0.84	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6430	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	HVAC	SF	ER3	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-2	79%	25%	1.4	2.0	1.7
6431	HVAC	Central AC 21 SEER ER		HVAC	MF	ER1	2,504	60%	1,508	1.43	6	\$1,745	100%	57%	CAC-4	100%	52%	1.1	1.4	1.5
6432	HVAC	Central AC 21 SEER ER		HVAC	MF	ER2	1,127	44%	496	0.47	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6433	HVAC	Central AC 21 SEER ER		HVAC	MF	ER3	1,127	44%	496	0.47	18	\$1,447	100%	69%	CAC-4	100%	52%	0.8	1.1	1.3
6434	HVAC	Central AC 21 SEER ER		HVAC	MF	ER1	2,504	60%	1,508	1.43	6	\$1,745	100%	57%	CAC-5	63%	25%	1.1	1.4	1.5
6435	HVAC	Central AC 21 SEER ER		HVAC	MF	ER2	1,127	44%	496	0.47	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6436	HVAC	Central AC 21 SEER ER	HVAC	MF	ER3	1,127	44%	496	0.47	18	\$1,447	100%	69%	CAC-5	63%	25%	0.8	1.1	1.3
6437	HVAC	Central AC 15 SEER MO	HVAC	SF	MO	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-1	114%	52%	3.2	1.2	3.9
6438	HVAC	Central AC 15 SEER MO	HVAC	SF	MO	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-2	79%	25%	3.2	1.2	3.9
6439	HVAC	Central AC 15 SEER MO	Single Family Income Eligible	SF	MO	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-2	79%	25%	3.2	1.2	3.9
6440	HVAC	Central AC 15 SEER MO	HVAC	SF	NC	2,278	7%	165	0.16	18	\$108	100%	100%	CAC-3	114%	0%	3.2	1.2	3.9
6441	HVAC	Central AC 15 SEER MO	Multifamily Market Rate	MF	MO	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-4	100%	52%	3.6	0.6	4.5
6442	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-4	100%	52%	2.4	0.4	3.3
6443	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-5	63%	25%	2.4	0.4	3.3
6444	HVAC	Central AC 15 SEER MO	HVAC	MF	NC	1,127	5%	55	0.05	18	\$108	100%	100%	CAC-6	100%	0%	2.4	0.4	3.3
6445	HVAC	Central AC 16 SEER MO	HVAC	SF	NC	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-1	114%	52%	4.1	2.1	4.6
6446	HVAC	Central AC 16 SEER MO	HVAC	SF	MO	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-2	79%	25%	4.1	2.1	4.6
6447	HVAC	Central AC 16 SEER MO	Single Family Income Eligible	SF	MO	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-2	79%	25%	4.1	2.1	4.6
6448	HVAC	Central AC 16 SEER MO	HVAC	SF	NC	2,278	12%	284	0.27	18	\$221	100%	100%	CAC-3	114%	0%	4.1	2.1	4.6
6449	HVAC	Central AC 16 SEER MO	Multifamily Market Rate	MF	MO	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-4	100%	52%	3.9	1.9	4.4
6450	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-4	100%	52%	3.9	1.9	4.4
6451	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-5	63%	25%	3.9	1.9	4.4
6452	HVAC	Central AC 16 SEER MO	HVAC	MF	NC	1,127	23%	258	0.24	18	\$221	100%	100%	CAC-6	100%	0%	3.9	1.9	4.4
6453	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-1	114%	52%	2.4	1.7	2.8
6454	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-2	79%	25%	2.4	1.7	2.8
6455	HVAC	Central AC 17 SEER MO	Single Family Income Eligible	SF	MO	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-2	79%	25%	2.4	1.7	2.8
6456	HVAC	Central AC 17 SEER MO	HVAC	SF	NC	2,278	17%	392	0.37	18	\$620	100%	81%	CAC-3	114%	0%	2.4	1.7	2.8
6457	HVAC	Central AC 17 SEER MO	Multifamily Market Rate	MF	MO	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-4	100%	52%	2.3	1.6	2.7
6458	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-4	100%	52%	2.3	1.6	2.7
6459	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-5	63%	25%	2.3	1.6	2.7
6460	HVAC	Central AC 17 SEER MO	HVAC	MF	NC	1,127	32%	361	0.34	18	\$620	100%	81%	CAC-6	100%	0%	2.3	1.6	2.7
6461	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-1	114%	52%	2.2	1.8	2.7
6462	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-2	79%	25%	2.2	1.8	2.7
6463	HVAC	Central AC 18 SEER MO	Single Family Income Eligible	SF	MO	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-2	79%	25%	2.2	1.8	2.7
6464	HVAC	Central AC 18 SEER MO	HVAC	SF	NC	2,278	25%	561	0.53	18	\$827	100%	85%	CAC-3	114%	0%	2.2	1.8	2.7
6465	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	1,127	29%	330	0.31	18	\$827	100%	85%	CAC-4	100%	52%	1.6	1.0	2.2
6466	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	1,127	29%	330	0.31	18	\$827	100%	85%	CAC-5	63%	25%	1.6	1.0	2.2
6467	HVAC	Central AC 18 SEER MO	HVAC	MF	NC	1,127	29%	330	0.31	18	\$827	100%	85%	CAC-6	100%	0%	1.6	1.0	2.2
6468	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	2,278	38%	871	0.83	18	\$1,676	100%	48%	CAC-1	114%	52%	1.5	2.4	1.7
6469	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	2,278	38%	871	0.83	18	\$1,676	100%	48%	CAC-2	79%	25%	1.5	2.4	1.7
6470	HVAC	Central AC 19 SEER MO	Single Family Income Eligible	SF	MO	2,278	38%	871	0.83	18	\$1,676	100%	48%	CAC-2	79%	25%	1.5	2.4	1.7
6471	HVAC	Central AC 19 SEER MO	HVAC	SF	NC	2,278	38%	871	0.83	18	\$1,676	100%	48%	CAC-3	114%	0%	1.5	2.4	1.7
6472	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	1,127	35%	391	0.37	18	\$1,676	100%	48%	CAC-4	100%	52%	0.9	1.1	1.2
6473	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	1,127	35%	391	0.37	18	\$1,676	100%	48%	CAC-5	63%	25%	0.9	1.1	1.2
6474	HVAC	Central AC 19 SEER MO	HVAC	MF	NC	1,127	35%	391	0.37	18	\$1,676	100%	48%	CAC-6	100%	0%	0.9	1.1	1.2
6475	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-1	114%	52%	1.8	1.9	2.2
6476	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-2	79%	25%	1.8	1.9	2.2
6477	HVAC	Central AC 20 SEER MO	Single Family Income Eligible	SF	MO	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-2	79%	25%	1.8	1.9	2.2
6478	HVAC	Central AC 20 SEER MO	HVAC	SF	NC	2,278	33%	759	0.72	18	\$1,240	100%	73%	CAC-3	114%	0%	1.8	1.9	2.2
6479	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	1,127	127%	1,436	1.36	18	\$1,240	100%	73%	CAC-4	100%	52%	3.1	3.5	3.1
6480	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	1,127	40%	446	0.42	18	\$1,240	100%	73%	CAC-5	63%	25%	1.3	1.1	1.8
6481	HVAC	Central AC 20 SEER MO	HVAC	MF	NC	1,127	40%	446	0.42	18	\$1,240	100%	73%	CAC-6	100%	0%	1.3	1.1	1.8
6482	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-1	114%	52%	1.8	2.0	2.1
6483	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-2	79%	25%	1.8	2.0	2.1
6484	HVAC	Central AC 21 SEER MO	Single Family Income Eligible	SF	MO	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-2	79%	25%	1.8	2.0	2.1
6485	HVAC	Central AC 21 SEER MO	HVAC	SF	NC	2,278	39%	887	0.84	18	\$1,447	100%	69%	CAC-3	114%	0%	1.8	2.0	2.1
6486	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	1,127	44%	496	0.47	18	\$1,447	100%	69%	CAC-4	100%	52%	1.2	1.1	1.7
6487	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	1,127	44%	496	0.47	18	\$1,447	100%	69%	CAC-5	63%	25%	1.2	1.1	1.7
6488	HVAC	Central AC 21 SEER MO	HVAC	MF	NC	1,127	44%	496	0.47	18	\$1,447	100%	69%	CAC-6	100%	0%	1.2	1.1	1.7
6489	HVAC	ECM Fan	HVAC	SF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-1	100%	52%	0.6	0.6	1.8
6490	HVAC	ECM Fan	HVAC	SF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-2	100%	25%	0.6	0.6	1.8
6491	HVAC	ECM Fan	Single Family Income Eligible	SF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-2	100%	25%	0.4	0.4	1.6
6492	HVAC	ECM Fan	HVAC	MF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-3	100%	52%	0.6	0.6	1.8
6493	HVAC	ECM Fan	Multifamily Market Rate	MF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-3	100%	52%	0.6	0.6	1.8

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6494	HVAC	ECM Fan	HVAC	MF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-4	100%	25%	0.6	0.6	1.8
6495	HVAC	ECM Fan	Multifamily Income Eligible	MF	Retrofit	1,455	40%	582	0.27	6	\$322	100%	100%	ECM-4	100%	25%	0.4	0.4	1.6
6496	HVAC	Ductless AC ER	HVAC	SF	ER1	3,731	33%	1,227	1.16	6	\$1,409	100%	14%	CAC-1	114%	52%	2.2	5.7	2.2
6497	HVAC	Ductless AC ER	HVAC	SF	ER2	2,278	9%	215	0.20	12	\$0	100%	35%	CAC-1	114%	52%	1.0	1.0	1.0
6498	HVAC	Ductless AC ER	HVAC	SF	ER3	2,278	9%	215	0.20	18	\$365	100%	55%	CAC-1	114%	52%	1.3	2.4	1.5
6499	HVAC	Ductless AC ER	HVAC	SF	ER1	3,731	33%	1,227	1.16	6	\$1,409	100%	14%	CAC-2	79%	25%	2.2	5.7	2.2
6500	HVAC	Ductless AC ER	HVAC	SF	ER2	2,278	9%	215	0.20	12	\$0	100%	35%	CAC-2	79%	25%	1.0	1.0	1.0
6501	HVAC	Ductless AC ER	HVAC	SF	ER3	2,278	9%	215	0.20	18	\$365	100%	55%	CAC-2	79%	25%	1.3	2.4	1.5
6502	HVAC	Ductless AC ER	HVAC	MF	ER1	2,504	56%	1,403	1.33	6	\$1,558	100%	13%	CAC-4	100%	52%	2.1	6.5	2.0
6503	HVAC	Ductless AC ER	HVAC	MF	ER2	1,127	36%	407	0.39	12	\$0	100%	35%	CAC-4	100%	52%	1.0	1.0	1.0
6504	HVAC	Ductless AC ER	HVAC	MF	ER3	1,127	36%	407	0.39	18	\$365	100%	55%	CAC-4	100%	52%	2.5	4.5	2.4
6505	HVAC	Ductless AC ER	HVAC	MF	ER1	2,504	56%	1,403	1.33	6	\$1,558	100%	13%	CAC-5	63%	25%	2.1	6.5	2.0
6506	HVAC	Ductless AC ER	HVAC	MF	ER2	1,127	36%	407	0.39	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6507	HVAC	Ductless AC ER	HVAC	MF	ER3	1,127	36%	407	0.39	18	\$365	100%	55%	CAC-5	63%	25%	2.5	4.5	2.4
6508	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER1	2,504	56%	1,403	1.33	6	\$1,558	100%	27%	CAC-5	63%	25%	2.1	3.1	2.2
6509	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER2	1,127	28%	320	0.30	12	\$0	100%	35%	CAC-5	63%	25%	1.0	1.0	1.0
6510	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER3	1,127	28%	320	0.30	18	\$365	100%	55%	CAC-5	63%	25%	2.0	3.6	2.0
6511	HVAC	Ductless AC ROB	HVAC	SF	MO	2,278	9%	215	0.20	18	\$365	100%	55%	CAC-1	114%	52%	6.8	2.4	7.0
6512	HVAC	Ductless AC ROB	HVAC	SF	MO	2,278	9%	215	0.20	18	\$365	100%	55%	CAC-2	79%	25%	6.8	2.4	7.0
6513	HVAC	Ductless AC ROB	HVAC	SF	NC	2,278	9%	215	0.20	18	\$365	100%	55%	CAC-3	114%	0%	6.8	2.4	7.0
6514	HVAC	Ductless AC ROB	HVAC	MF	MO	1,127	36%	407	0.39	18	\$365	100%	55%	CAC-4	100%	52%	8.0	4.5	7.9
6515	HVAC	Ductless AC ROB	HVAC	MF	MO	1,127	36%	407	0.39	18	\$365	100%	55%	CAC-5	63%	25%	8.0	4.5	7.9
6516	HVAC	Ductless AC ROB	HVAC	MF	NC	1,127	36%	407	0.39	18	\$365	100%	55%	CAC-6	100%	0%	8.0	4.5	7.9
6517	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	18,455	31%	5,805	1.03	6	\$2,769	100%	18%	HP-1	27%	0%	1.4	3.6	2.4
6518	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	17,078	26%	4,458	0.29	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6519	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-1	27%	0%	5.1	5.1	15.9
6520	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	18,455	31%	5,805	1.03	6	\$2,769	100%	18%	HP-3	27%	0%	1.4	3.6	2.4
6521	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	17,078	26%	4,458	0.29	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6522	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-3	27%	0%	5.1	5.1	15.9
6523	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER1	18,455	31%	5,805	1.03	6	\$2,769	100%	34%	HP-3	27%	0%	1.4	1.8	2.6
6524	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER2	17,078	26%	4,458	0.29	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6525	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER3	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-3	27%	0%	5.1	5.1	15.9
6526	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER1	13,204	32%	4,218	0.74	6	\$2,769	100%	34%	HP-7	60%	0%	1.2	1.4	2.1
6527	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER2	8,682	42%	3,661	0.21	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6528	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER3	8,682	42%	3,661	0.21	18	\$365	100%	89%	HP-7	60%	0%	5.6	6.3	17.6
6529	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER1	13,204	32%	4,218	0.74	6	\$2,769	100%	18%	HP-7	60%	0%	1.2	2.6	2.0
6530	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER2	8,682	42%	3,661	0.21	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6531	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER3	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-7	60%	0%	4.1	4.1	13.2
6532	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER1	13,204	32%	4,218	0.74	6	\$2,769	100%	18%	HP-9	67%	0%	1.2	2.6	2.0
6533	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER2	8,682	42%	3,661	0.21	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6534	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER3	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-9	67%	0%	4.1	4.1	13.2
6535	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER1	13,204	32%	4,218	0.74	6	\$2,769	100%	15%	HP-9	67%	0%	1.2	3.1	1.9
6536	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER2	8,682	42%	3,661	0.21	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6537	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER3	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-9	67%	0%	4.1	4.1	13.2
6538	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-1	27%	0%	9.1	5.1	19.9
6539	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-3	27%	0%	9.1	5.1	19.9
6540	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	NC	17,078	26%	4,458	0.29	18	\$365	100%	100%	HP-5	27%	0%	9.1	5.1	19.9
6541	HVAC	Ductless ASHP - Resistance MO	Multifamily Market Rate	MF	MO	8,682	42%	3,661	0.21	18	\$365	100%	89%	HP-7	60%	0%	11.1	6.3	23.1
6542	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-7	60%	0%	8.1	4.1	17.2
6543	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-9	67%	0%	8.1	4.1	17.2
6544	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	NC	8,682	42%	3,661	0.21	18	\$365	100%	100%	HP-11	60%	0%	8.1	4.1	17.2
6545	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	11,562	28%	3,262	1.03	6	\$2,769	100%	18%	HP-2	5%	52%	1.2	2.7	1.7
6546	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	8,005	10%	834	0.29	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6547	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	8,005	10%	834	0.29	18	\$365	100%	100%	HP-2	5%	52%	1.8	1.8	3.8
6548	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	11,562	28%	3,262	1.03	6	\$2,769	100%	18%	HP-4	6%	25%	1.2	2.7	1.7
6549	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	8,005	10%	834	0.29	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6550	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	8,005	10%	834	0.29	18	\$365	100%	100%	HP-4	6%	25%	1.8	1.8	3.8
6551	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER1	11,562	28%	3,262	1.03	6	\$2,769	100%	36%	HP-4	6%	25%	1.2	1.3	1.9

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6552	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER2	8,005	10%	834	0.29	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6553	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER3	8,005	10%	834	0.29	18	\$365	100%	100%	HP-4	6%	25%	0.9	0.9	2.4
6554	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	7,733	32%	2,455	0.74	6	\$2,769	100%	18%	HP-8	11%	52%	1.1	2.0	1.5
6555	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	4,051	19%	767	0.21	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6556	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	4,051	19%	767	0.21	18	\$365	100%	100%	HP-8	11%	52%	1.4	1.4	3.6
6557	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	7,733	32%	2,455	0.74	6	\$2,769	100%	18%	HP-10	6%	25%	1.1	2.0	1.5
6558	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	4,051	19%	767	0.21	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6559	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	4,051	19%	767	0.21	18	\$365	100%	100%	HP-10	6%	25%	1.4	1.4	3.6
6560	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	8,005	10%	834	0.29	18	\$365	100%	100%	HP-2	5%	52%	5.8	1.8	7.8
6561	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	8,005	10%	834	0.29	18	\$365	100%	100%	HP-4	6%	25%	5.8	1.8	7.8
6562	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	NC	8,005	10%	834	0.29	18	\$365	100%	100%	HP-6	5%	0%	5.8	1.8	7.8
6563	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	4,051	19%	767	0.21	18	\$365	100%	100%	HP-8	11%	52%	5.4	1.4	7.6
6564	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	4,051	19%	767	0.21	18	\$365	100%	100%	HP-10	6%	25%	5.4	1.4	7.6
6565	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	NC	4,051	19%	767	0.21	18	\$365	100%	100%	HP-12	11%	0%	5.4	1.4	7.6
6566	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	18,455	78%	14,303	1.43	6	\$5,250	100%	34%	HP-1	27%	0%	1.0	2.0	2.6
6567	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	17,078	74%	12,655	1.43	12	\$0	100%	35%	HP-1	27%	0%	1.0	1.0	1.0
6568	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	17,078	74%	12,655	1.43	18	\$3,200	100%	56%	HP-1	27%	0%	2.6	4.6	7.2
6569	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	18,455	78%	14,303	1.43	6	\$5,250	100%	34%	HP-3	27%	0%	1.0	2.0	2.6
6570	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	17,078	74%	12,655	1.43	12	\$0	100%	35%	HP-3	27%	0%	1.0	1.0	1.0
6571	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	17,078	74%	12,655	1.43	18	\$3,200	100%	56%	HP-3	27%	0%	2.6	4.6	7.2
6572	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	13,204	77%	10,232	1.43	6	\$5,250	100%	34%	HP-7	60%	0%	0.9	1.6	2.0
6573	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	8,682	74%	6,433	1.43	12	\$0	100%	35%	HP-7	60%	0%	1.0	1.0	1.0
6574	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	8,682	74%	6,433	1.43	18	\$3,200	100%	56%	HP-7	60%	0%	1.7	3.0	3.9
6575	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	13,204	77%	10,232	1.43	6	\$5,250	100%	34%	HP-9	67%	0%	0.9	1.6	2.0
6576	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	8,682	74%	6,433	1.43	12	\$0	100%	35%	HP-9	67%	0%	1.0	1.0	1.0
6577	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	8,682	74%	6,447	1.43	18	\$3,200	100%	56%	HP-9	67%	0%	1.7	3.0	3.9
6578	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	17,078	74%	12,689	1.43	18	\$4,717	100%	38%	HP-1	27%	0%	2.1	4.6	5.2
6579	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	17,078	74%	12,689	1.43	18	\$4,717	100%	38%	HP-3	27%	0%	2.1	4.6	5.2
6580	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	NC	17,078	74%	12,689	1.43	18	\$4,717	100%	38%	HP-5	27%	0%	2.1	4.6	5.2
6581	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	8,682	74%	6,447	1.43	18	\$4,717	100%	38%	HP-7	60%	0%	1.5	3.0	3.0
6582	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	8,682	74%	6,447	1.43	18	\$4,717	100%	38%	HP-9	67%	0%	1.5	3.0	3.0
6583	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	NC	8,682	74%	6,447	1.43	18	\$4,717	100%	38%	HP-11	60%	0%	1.5	3.0	3.0
6584	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	11,562	51%	5,887	1.43	6	\$5,250	100%	13%	HP-2	5%	52%	0.7	3.0	1.2
6585	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	8,005	36%	2,895	1.43	12	\$0	100%	35%	HP-2	5%	52%	1.0	1.0	1.0
6586	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	8,005	36%	2,895	1.43	18	\$3,200	100%	22%	HP-2	5%	52%	1.2	5.4	1.7
6587	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	11,562	51%	5,887	1.43	6	\$5,250	100%	13%	HP-4	6%	25%	0.7	3.0	1.2
6588	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	8,005	36%	2,895	1.43	12	\$0	100%	35%	HP-4	6%	25%	1.0	1.0	1.0
6589	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	8,005	36%	2,895	1.43	18	\$3,200	100%	22%	HP-4	6%	25%	1.2	5.4	1.7
6590	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	7,733	51%	3,938	1.43	6	\$5,250	100%	13%	HP-8	11%	52%	0.6	2.5	1.0
6591	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	4,051	36%	1,465	1.43	12	\$0	100%	35%	HP-8	11%	52%	1.0	1.0	1.0
6592	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	4,051	36%	1,465	1.43	18	\$3,200	100%	22%	HP-8	11%	52%	1.0	4.5	1.0
6593	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	7,733	51%	3,938	1.43	6	\$5,250	100%	13%	HP-10	6%	25%	0.6	2.5	1.0
6594	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	4,051	36%	1,465	1.43	12	\$0	100%	35%	HP-10	6%	25%	1.0	1.0	1.0
6595	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	4,051	36%	1,465	1.43	18	\$3,200	100%	22%	HP-10	6%	25%	1.0	4.5	1.0
6596	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	8,005	37%	2,927	1.43	18	\$3,200	100%	22%	HP-2	5%	52%	1.7	5.5	2.2
6597	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	8,005	37%	2,927	1.43	18	\$3,200	100%	22%	HP-4	6%	25%	1.7	5.5	2.2
6598	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	NC	8,005	37%	2,927	1.43	18	\$3,200	100%	22%	HP-6	5%	0%	1.7	5.5	2.2
6599	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	4,051	37%	1,481	1.43	18	\$3,200	100%	22%	HP-8	11%	52%	1.5	4.5	1.5
6600	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	4,051	37%	1,481	1.43	18	\$3,200	100%	22%	HP-10	6%	25%	1.5	4.5	1.5
6601	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	NC	4,051	37%	1,481	1.43	18	\$3,200	100%	22%	HP-12	11%	0%	1.5	4.5	1.5
6602	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	80%	T-STAT-1	5%	12%	2.5	3.1	5.6
6603	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	77%	T-STAT-1	5%	12%	2.5	3.2	5.6
6604	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	80%	T-STAT-1	5%	12%	2.5	3.1	5.6
6605	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	80%	T-STAT-2	6%	12%	2.5	3.1	5.6
6606	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	77%	T-STAT-2	6%	12%	2.5	3.2	5.6
6607	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	80%	T-STAT-2	6%	12%	2.5	3.1	5.6
6608	HVAC	Learning Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	6,906	8%	552	0.13	10	\$125	100%	100%	T-STAT-2	6%	12%	1.6	1.6	4.1
6609	HVAC	Learning Thermostat - ASHP	New Construction	SF	NC	6,906	8%	552	0.13	10	\$125	100%	40%	T-STAT-3	5%	0%	2.5	6.2	5.2

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6610	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	NC	6,906	8%	552	0.13	10	\$125	100%	77%	T-STAT-3	5%	0%	2.5	3.2	5.6
6611	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	80%	T-STAT-4	11%	12%	0.8	1.0	2.3
6612	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	77%	T-STAT-4	11%	12%	0.8	1.0	2.2
6613	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	80%	T-STAT-4	11%	12%	0.8	1.0	2.3
6614	HVAC	Learning Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	80%	T-STAT-4	11%	12%	0.8	1.0	2.3
6615	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	80%	T-STAT-5	6%	12%	0.8	1.0	2.3
6616	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	77%	T-STAT-5	6%	12%	0.8	1.0	2.2
6617	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	80%	T-STAT-5	6%	12%	0.8	1.0	2.3
6618	HVAC	Learning Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	2,120	8%	170	0.04	10	\$125	100%	100%	T-STAT-5	6%	12%	0.3	0.3	1.6
6619	HVAC	Learning Thermostat - ASHP	New Construction	MF	NC	2,120	8%	170	0.04	10	\$125	100%	40%	T-STAT-6	11%	0%	0.8	1.9	1.9
6620	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	NC	2,120	8%	170	0.04	10	\$125	100%	77%	T-STAT-6	11%	0%	0.8	1.0	2.2
6621	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	80%	T-STAT-7	27%	12%	4.6	5.8	9.7
6622	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	77%	T-STAT-7	27%	12%	4.6	6.0	9.7
6623	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	80%	T-STAT-7	27%	12%	4.6	5.8	9.7
6624	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	80%	T-STAT-8	44%	12%	4.6	5.8	9.7
6625	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	77%	T-STAT-8	44%	12%	4.6	6.0	9.7
6626	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	80%	T-STAT-8	27%	12%	4.6	5.8	9.7
6627	HVAC	Learning Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	12,872	8%	1,030	0.25	10	\$125	100%	100%	T-STAT-8	44%	12%	3.0	3.0	6.8
6628	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	SF	NC	12,872	8%	1,030	0.25	10	\$125	100%	40%	T-STAT-9	27%	0%	4.6	11.6	9.3
6629	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	12,872	8%	1,030	0.25	10	\$125	100%	77%	T-STAT-9	27%	0%	4.6	6.0	9.7
6630	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	80%	T-STAT-10	60%	12%	1.2	1.4	3.0
6631	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	77%	T-STAT-10	60%	12%	1.2	1.5	3.0
6632	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	80%	T-STAT-10	60%	12%	1.2	1.4	3.0
6633	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	80%	T-STAT-10	60%	12%	1.2	1.4	3.0
6634	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	80%	T-STAT-11	67%	12%	1.2	1.4	3.0
6635	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	77%	T-STAT-11	67%	12%	1.2	1.5	3.0
6636	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	80%	T-STAT-11	60%	12%	1.2	1.4	3.0
6637	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	3,190	8%	255	0.06	10	\$125	100%	100%	T-STAT-11	67%	12%	0.5	0.5	1.9
6638	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	MF	NC	3,190	8%	255	0.06	10	\$125	100%	40%	T-STAT-12	60%	0%	1.2	2.9	2.6
6639	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	NC	3,190	8%	255	0.06	10	\$125	100%	77%	T-STAT-12	60%	0%	1.2	1.5	3.0
6640	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	80%	T-STAT-13	64%	12%	1.0	1.3	2.5
6641	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	77%	T-STAT-13	64%	12%	1.0	1.3	2.5
6642	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	80%	T-STAT-13	64%	12%	1.0	1.3	2.5
6643	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	80%	T-STAT-14	48%	12%	1.0	1.3	2.5
6644	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	77%	T-STAT-14	48%	12%	1.0	1.3	2.5
6645	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	80%	T-STAT-14	64%	12%	1.0	1.3	2.5
6646	HVAC	Learning Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	2,450	8%	196	0.05	10	\$125	100%	100%	T-STAT-14	48%	12%	0.7	0.7	2.1
6647	HVAC	Learning Thermostat - Gas Heated	New Construction	SF	NC	2,450	8%	196	0.05	10	\$125	100%	40%	T-STAT-15	64%	0%	1.0	2.5	2.1
6648	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	NC	2,450	8%	196	0.05	10	\$125	100%	77%	T-STAT-15	64%	0%	1.0	1.3	2.5
6649	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	80%	T-STAT-16	25%	6%	0.4	0.4	1.4
6650	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	77%	T-STAT-16	25%	6%	0.4	0.5	1.4
6651	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	80%	T-STAT-16	25%	6%	0.4	0.4	1.4
6652	HVAC	Learning Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	80%	T-STAT-16	25%	6%	0.4	0.4	1.4
6653	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	80%	T-STAT-17	23%	6%	0.4	0.4	1.4
6654	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	77%	T-STAT-17	23%	6%	0.4	0.5	1.4
6655	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	80%	T-STAT-17	23%	6%	0.4	0.4	1.4

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6656	HVAC	Learning Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	874	8%	70	0.02	10	\$125	100%	69%	T-STAT-17	23%	6%	0.4	0.5	1.3
6657	HVAC	Learning Thermostat - Gas Heated	New Construction	MF	NC	874	8%	70	0.02	10	\$125	100%	40%	T-STAT-18	25%	0%	0.4	0.9	1.0
6658	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	NC	874	8%	70	0.02	10	\$125	100%	77%	T-STAT-18	25%	0%	0.4	0.5	1.4
6659	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	794	9%	73	0.07	9	\$20	100%	100%	RAC-1	23%	68%	4.8	4.8	4.6
6660	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	794	9%	73	0.07	9	\$20	100%	100%	RAC-2	23%	68%	4.8	4.8	4.6
6661	HVAC	ENERGY STAR Room AC	Single Family Income Eligible	SF	MO	794	9%	73	0.07	9	\$20	100%	100%	RAC-2	23%	68%	0.3	0.3	1.2
6662	HVAC	ENERGY STAR Room AC	Efficient Products	SF	NC	794	9%	73	0.07	9	\$20	100%	100%	RAC-3	23%	68%	4.8	4.8	4.6
6663	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	794	6%	49	0.15	9	\$20	100%	100%	RAC-4	14%	68%	8.8	8.8	3.4
6664	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	794	6%	49	0.15	9	\$20	100%	100%	RAC-5	14%	68%	8.8	8.8	3.4
6665	HVAC	ENERGY STAR Room AC	Multifamily Income Eligible	MF	MO	794	6%	49	0.15	9	\$20	100%	100%	RAC-5	14%	68%	0.5	0.5	1.1
6666	HVAC	ENERGY STAR Room AC	Efficient Products	MF	NC	794	6%	49	0.15	9	\$20	100%	100%	RAC-6	14%	0%	8.8	8.8	3.4
6667	HVAC	AC Tune-Up	HVAC	SF	Retrofit	3,731	16%	595	0.56	2	\$81	100%	57%	AC TUNE-1	114%	89%	2.4	4.2	2.4
6668	HVAC	AC Tune-Up	Single Family Income Eligible	SF	Retrofit	3,731	16%	595	0.56	2	\$81	100%	100%	AC TUNE-2	79%	89%	0.9	0.9	1.7
6669	HVAC	AC Tune-Up	Multifamily Market Rate	MF	Retrofit	2,504	15%	387	0.37	2	\$81	100%	100%	AC TUNE-3	100%	89%	1.3	1.3	2.0
6670	HVAC	AC Tune-Up	Multifamily Income Eligible	MF	Retrofit	2,504	15%	387	0.37	2	\$81	100%	100%	AC TUNE-4	63%	89%	1.3	1.3	2.0
6671	HVAC	Dirty Filter Alarm	Energy Efficiency Kits	SF	Retrofit	5,569	1%	54	0.03	14	\$5	100%	100%	ALARM-1	100%	35%	9.4	9.4	13.3
6672	HVAC	Dirty Filter Alarm	Single Family Income Eligible	SF	Retrofit	5,569	2%	98	0.05	14	\$5	100%	100%	ALARM-2	100%	35%	17.1	17.1	23.6
6673	HVAC	Dirty Filter Alarm	Multifamily Market Rate	MF	Retrofit	2,461	3%	79	0.04	14	\$5	100%	100%	ALARM-3	100%	39%	13.8	13.8	19.2
6674	HVAC	Dirty Filter Alarm	Multifamily Income Eligible	MF	Retrofit	2,461	2%	38	0.02	14	\$5	100%	100%	ALARM-4	100%	39%	0.6	0.6	1.8
6675	HVAC	HP Tune-Up	HVAC	SF	Retrofit	11,562	10%	1,140	0.56	2	\$81	100%	57%	HP TUNE-1	5%	89%	2.7	4.7	4.2
6676	HVAC	HP Tune-Up	Single Family Income Eligible	SF	Retrofit	11,562	10%	1,140	0.56	2	\$81	100%	100%	HP TUNE-2	6%	89%	1.0	1.0	2.3
6677	HVAC	HP Tune-Up	Multifamily Market Rate	MF	Retrofit	5,187	7%	380	0.25	2	\$81	100%	100%	HP TUNE-3	11%	89%	0.9	0.9	2.0
6678	HVAC	HP Tune-Up	Multifamily Income Eligible	MF	Retrofit	5,187	7%	380	0.25	2	\$81	100%	100%	HP TUNE-4	6%	89%	0.2	0.2	1.3
6679	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	Retrofit	6,906	4%	249	0.20	10	\$70	100%	84%	T-STAT-1	5%	12%	4.2	5.0	4.7
6680	HVAC	Setback Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	6,906	4%	249	0.20	10	\$70	100%	100%	T-STAT-2	6%	2%	2.6	2.6	3.3
6681	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	NC	6,906	4%	249	0.20	10	\$70	100%	84%	T-STAT-3	5%	0%	4.2	5.0	4.7
6682	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	2,120	4%	76	0.06	10	\$70	100%	11%	T-STAT-4	11%	6%	1.3	11.9	1.3
6683	HVAC	Setback Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	2,120	4%	76	0.06	10	\$70	100%	100%	T-STAT-5	6%	0%	0.8	0.8	1.7
6684	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	NC	2,120	4%	76	0.06	10	\$70	100%	11%	T-STAT-6	11%	0%	1.3	11.9	1.3
6685	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	12,872	4%	463	0.37	10	\$70	100%	84%	T-STAT-7	27%	12%	7.9	9.4	8.0
6686	HVAC	Setback Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	12,872	4%	463	0.37	10	\$70	100%	100%	T-STAT-8	44%	2%	4.8	4.8	5.3
6687	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	12,872	4%	463	0.37	10	\$70	100%	84%	T-STAT-9	27%	0%	7.9	9.4	8.0
6688	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	3,190	4%	115	0.09	10	\$70	100%	16%	T-STAT-10	60%	6%	2.0	11.9	1.9
6689	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	3,190	4%	115	0.09	10	\$70	100%	100%	T-STAT-11	67%	0%	1.2	1.2	2.1
6690	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	NC	3,190	4%	115	0.09	10	\$70	100%	16%	T-STAT-12	60%	0%	2.0	11.9	1.9
6691	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	Retrofit	2,450	6%	147	0.12	10	\$70	100%	84%	T-STAT-13	64%	12%	2.7	3.2	3.1
6692	HVAC	Setback Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	2,450	6%	147	0.12	10	\$70	100%	100%	T-STAT-14	48%	2%	1.6	1.6	2.4
6693	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	NC	2,450	6%	147	0.12	10	\$70	100%	84%	T-STAT-15	64%	0%	2.7	3.2	3.1
6694	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	874	6%	52	0.04	10	\$70	100%	7%	T-STAT-16	25%	6%	1.0	12.7	0.9
6695	HVAC	Setback Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	874	6%	52	0.04	10	\$70	100%	100%	T-STAT-17	23%	0%	0.6	0.6	1.5
6696	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	NC	874	6%	52	0.04	10	\$70	100%	7%	T-STAT-18	25%	0%	1.0	12.7	0.9
6697	HVAC	Room AC recycling - Primary	Appliance Recycling	SF	Recycle	303	100%	303	0.29	4	\$65	100%	15%	RAC RECY-1	4%	0%	3.0	19.2	2.4
6698	HVAC	Room AC recycling - Primary	Appliance Recycling	MF	Recycle	303	100%	303	0.29	4	\$65	100%	15%	RAC RECY-2	4%	0%	3.0	19.2	2.4
6699	HVAC	Room AC recycling - Secondary	Appliance Recycling	SF	Recycle	196	100%	196	0.19	4	\$65	100%	15%	RAC RECY-3	4%	0%	1.9	12.4	1.6
6700	HVAC	Room AC recycling - Secondary	Appliance Recycling	MF	Recycle	196	100%	196	0.19	4	\$65	100%	15%	RAC RECY-4	4%	0%	1.9	12.4	1.6
6701	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	5,569	40%	2,228	0.30	15	\$3,000	100%	57%	ERV-1	100%	0%	0.5	0.8	1.7
6702	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	5,569	40%	2,228	0.30	15	\$3,000	100%	57%	ERV-2	100%	0%	0.5	0.8	1.7
6703	HVAC	Energy Recovery Ventilator	HVAC	SF	NC	5,569	40%	2,228	0.30	15	\$3,000	100%	57%	ERV-3	100%	0%	0.5	0.8	1.7
6704	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	2,461	40%	984	0.30	15	\$3,000	100%	57%	ERV-4	100%	0%	0.3	0.5	1.1
6705	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	2,461	40%	984	0.30	15	\$3,000	100%	57%	ERV-5	100%	0%	0.3	0.5	1.1
6706	HVAC	Energy Recovery Ventilator	HVAC	MF	NC	2,461	40%	984	0.30	15	\$3,000	100%	57%	ERV-6	100%	0%	0.3	0.5	1.1
6707	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	12,872	5%	644	0.14	15	\$1,625	100%	57%	SVS-1	27%	5%	0.3	0.5	1.2
6708	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	12,872	5%	644	0.14	15	\$1,625	100%	57%	SVS-2	44%	5%	0.3	0.5	1.2

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
6709	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	NC	12,872	5%	644	0.14	15	\$1,625	100%	57%	SVS-3	27%	0%	0.3	0.5	1.2
6710	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	3,190	5%	159	0.09	15	\$1,040	100%	57%	SVS-4	60%	5%	0.2	0.3	0.8
6711	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	3,190	5%	159	0.09	15	\$1,040	100%	57%	SVS-5	67%	5%	0.2	0.3	0.8
6712	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	NC	3,190	5%	159	0.09	15	\$1,040	100%	57%	SVS-6	60%	0%	0.2	0.3	0.8
6713	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	6,906	5%	345	0.14	15	\$1,625	100%	57%	SVS-7	5%	5%	0.2	0.4	0.9
6714	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	6,906	5%	345	0.14	15	\$1,625	100%	57%	SVS-8	6%	5%	0.2	0.4	0.9
6715	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	6,906	5%	345	0.14	15	\$1,625	100%	57%	SVS-9	5%	0%	0.2	0.4	0.9
6716	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	2,120	5%	106	0.09	15	\$1,040	100%	57%	SVS-10	11%	5%	0.2	0.3	0.7
6717	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	2,120	5%	106	0.09	15	\$1,040	100%	57%	SVS-11	6%	5%	0.2	0.3	0.7
6718	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	2,120	5%	106	0.09	15	\$1,040	100%	57%	SVS-12	11%	0%	0.2	0.3	0.7
6719	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	2,450	5%	122	0.14	15	\$1,625	100%	57%	SVS-13	64%	5%	0.2	0.3	0.7
6720	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	2,450	5%	122	0.14	15	\$1,625	100%	57%	SVS-14	48%	5%	0.2	0.3	0.7
6721	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	NC	2,450	5%	122	0.14	15	\$1,625	100%	57%	SVS-15	64%	0%	0.2	0.3	0.7
6722	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	874	5%	44	0.09	15	\$1,040	100%	57%	SVS-16	25%	5%	0.2	0.3	0.6
6723	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	874	5%	44	0.09	15	\$1,040	100%	57%	SVS-17	23%	5%	0.2	0.3	0.6
6724	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	NC	874	5%	44	0.09	15	\$1,040	100%	57%	SVS-18	25%	0%	0.2	0.3	0.6
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	100	10%	10	0.00	19	\$11	100%	91%	BFAN-1	100%	25%	0.6	0.7	2.5
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	100	10%	10	0.00	19	\$11	100%	91%	BFAN-2	100%	0%	0.6	0.7	2.5
6727	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	Retrofit	100	10%	10	0.00	19	\$11	100%	91%	BFAN-3	100%	25%	0.6	0.7	2.5
6728	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	NC	100	10%	10	0.00	19	\$11	100%	91%	BFAN-4	100%	0%	0.6	0.7	2.5
7001	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	PAYS	SF	MO	8	70%	5	0.00	19	\$2	100%	100%	A-LINE-1	3727%	75%	1.7	1.4	4.4
7002	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Single Family Income Eligible	SF	MO	8	49%	4	0.00	19	\$7	100%	43%	A-LINE-2	3727%	75%	0.6	1.0	1.5
7003	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Market Rate	MF	MO	8	49%	4	0.00	19	\$2	100%	37%	A-LINE-3	1854%	75%	1.8	3.9	4.0
7004	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Income Eligible	MF	MO	8	49%	4	0.00	19	\$7	100%	43%	A-LINE-4	1854%	75%	0.6	1.0	1.5
7005	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	PAYS	SF	MO	12	24%	3	0.00	19	\$2	100%	100%	A-LINE-1	3727%	75%	1.2	0.9	3.3
7006	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Single Family Income Eligible	SF	MO	12	24%	3	0.00	19	\$6	100%	52%	A-LINE-2	3727%	75%	0.5	0.7	1.5
7007	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Market Rate	MF	MO	12	35%	4	0.00	19	\$2	100%	41%	A-LINE-3	1854%	75%	2.0	3.9	4.3
7008	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Income Eligible	MF	MO	12	24%	3	0.00	19	\$6	100%	100%	A-LINE-4	1854%	75%	0.5	0.3	1.9
7009	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	PAYS	SF	MO	12	44%	5	0.00	19	\$8	100%	28%	A-LINE-1	3727%	75%	0.6	1.9	1.5
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	12	44%	5	0.00	19	\$8	100%	83%	A-LINE-2	3727%	75%	0.7	0.6	2.1
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	12	44%	5	0.00	19	\$6	100%	100%	A-LINE-3	1854%	75%	0.6	0.5	2.1
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	12	44%	5	0.00	19	\$8	100%	83%	A-LINE-4	1854%	75%	0.7	0.6	2.1
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	16	40%	6	0.00	19	\$8	100%	16%	A-LINE-1	3727%	75%	1.7	3.9	2.6
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	16	40%	6	0.00	19	\$8	100%	63%	A-LINE-2	3727%	75%	1.6	1.0	3.0
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	16	40%	6	0.00	19	\$8	100%	16%	A-LINE-3	1854%	75%	2.0	3.9	3.0
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	16	40%	6	0.00	19	\$8	100%	63%	A-LINE-4	1854%	75%	2.0	1.0	3.4
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	14	62%	9	0.00	19	\$6	100%	37%	REFLECTOR-	788%	75%	1.3	3.0	3.0
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	14	62%	9	0.00	19	\$6	100%	37%	REFLECTOR-	788%	75%	1.3	3.0	3.1
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	14	62%	9	0.00	19	\$6	100%	62%	REFLECTOR-	391%	75%	1.3	1.8	3.3

Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	14	62%	9	0.00	19	\$6	100%	37%	REFLECTOR-	391%	75%	1.3	3.0	3.1
7021	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	PAYS	SF	MO	12	60%	7	0.00	19	\$2	100%	62%	REFLECTOR-	788%	75%	4.3	5.6	9.1
7022	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	12	42%	5	0.00	19	\$10	100%	45%	REFLECTOR-	788%	75%	0.5	0.9	1.5
7023	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	12	41%	5	0.00	19	\$2	100%	62%	REFLECTOR-	391%	75%	3.2	3.9	6.8
7024	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	12	42%	5	0.00	19	\$10	100%	100%	REFLECTOR-	391%	75%	0.5	0.4	2.0
7025	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	PAYS	SF	MO	9	66%	6	0.00	19	\$3	100%	100%	REFLECTOR-	788%	75%	1.3	1.0	3.6
7026	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	9	37%	3	0.00	19	\$10	100%	100%	REFLECTOR-	788%	75%	0.3	0.2	1.6
7027	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	9	37%	3	0.00	19	\$3	100%	100%	REFLECTOR-	391%	75%	0.9	0.6	2.6
7028	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	9	37%	3	0.00	19	\$10	100%	100%	REFLECTOR-	391%	75%	0.3	0.2	1.6
7029	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	PAYS	SF	MO	15	22%	3	0.00	19	\$15	100%	81%	REFLECTOR-	788%	75%	0.3	0.2	1.3
7030	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	15	22%	3	0.00	19	\$15	100%	81%	REFLECTOR-	788%	75%	0.3	0.2	1.3
7031	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	15	22%	3	0.00	19	\$15	100%	81%	REFLECTOR-	391%	75%	0.3	0.2	1.3
7032	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	15	22%	3	0.00	19	\$15	100%	81%	REFLECTOR-	391%	75%	0.3	0.2	1.3
7033	Lighting	LED - 4W Candelabra (CFL baseline)	PAYS	SF	MO	6	78%	5	0.00	19	\$7	100%	31%	SPECIALTY-1	1099%	75%	0.9	1.7	1.8
7034	Lighting	LED - 4W Candelabra (CFL baseline)	Single Family Income Eligible	SF	MO	6	49%	3	0.00	19	\$7	100%	31%	SPECIALTY-2	1099%	75%	0.7	1.0	1.5
7035	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Market Rate	MF	MO	6	49%	3	0.00	19	\$7	100%	17%	SPECIALTY-3	447%	75%	0.7	1.9	1.3
7036	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Income Eligible	MF	MO	6	49%	3	0.00	19	\$7	100%	17%	SPECIALTY-4	447%	75%	0.7	1.9	1.3
7037	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	PAYS	SF	MO	7	37%	3	0.00	19	\$7	100%	100%	SPECIALTY-1	1099%	75%	0.3	0.1	1.5
7038	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Single Family Income Eligible	SF	MO	7	37%	3	0.00	19	\$7	100%	100%	SPECIALTY-2	1099%	75%	0.4	0.1	1.6
7039	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Market Rate	MF	MO	7	37%	3	0.00	19	\$7	100%	100%	SPECIALTY-3	447%	75%	0.3	0.1	1.5
7040	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Income Eligible	MF	MO	7	37%	3	0.00	19	\$7	100%	100%	SPECIALTY-4	447%	75%	0.4	0.1	1.6
7041	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	PAYS	SF	MO	12	21%	2	0.00	19	\$6	100%	37%	SPECIALTY-1	1099%	75%	0.7	0.9	1.5
7042	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Single Family Income Eligible	SF	MO	12	47%	6	0.00	19	\$6	100%	100%	SPECIALTY-2	1099%	75%	1.0	0.6	2.7
7043	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Multifamily Market Rate	MF	MO	12	47%	6	0.00	19	\$4	100%	100%	SPECIALTY-3	447%	75%	1.0	0.6	2.8
7044	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Multifamily Income Eligible	MF	MO	12	47%	6	0.00	19	\$6	100%	37%	SPECIALTY-4	447%	75%	1.2	1.9	2.5
7045	Lighting	LED Nightlights	Energy Efficiency Kits	SF	MO	27	96%	26	0.00	19	\$2	100%	94%	NIGHT-1	30%	75%	10.4	11.0	24.1
7046	Lighting	LED Nightlights	Single Family Income Eligible	SF	MO	30	96%	29	0.00	19	\$6	100%	27%	NIGHT-2	300%	75%	3.7	13.5	8.5
7047	Lighting	LED Nightlights	Multifamily Market Rate	MF	MO	29	96%	28	0.00	19	\$3	100%	94%	NIGHT-3	200%	75%	6.4	6.8	15.2
7048	Lighting	LED Nightlights	Multifamily Income Eligible	MF	MO	30	96%	29	0.00	19	\$6	100%	27%	NIGHT-4	200%	75%	3.7	13.5	8.5
7049	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	124	30%	37	0.05	10	\$30	100%	33%	OCC-1	200%	30%	2.1	6.4	1.7
7050	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	124	30%	37	0.05	10	\$30	100%	33%	OCC-2	200%	30%	2.1	6.4	1.7
7051	Lighting	Occupancy Sensor	Efficient Products	SF	NC	124	30%	37	0.05	10	\$30	100%	33%	OCC-3	200%	0%	2.1	6.4	1.7
7052	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	124	30%	37	0.05	10	\$30	100%	33%	OCC-4	100%	30%	2.1	6.4	1.7
7053	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	124	30%	37	0.05	10	\$30	100%	33%	OCC-5	100%	30%	2.1	6.4	1.7
7054	Lighting	Occupancy Sensor	Efficient Products	MF	NC	124	30%	37	0.05	10	\$30	100%	33%	OCC-6	100%	0%	2.1	6.4	1.7
7055	Lighting	Linear LED	Efficient Products	SF	MO	15	93%	14	0.00	12	\$3	100%	84%	TUBE-1	621%	11%	1.6	1.9	6.5
7056	Lighting	Linear LED	Single Family Income Eligible	SF	MO	15	93%	14	0.00	12	\$3	100%	100%	TUBE-2	621%	11%	1.6	1.6	6.7
7057	Lighting	Linear LED	Efficient Products	SF	NC	15	93%	14	0.00	12	\$3	100%	84%	TUBE-3	621%	0%	1.6	1.9	6.5
7058	Lighting	Linear LED	Efficient Products	MF	MO	15	93%	14	0.00	12	\$3	100%	84%	TUBE-4	309%	11%	1.6	1.9	6.5
7059	Lighting	Linear LED	Multifamily Income Eligible	MF	MO	15	93%	14	0.00	12	\$3	100%	100%	TUBE-5	309%	11%	0.1	0.1	1.2
7060	Lighting	Linear LED	Efficient Products	MF	NC	15	93%	14	0.00	12	\$3	100%	84%	TUBE-6	309%	0%	1.6	1.9	6.5
7061	Lighting	Custom Lighting LED	PAYS	SF	Retrofit	349	90%	314	0.15	19	\$1	100%	100%	CUSTOM LED	100%	75%	421.3	421.3	543.2
7062	Lighting	Custom Lighting LED	PAYS	MF	Retrofit	349	90%	314	0.15	19	\$1	100%	100%	CUSTOM LED	100%	75%	421.3	421.3	543.2
8001	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER1	2,326	64%	1,478	0.35	6	\$930	100%	38%	Pool pump-1	5%	33%	0.6	1.6	1.5



Appendix B: Residential Measure Assumptions

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
8002	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	1,163	27%	315	0.07	4	\$0	100%	35%	Pool pump-1	5%	33%	1.0	1.0	1.0
8003	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	5%	33%	0.6	0.8	1.8
8004	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER1	2,326	64%	1,478	0.35	6	\$930	100%	38%	Pool pump-1	1%	33%	0.6	1.6	1.5
8005	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	1,163	27%	315	0.07	4	\$0	100%	35%	Pool pump-1	1%	33%	1.0	1.0	1.0
8006	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	1%	33%	0.6	0.8	1.8
8007	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	2,326	64%	1,478	0.35	6	\$930	100%	38%	Pool pump-1	1%	33%	0.6	1.6	1.5
8008	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	1,163	27%	315	0.07	4	\$0	100%	35%	Pool pump-1	1%	33%	1.0	1.0	1.0
8009	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	1%	33%	0.6	0.8	1.8
8010	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER1	2,326	64%	1,478	0.35	6	\$930	100%	38%	Pool pump-1	2%	33%	0.6	1.6	1.5
8011	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER2	1,163	27%	315	0.07	4	\$0	100%	35%	Pool pump-1	2%	33%	1.0	1.0	1.0
8012	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER3	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	2%	33%	0.6	0.8	1.8
8013	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	2,326	64%	1,478	0.35	6	\$930	100%	38%	Pool pump-1	2%	33%	0.6	1.6	1.5
8014	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	1,163	27%	315	0.07	4	\$0	100%	35%	Pool pump-1	2%	33%	1.0	1.0	1.0
8015	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	2%	33%	0.6	0.8	1.8
8016	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	5%	33%	0.6	0.8	1.8
8017	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	1%	33%	0.6	0.8	1.8
8018	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	NC	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	5%	0%	0.6	0.8	1.8
8019	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	1%	33%	0.6	0.8	1.8
8020	Pool	Variable Speed Pool Pump - MO	Multifamily Market Rate	MF	MO	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	2%	33%	0.6	0.8	1.8
8021	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	2%	33%	0.6	0.8	1.8
8022	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	NC	1,163	27%	315	0.07	10	\$314	100%	75%	Pool pump-1	1%	0%	0.6	0.8	1.8
8023	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	2,364	38%	900	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.2	0.2	1.5
8024	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	2,364	38%	900	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.2	0.2	1.5
8025	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	NC	2,364	38%	900	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	0%	0.2	0.2	1.5
8026	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	MO	2,364	38%	900	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.2	0.2	1.5
8027	Pool	Pool Heater (COP 5.5-5.9)	Multifamily Income Eligible	MF	MO	2,364	38%	900	0.00	8	\$1,250	100%	100%	Pool heater-1	0%	1%	0.1	0.1	1.3
8028	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	NC	2,364	38%	900	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	0%	0.2	0.2	1.5
8029	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	2,364	52%	1,234	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.3	0.3	1.7
8030	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	2,364	52%	1,234	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.3	0.3	1.7
8031	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	NC	2,364	52%	1,234	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	0%	0.3	0.3	1.7
8032	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	MO	2,364	52%	1,234	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	1%	0.3	0.3	1.7
8033	Pool	Pool Heater (COP >= 6.0)	Multifamily Income Eligible	MF	MO	2,364	52%	1,234	0.00	8	\$1,250	100%	100%	Pool heater-1	0%	1%	0.1	0.1	1.4
8034	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	NC	2,364	52%	1,234	0.00	8	\$1,250	100%	84%	Pool heater-1	0%	0%	0.3	0.3	1.7
9001	Water Heating	Kitchen Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	2,955	2%	47	0.00	10	\$11	100%	29%	Kitch-1	29%	63%	1.7	5.8	4.7
9002	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	2,955	2%	47	0.00	10	\$11	100%	29%	Kitch-1	29%	63%	1.7	5.8	4.7
9003	Water Heating	Kitchen Faucet Aerator	Single Family Income Eligible	SF	Retrofit	2,955	4%	111	0.01	10	\$11	100%	68%	Kitch-2	40%	54%	3.9	5.8	11.3
9004	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	2,955	2%	47	0.00	10	\$11	100%	29%	Kitch-2	40%	54%	1.7	5.8	4.7
9005	Water Heating	Kitchen Faucet Aerator	Multifamily Market Rate	MF	Retrofit	2,955	4%	110	0.01	10	\$11	100%	100%	Kitch-3	22%	48%	3.1	3.1	9.4
9006	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	2,955	2%	47	0.00	10	\$11	100%	29%	Kitch-3	22%	48%	1.7	5.8	4.7
9007	Water Heating	Kitchen Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	2,955	4%	111	0.01	10	\$8	100%	100%	Kitch-4	40%	60%	1.0	1.0	3.7
9008	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	2,955	2%	47	0.00	10	\$8	100%	41%	Kitch-4	40%	60%	2.3	5.8	6.7
9009	Water Heating	Bathroom Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	2,955	1%	18	0.00	10	\$11	100%	27%	Bath-1	280%	63%	0.6	2.3	2.0
9010	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	2,955	1%	18	0.00	10	\$11	100%	29%	Bath-1	280%	63%	0.6	2.2	2.0
9011	Water Heating	Bathroom Faucet Aerator	Single Family Income Eligible	SF	Retrofit	2,955	1%	35	0.00	10	\$11	100%	55%	Bath-2	165%	54%	1.2	2.3	3.9
9012	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	2,955	1%	35	0.00	10	\$11	100%	29%	Bath-2	165%	54%	1.2	4.3	3.6
9013	Water Heating	Bathroom Faucet Aerator	Multifamily Market Rate	MF	Retrofit	2,955	2%	71	0.01	10	\$11	100%	57%	Bath-3	31%	78%	2.5	4.5	7.4
9014	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	2,955	2%	71	0.01	10	\$11	100%	29%	Bath-3	31%	78%	2.5	8.8	7.1
9015	Water Heating	Bathroom Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	2,955	1%	35	0.00	10	\$8	100%	78%	Bath-4	45%	60%	1.8	2.3	5.5
9016	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	2,955	1%	35	0.00	10	\$8	100%	41%	Bath-4	45%	60%	1.8	4.3	5.2
9017	Water Heating	Low Flow Showerhead	Energy Efficiency Kits	SF	Retrofit	2,955	3%	79	0.01	10	\$7	100%	93%	LFSH-1	194%	64%	4.6	4.9	13.2
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	2,955	3%	79	0.01	10	\$7	100%	93%	LFSH-1	194%	64%	4.6	4.9	13.2
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	2,955	7%	195	0.02	10	\$15	100%	100%	LFSH-2	138%	57%	3.3	3.3	10.0
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	2,955	3%	79	0.01	10	\$7	100%	93%	LFSH-2	138%	57%	4.6	4.9	13.2
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	2,955	14%	405	0.04	10	\$7	100%	100%	LFSH-3	31%	68%	5.6	5.6	16.1
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	2,955	3%	79	0.01	10	\$7	100%	93%	LFSH-3	31%	68%	4.6	4.9	13.2
9023	Water Heating	Low Flow Showerhead	Multifamily Income Eligible	MF	Retrofit	2,955	8%	233	0.02	10	\$23	100%	100%	LFSH-4	43%	63%	1.0	1.0	3.7
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	2,955	3%	79	0.01	10	\$7	100%	93%	LFSH-4	43%	63%	4.6	4.9	13.2

Appendix B: Residential Measure Assumptions

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	TRC Score	UCT Score	Participant Test Score
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	2,955	1%	42	0.00	10	\$50	100%	20%	TRSV-1	194%	8%	0.3	1.7	1.1
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	2,955	1%	42	0.00	10	\$50	100%	20%	TRSV-2	138%	8%	0.3	1.7	1.1
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	2,955	2%	47	0.00	10	\$50	100%	20%	TRSV-3	31%	8%	0.4	1.9	1.2
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	2,955	2%	47	0.00	10	\$50	100%	20%	TRSV-4	43%	8%	0.4	1.9	1.2
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	2,955	0%	9	0.00	12	\$9	100%	15%	PIPE-1	29%	32%	0.5	3.2	1.4
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	2,955	0%	9	0.00	12	\$9	100%	69%	PIPE-2	40%	18%	0.5	0.7	2.0
9031	Water Heating	Pipe Insulation	PAYS	MF	Retrofit	2,955	0%	9	0.00	12	\$9	100%	15%	PIPE-3	22%	18%	0.5	3.2	1.4
9032	Water Heating	Pipe Insulation	Multifamily Income Eligible	MF	Retrofit	2,955	0%	9	0.00	12	\$9	100%	22%	PIPE-4	40%	30%	0.5	2.1	1.5
9033	Water Heating	Water Heater Wrap	Energy Efficiency Kits	SF	Retrofit	2,955	3%	101	0.01	12	\$58	100%	83%	WRAP-1	29%	10%	0.8	1.0	3.0
9034	Water Heating	Water Heater Wrap	Single Family Income Eligible	SF	Retrofit	2,955	3%	101	0.01	12	\$58	100%	91%	WRAP-2	40%	3%	0.8	0.9	3.1
9035	Water Heating	Water Heater Wrap	Energy Efficiency Kits	MF	Retrofit	2,955	3%	101	0.01	12	\$58	100%	83%	WRAP-3	22%	0%	0.8	1.0	3.0
9036	Water Heating	Water Heater Wrap	Multifamily Income Eligible	MF	Retrofit	2,955	3%	101	0.01	12	\$58	100%	69%	WRAP-4	40%	0%	0.8	1.2	2.9
9037	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-1	29%	2%	5.3	2.1	9.5
9038	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-2	40%	1%	5.3	2.1	9.5
9039	Water Heating	Heat Pump Hot Water Heater	Single Family Income Eligible	SF	MO	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-2	40%	1%	5.3	2.1	9.5
9040	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	NC	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-3	29%	0%	5.3	2.1	9.5
9041	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-4	22%	0%	5.3	2.1	9.5
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-5	22%	0%	5.3	2.1	9.5
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	2,955	77%	2,276	0.20	13	\$588	100%	100%	WH-5	40%	1%	3.4	1.2	6.5
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	2,955	77%	2,276	0.20	13	\$588	100%	94%	WH-6	22%	0%	5.3	2.1	9.5
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-1	29%	2%	0.1	0.1	1.1
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-2	40%	1%	0.1	0.1	1.1
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-3	29%	0%	0.1	0.1	1.1
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-4	22%	0%	0.1	0.1	1.1
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-5	40%	1%	0.1	0.1	1.1
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	2,955	5%	142	0.00	20	\$1,080	100%	84%	WH-6	22%	0%	0.1	0.1	1.1
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	2,955	17%	491	0.05	30	\$742	100%	84%	DRAIN-1	29%	0%	0.6	0.7	2.3
9052	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	2,955	17%	491	0.05	30	\$742	100%	84%	DRAIN-2	40%	0%	0.6	0.7	2.3
9053	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	NC	2,955	17%	491	0.05	30	\$742	100%	84%	DRAIN-3	29%	0%	0.6	0.7	2.3
9054	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	2,955	14%	403	0.04	30	\$742	100%	84%	DRAIN-4	22%	0%	0.5	0.6	2.1
9055	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	2,955	14%	403	0.04	30	\$742	100%	84%	DRAIN-5	40%	0%	0.5	0.6	2.1
9056	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	NC	2,955	14%	403	0.04	30	\$742	100%	84%	DRAIN-6	22%	0%	0.5	0.6	2.1
9057	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	2,955	3%	82	0.01	2	\$5	100%	83%	WHTS-1	29%	0%	1.5	1.8	5.0
9058	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	2,955	3%	82	0.01	2	\$5	100%	83%	WHTS-2	40%	0%	1.5	1.8	5.0
9059	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	2,955	3%	82	0.01	2	\$5	100%	83%	WHTS-3	22%	0%	1.5	1.8	5.0
9060	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	2,955	3%	82	0.01	2	\$5	100%	83%	WHTS-4	40%	0%	1.5	1.8	5.0
10001	New Construction	Zero Energy Ready Home	New Construction	SF	NC	14,064	26%	3,663	1.71	20	\$2,000	100%	100%	NC-1	100%	0%	2.6	2.6	4.3
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	14,064	26%	3,663	1.71	20	\$2,000	100%	100%	NC-2	100%	0%	2.6	2.6	4.3
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	7,601	20%	1,554	0.72	20	\$1,216	100%	86%	NC-1	100%	0%	1.8	2.1	3.1
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	7,601	20%	1,554	0.72	20	\$1,216	100%	86%	NC-2	100%	0%	1.8	2.1	c



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1072	Appliances	Heat Pump Dryer	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1073	Appliances	Heat Pump Dryer	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	Behavior	Home Energy Report	No program	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Behavior	Home Energy Report	No program	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	Behavior	Home Energy Report	No program	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	Behavior	Home Energy Report	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	Behavior	Home Energy Report	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	Behavior	Home Energy Report	No program	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	520	773	852	906	988	1,655	2,111	2,404	2,622	2,779	3,373	3,661	3,722	3,672	3,567	3,916	4,018	3,937	3,794	3,629
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	285	424	467	496	542	907	1,157	1,317	1,437	1,523	1,848	2,006	2,040	2,012	1,955	2,146	2,202	2,158	2,079	1,988
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	5	7	9	11	14	38	52	65	76	87	148	171	186	189	195	271	287	356	298	296
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	Behavior	AMI Data Portal	No program	SF	MO	478	649	874	1,167	1,539	1,999	2,552	3,189	3,889	4,615	5,331	5,996	6,590	7,087	7,489	7,803	8,042	8,210	8,330	8,414
2014	Behavior	AMI Data Portal	No program	SF	MO	262	356	479	639	843	1,095	1,399	1,748	2,131	2,529	2,921	3,286	3,611	3,883	4,104	4,276	4,407	4,499	4,565	4,611
2015	Behavior	AMI Data Portal	No program	SF	NC	2	5	10	17	28	43	65	93	129	169	213	258	303	345	384	421	455	512	548	582
2016	Behavior	AMI Data Portal	No program	MF	MO	52	70	95	126	166	216	276	345	420	499	576	648	712	766	810	844	869	888	901	910
2017	Behavior	AMI Data Portal	No program	MF	MO	85	115	155	206	272	353	451	564	687	816	942	1,060	1,165	1,253	1,324	1,379	1,421	1,451	1,472	1,487
2018	Behavior	AMI Data Portal	No program	MF	NC	0	1	2	3	5	8	12	17	24	31	39	48	56	63	71	77	84	94	101	107
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	125	131	129	121	107	90	74	58	45	34	25	18	0	0	0	104	109	108	102	91
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	39	46	53	58	61	60	56	50	42	34	27	21	16	12	9	32	39	45	49	51
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	42	62	68	72	78	96	115	132	145	151	149	139	124	105	86	98	97	88	81	78
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	208	217	214	200	178	150	123	97	74	56	41	30	0	0	173	181	181	179	169	151
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	70	83	95	105	109	107	100	89	76	62	49	37	28	21	15	58	69	80	88	92
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	20	24	28	31	32	31	29	26	22	18	14	11	8	6	4	17	20	23	26	27
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	16	17	17	15	14	12	9	7	6	4	3	2	0	0	0	13	14	14	13	12
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	3	4	4	5	5	5	5	4	3	3	2	2	1	1	1	3	3	4	4	4
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	7	11	12	12	13	17	20	23	25	26	26	24	21	18	15	17	17	15	14	14
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	27	28	27	26	23	19	16	12	10	7	5	4	0	0	22	23	23	22	19	19
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	6	7	8	8	9	9	8	7	6	5	4	3	2	2	1	5	6	6	7	7
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	2	2	2	2	3	3	2	2	2	1	1	1	1	0	1	2	2	2	2	2
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	39	40	40	37	33	28	23	18	14	10	8	6	0	0	32	34	33	31	28	
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	4	5	6	6	6	6	5	4	4	3	2	2	1	1	3	4	5	5	5	
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3036	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	1	1	2	2	2	2	2	2	1	1	1	1	0	0	1	1	1	1	2	2
3037	Building Shell	Ceiling Insulation R11-R49 electric furnace base	PAYS	SF	Retrofit	16	23	25	27	29	36	43	49	54	56	55	52	46	39	32	25	20	15	11	8
3038	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	93	97	95	89	79	67	54	43	33	25	18	13	0	0	0	0	0	0	0	0
3039	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	30	28	25	21	17	14	10	8	6	4	0	0	0	0	0	0	0	0	0	0
3040	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	52	62	72	79	82	80	75	67	57	46	36	28	21	16	12	0	0	0	0	0

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3041	Building Shell	Ceiling Insulation R5-R30 electric furnace base	PAYS	SF	Retrofit	61	90	99	104	113	139	167	192	210	219	216	202	180	153	125	99	77	58	43	32	
3042	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Single Family Income Eligible	SF	Retrofit	362	377	372	348	308	261	213	168	129	97	72	53	0	0	0	0	0	0	0	0	0
3043	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Market Rate	MF	Retrofit	118	110	98	83	68	53	41	31	23	17	0	0	0	0	0	0	0	0	0	0	0
3044	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Income Eligible	MF	Retrofit	204	244	280	307	319	314	294	261	222	181	142	109	82	61	45	0	0	0	0	0	0
3045	Building Shell	Ceiling Insulation R5-R38 electric furnace base	PAYS	SF	Retrofit	51	75	82	87	94	116	139	159	175	182	179	168	149	127	104	82	64	48	36	26	
3046	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Single Family Income Eligible	SF	Retrofit	300	313	309	289	256	217	177	139	107	81	60	44	0	0	0	0	0	0	0	0	0
3047	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Market Rate	MF	Retrofit	98	92	81	69	56	44	34	26	19	14	0	0	0	0	0	0	0	0	0	0	0
3048	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Income Eligible	MF	Retrofit	169	202	232	255	265	261	244	217	184	150	118	91	68	51	37	0	0	0	0	0	0
3049	Building Shell	Ceiling Insulation R5-R49 electric furnace base	PAYS	SF	Retrofit	38	56	61	65	70	87	104	119	131	136	134	125	112	95	78	62	48	36	27	20	
3050	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	237	247	244	228	202	171	139	110	84	63	47	34	0	0	0	0	0	0	0	0	0
3051	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	77	72	64	54	44	35	27	20	15	11	0	0	0	0	0	0	0	0	0	0	0
3052	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	134	160	183	201	209	206	192	171	145	118	93	72	54	40	29	0	0	0	0	0	0
3053	Building Shell	Ceiling Insulation R5-R60 electric furnace base	PAYS	SF	Retrofit	27	41	44	47	51	63	75	86	95	99	97	91	81	69	56	45	34	26	19	14	
3054	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Single Family Income Eligible	SF	Retrofit	202	210	207	194	172	145	119	94	72	54	40	29	0	0	0	0	0	0	0	0	0
3055	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Market Rate	MF	Retrofit	66	61	55	46	38	30	23	17	13	9	0	0	0	0	0	0	0	0	0	0	0
3056	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Income Eligible	MF	Retrofit	114	136	156	171	178	175	164	145	123	101	79	61	46	34	25	0	0	0	0	0	0
3057	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3058	Building Shell	Ceiling Insulation R11-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	9	9	9	9	8	7	5	4	3	2	2	1	0	0	0	0	0	0	0	0	0
3059	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3060	Building Shell	Ceiling Insulation R11-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	3	4	4	5	5	5	4	3	3	2	2	1	1	1	0	0	0	0	0	0	0
3061	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	SF	Retrofit	10	15	17	18	19	24	28	33	36	37	37	34	31	26	21	17	13	10	7	5	5
3062	Building Shell	Ceiling Insulation R5-R30 heat pump base	Single Family Income Eligible	SF	Retrofit	33	34	34	31	28	24	19	15	12	9	6	5	0	0	0	0	0	0	0	0	0
3063	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	MF	Retrofit	5	7	8	8	9	11	13	15	16	17	16	15	14	12	10	8	6	4	3	2	2
3064	Building Shell	Ceiling Insulation R5-R30 heat pump base	Multifamily Income Eligible	MF	Retrofit	12	14	16	18	18	17	15	13	10	8	6	5	3	3	0	0	0	0	0	0	0
3065	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	SF	Retrofit	9	13	14	15	16	20	24	28	30	32	31	29	26	22	18	14	11	8	6	5	5
3066	Building Shell	Ceiling Insulation R5-R38 heat pump base	Single Family Income Eligible	SF	Retrofit	28	29	28	26	23	20	16	13	10	7	5	4	0	0	0	0	0	0	0	0	0
3067	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	MF	Retrofit	4	6	6	7	7	9	11	12	14	14	14	13	12	10	8	6	5	4	3	2	2
3068	Building Shell	Ceiling Insulation R5-R38 heat pump base	Multifamily Income Eligible	MF	Retrofit	10	12	13	15	15	15	14	13	11	9	7	5	4	3	2	0	0	0	0	0	0
3069	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	SF	Retrofit	7	10	11	11	12	15	18	21	23	24	24	22	20	17	14	11	8	6	5	3	3
3070	Building Shell	Ceiling Insulation R5-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	22	23	23	21	19	16	13	10	8	6	4	3	0	0	0	0	0	0	0	0	0
3071	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	MF	Retrofit	3	4	5	5	5	7	8	9	10	10	10	8	7	6	5	4	3	2	1	1	1
3072	Building Shell	Ceiling Insulation R5-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	8	9	11	12	12	12	11	10	9	7	6	4	3	2	2	0	0	0	0	0	0
3073	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3074	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	19	20	20	19	17	14	11	9	7	5	4	3	0	0	0	0	0	0	0	0	0
3075	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3076	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	7	8	10	10	11	11	10	9	8	6	5	4	3	2	2	0	0	0	0	0	0
3077	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3078	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3079	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3080	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3081	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3082	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	93	97	96	90	80	67	55	43	33	25	19	14	0	0	0	0	0	0	0	0	0
3083	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	45	42	37	32	26	20	15	12	9	6	0	0	0	0	0	0	0	0	0	0	0
3084	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	17	20	23	25	26	26	24	21	18	15	12	9	7	5	4	0	0	0	0	0	0
3085	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3086	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	88	92	91	85	75	64	52	41	31	24	18	13	0	0	0	0	0	0	0	0	0
3087	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	39	36	32	27	22	17	13	10	7	5	0	0	0	0	0	0	0	0	0	0	0
3088	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	16	19	22	24	25	24	23	20	17	14	11	8	6	5	3	0	0	0	0	0	0
3089	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3090	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3091	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3092	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3093	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3094	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3095	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3096	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3097	Building Shell	Duct Insulation - electric furnace base	PAYS	SF	Retrofit	116	171	188	199	216	266	318	365	400	417	411	385	343	291	238	189	146	110	82	60
3098	Building Shell	Duct Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	1,117	1,164	1,149	1,073	952	805	657	518	398	299	222	162	0	0	0	0	0	0	0	0
3099	Building Shell	Duct Insulation - electric furnace base	PAYS	MF	Retrofit	18	27	29	31	34	41	49	57	62	65	64	60	53	45	37	29	23	17	13	9
3100	Building Shell	Duct Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	2,309	1,959	1,597	1,258	964	723	536	392	0	0	0	0	0	0	0	0	0	0	0	0
3101	Building Shell	Duct Insulation - heat pump base	PAYS	SF	Retrofit	12	19	20	21	23	29	34	39	43	45	44	42	37	31	26	20	16	12	9	7
3102	Building Shell	Duct Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	89	93	92	86	76	64	52	41	32	24	18	13	0	0	0	0	0	0	0	0
3103	Building Shell	Duct Insulation - heat pump base	PAYS	MF	Retrofit	2	3	4	4	4	5	6	7	7	8	8	7	6	5	4	4	3	2	2	1
3104	Building Shell	Duct Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	137	108	83	63	46	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3105	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	34	51	56	59	64	79	94	108	118	123	122	114	101	86	70	56	43	33	24	18
3106	Building Shell	Duct Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3107	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	1	2	2	2	2	3	4	4	5	5	5	4	4	3	3	2	2	1	1	1
3108	Building Shell	Duct Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	10	12	14	16	16	16	15	13	11	9	7	6	4	3	2	0	0	0	0	0
3109	Building Shell	Duct Sealing - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3110	Building Shell	Duct Sealing - electric furnace base	Single Family Income Eligible	SF	Retrofit	192	200	197	184	163	138	113	89	68	51	38	28	0	0	0	0	0	0	0	0
3111	Building Shell	Duct Sealing - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3112	Building Shell	Duct Sealing - electric furnace base	Multifamily Income Eligible	MF	Retrofit	668	567	462	364	279	209	155	114	0	0	0	0	0	0	0	0	0	0	0	0
3113	Building Shell	Duct Sealing - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3114	Building Shell	Duct Sealing - heat pump base	Single Family Income Eligible	SF	Retrofit	15	16	16	15	13	11	9	7	5	4	3	2	0	0	0	0	0	0	0	0
3115	Building Shell	Duct Sealing - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3116	Building Shell	Duct Sealing - heat pump base	Multifamily Income Eligible	MF	Retrofit	42	36	29	23	17	13	10	7	0	0	0	0	0	0	0	0	0	0	0	0
3117	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3118	Building Shell	Duct Sealing - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3119	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3120	Building Shell	Duct Sealing - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3121	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	SF	Retrofit	57	84	92	98	106	130	156	179	197	205	202	189	168	143	117	93	72	54	40	30
3122	Building Shell	Floor Insulation (R4 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	254	265	262	245	217	183	150	118	91	68	51	37	0	0	0	0	0	0	0	0
3123	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	MF	Retrofit	6	8	9	10	11	13	16	18	20	21	20	19	17	14	12	9	7	5	4	3
3124	Building Shell	Floor Insulation (R4 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	7	8	9	10	10	10	10	8	7	6	5	4	3	2	1	0	0	0	0	0
3125	Building Shell	Floor Insulation (R4 base) - heat pump base	PAYS	SF	Retrofit	7	10	11	11	12	15	18	21	23	24	24	22	20	17	14	11	8	6	5	3
3126	Building Shell	Floor Insulation (R4 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	22	23	23	21	19	16	13	10	8	6	4	3	0	0	0	0	0	0	0	0
3127	Building Shell	Floor Insulation (R4 base) - heat pump base	PAYS	MF	Retrofit	1	1	1	1	1	2	2	2	3	3	2	2	2	2	1	1	1	1	1	0
3128	Building Shell	Floor Insulation (R4 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
3129	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3130	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3131	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3132	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3133	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3134	Building Shell	Floor Insulation (R13 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3135	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3136	Building Shell	Floor Insulation (R13 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3137	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3138	Building Shell	Floor Insulation (R13 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3141	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3149	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	SF	Retrofit	126	187	205	217	235	290	347	398	437	455	449	420	374	318	260	206	159	120	89	66	
3150	Building Shell	Basement Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	434	476	504	547	675	804	924	1,014	1,057	1,042	975	866	736	601	476	367	278	207	152	0	
3151	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	MF	Retrofit	23	35	38	40	43	53	64	73	81	84	83	77	69	59	48	38	29	22	17	12	
3152	Building Shell	Basement Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	102	121	140	153	159	156	146	130	110	90	71	54	41	31	22	0	0	0	0	0	
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	8	11	13	13	14	18	21	24	27	28	27	26	23	19	16	13	10	7	5	4	
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	20	22	23	25	30	36	42	46	48	47	44	39	33	27	22	17	13	9	7	0	
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	1	2	2	2	2	3	3	4	4	4	4	4	3	3	2	2	1	1	1	1	
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	3	3	3	4	4	4	4	3	3	2	2	1	1	1	1	0	0	0	0	0	
3157	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3158	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3159	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3160	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3161	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	SF	Retrofit	8	12	13	13	15	18	22	25	27	28	28	26	23	20	16	13	10	7	6	4	
3162	Building Shell	Foundation Sidewall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	49	54	57	62	76	91	104	115	119	118	110	98	83	68	54	42	31	23	17	0	
3163	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	MF	Retrofit	3	4	5	5	6	7	8	9	10	11	11	10	9	8	6	5	4	3	2	2	
3164	Building Shell	Foundation Sidewall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	4	5	5	6	6	6	6	5	4	3	3	2	2	1	1	0	0	0	0	0	
3165	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	SF	Retrofit	0	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	0	0	0	
3166	Building Shell	Foundation Sidewall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	2	2	3	3	3	4	5	5	5	5	5	4	4	3	2	2	1	1	1	0	
3167	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	
3168	Building Shell	Foundation Sidewall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3169	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3170	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3171	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3172	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3173	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3174	Building Shell	Insulated Cellular Shades - electric furnace base	Single Family Income Eligible	SF	Retrofit	1,143	969	790	622	477	358	265	194	0	0	0	0	0	0	0	947	808	661	524	405	
3175	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3176	Building Shell	Insulated Cellular Shades - electric furnace base	Multifamily Income Eligible	MF	Retrofit	447	343	258	191	139	0	0	0	0	0	0	0	0	0	370	286	216	161	118		
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3181	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3182	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	242	205	167	132	101	76	56	41	0	0	0	0	0	0	201	171	140	111	86		
3183	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3184	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	43	33	25	18	13	0	0	0	0	0	0	0	0	0	36	27	21	15	11		
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	659	975	1,070	1,130	1,226	1,510	1,806	2,075	2,277	2,371	2,340	2,188	1,949	1,657	1,355	1,073	829	626	466	343	
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	1,202	1,252	1,236	1,155	1,024	866	707	558	428	322	239	174	0	0	0	0	0	0	0	0	0
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	209	310	340	359	390	480	574	660	724	753	744	695	619	526	431	341	263	199	148	109	
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	2,540	2,375	2,111	1,788	1,455	1,145	880	662	490	359	0	0	0	0	0	0	0	0	0	0	0
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	124	129	127	119	105	89	73	57	44	33	25	18	0	0	0	0	0	0	0	0	
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	165	155	137	116	95	75	57	43	32	23	0	0	0	0	0	0	0	0	0	0	
3193	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3194	Building Shell	Storm Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	262	273	269	251	223	189	154	121	93	70	52	38	0	0	0	0	0	0	0	0
3195	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3196	Building Shell	Storm Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	174	163	145	123	100	78	60	45	34	25	0	0	0	0	0	0	0	0	0	0
3197	Building Shell	Wall Insulation - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3198	Building Shell	Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3199	Building Shell	Wall Insulation - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3200	Building Shell	Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	55	65	75	82	85	84	79	70	59	48	38	29	22	16	12	0	0	0	0	0
3201	Building Shell	Wall Insulation - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3202	Building Shell	Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3203	Building Shell	Wall Insulation - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3204	Building Shell	Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3205	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3206	Building Shell	Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3207	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3208	Building Shell	Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3209	Building Shell	Thin Triple Windows - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3217	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3218	Building Shell	Thin Triple Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3219	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3220	Building Shell	Thin Triple Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	260	285	302	328	404	482	554	607	633	625	584	519	441	360	285	220	166	124	91	0
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	66	79	90	99	103	101	95	84	71	58	46	35	27	20	14	0	0	0	0	0
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	21	23	24	26	32	38	44	49	51	50	47	41	35	29	23	18	13	10	7	0
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3228	Building Shell	Advanced Walls - heat pump base	Multifamily Income Eligible	MF	Retrofit	7	9	10	11	11	11	10	9	8	6	5	4	3	2	2	0	0	0	0	0
3229	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3230	Building Shell	Advanced Walls - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	55	60	64	69	86	102	117	129	134	132	124	110	93	76	60	47	35	26	19	0
3231	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3232	Building Shell	Advanced Walls - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3233	Building Shell	Cool Roof	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3234	Building Shell	Cool Roof	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3235	Building Shell	Cool Roof	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3236	Building Shell	Cool Roof	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3237	Building Shell	Shade Trees	No program	SF	Retrofit	126	134	145	179	214	245	269	280	277	259	230	195	159	126	97	73	55	40	0	0
3238	Building Shell	Shade Trees	No program	SF	Retrofit	69	73	80	98	117	134	147	153	152	142	126	107	87	69	53	40	30	22	0	0
3239	Building Shell	Shade Trees	No program	MF	Retrofit	9	10	11	13	16	18	20	21	21	19	17	15	12	9	7	5	4	3	0	0
3240	Building Shell	Shade Trees	No program	MF	Retrofit	15	16	18	22	26	30	33	34	34	32	28	24	20	15	12	9	7	5	0	0
4001	Custom	MFMR Custom	Multifamily Market Rate	MF	Retrofit	459	435	391	336	278	222	173	132	99	73	0	0	0	0	0	0	0	0	0	431
4002	Custom	MFLI Custom	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5001	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	822	957	1,063	1,122	1,122	1,063	957	822	679	543	1,130	1,146	1,157	1,145	966	915	824	708	585	467
5002	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	550	521	469	403	333	266	207	158	118	88	473	448	404	347	286	229	178	136	102	76
5003	Electronics	Advanced Tier 2 Power Strips	Single Family Income Eligible	SF	Retrofit	266	240	206	170	136	106	81	60	45	0	266	240	206	170	136	106	81	60	45	0
5004	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	NC	5	7	10	13	17	23	31	40	48	54	118	136	145	146	155	164	176	268	205	202
5005	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	244	231	208	179	148	118	92	70	52	39	210	199	179	154	127	101	79	60	45	33
5006	Electronics	Advanced Tier 2 Power Strips	Multifamily Market Rate	MF	Retrofit	1,506	0	0	0	0	0	0	0	0	0	1,416	0	0	0	0	0	0	0	0	0
5007	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	25	25	24	21	18	15	12	9	7	5	26	22	20	18	16	13	10	8	6	5
5008	Electronics	Advanced Tier 2 Power Strips	Multifamily Income Eligible	MF	Retrofit	550	440	342	261	196	145	0	0	0	550	440	342	261	196	145	0	0	0	0	0
5009	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	NC	2	2	3	4	5	8	10	13	16	18	39	45	48	48	51	54	58	89	68	67
5010	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	153	145	131	112	93	74	58	44	33	24	132	125	112	97	80	64	50	38	28	21
5011	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	139	132	119	102	84	67	52	40	30	22	109	104	93	80	66	53	41	31	24	17
5012	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	18	27	30	32	35	44	53	62	69	73	88	92	88	81	74	73	73	74	74	74



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
5013	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	89	74	59	46	35	26	19	0	0	0	77	63	51	39	30	23	17	0	0	0	
5014	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	81	67	54	42	32	24	18	0	0	0	64	53	42	33	25	19	14	0	0	0	
5015	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	7	11	12	13	14	18	21	25	28	29	35	37	35	32	30	29	29	30	30	29	
5016	Electronics	Advanced Tier 1 Power Strips	Single Family Income Eligible	SF	Retrofit	7	8	8	9	12	14	16	18	19	19	25	24	23	21	21	21	22	22	22	19	
5017	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	NC	1	1	1	1	2	3	4	5	6	6	14	16	17	17	18	19	21	31	24	24	
5018	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	38	35	30	25	20	15	12	9	6	0	33	30	26	21	17	13	10	8	6	0	
5019	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	35	31	27	22	18	14	11	8	6	0	27	25	21	18	14	11	8	6	5	0	
5020	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	4	6	7	7	8	10	12	14	15	16	19	20	19	18	16	16	16	16	16	16	
5021	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	10	10	9	7	6	5	4	3	2	2	9	8	7	6	5	4	3	2	2	1	
5022	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	9	9	8	7	6	4	3	3	2	1	7	7	6	5	4	3	3	2	2	1	
5023	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	1	2	2	2	2	3	3	4	5	5	6	6	6	5	5	5	5	5	5	5	
5024	Electronics	Advanced Tier 1 Power Strips	Multifamily Income Eligible	MF	Retrofit	105	82	62	47	35	0	0	0	0	0	105	82	62	47	35	0	0	0	0	0	
5025	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	NC	0	0	0	1	1	1	2	2	2	3	6	7	7	8	8	9	13	10	10	10	
5026	Electronics	ENERGY STAR TV	No program	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5027	Electronics	ENERGY STAR TV	No program	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5028	Electronics	ENERGY STAR TV	No program	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5029	Electronics	ENERGY STAR TV	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5030	Electronics	ENERGY STAR TV	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5031	Electronics	ENERGY STAR TV	No program	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5032	Electronics	Smart Plug	No program	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5033	Electronics	Smart Plug	No program	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5034	Electronics	Smart Plug	No program	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5035	Electronics	Smart Plug	No program	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5036	Electronics	Smart Plug	No program	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5037	Electronics	Smart Plug	No program	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6001	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	146	148	149	149	149	149	148	148	148	148	148	148	148	147	147	147	147	147	147	147	
6002	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6
6003	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6
6004	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	77	79	81	82	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83
6005	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6006	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
6007	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	41	44	46	47	48	49	50	49	49	49	49	49	49	49	49	49	49	49	49	49	49
6008	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6009	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
6010	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	50	53	55	57	58	59	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
6011	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6
6012	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
6013	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	132	134	136	135	135	135	135	134	134	134	134	134	134	134	134	134	134	134	134	134	134
6014	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
6015	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	14	14
6016	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	61	63	64	65	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
6017	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7
6018	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	6
6019	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	29	30	32	33	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
6020	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5
6021	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
6022	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	31	32	33	34	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
6023	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5
6024	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
6025	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	119	121	122	122	122	122	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121
6026	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
6027	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	22	22
6028	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	59	61	62	63	64	64	64	64	64	63	63	63	63	63	63	63	63	63	63	63	63
6029	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	11	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12
6030	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11	11
6031	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	34	36	37	38	39	40	41	41	40	40	40	40	40	40	40	40	40	40	40	40	40
6032	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8
6033	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7	7
6034	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	46	49	51	53	54	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
6035	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6036	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9
6037	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	126	128	130	129	129	129	129	128	128	128	128	128	128	128	128	128	128	128	128	128	128
6038	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	32	32	33	33	33	33	33	32	32	32	32	32	32	32	32	32
6039	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	32	32
6040	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	64	66																			

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6047	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	11	12	12	13	13	14	14	14	14	14	14	14	14	14
6048	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	12
6049	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	153	156	157	157	157	156	156	156	156	156	155	155	155	155	155	155	155	155	155	155
6050	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	37	37	38	38	38	38	38	38	38	38	38	38	38	38
6051	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	37
6052	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	74	75	76	77	77	77	77	77	77	77	77	77	77	76	76	76	76	76	76	76
6053	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	18	18	18	19	19	19	18	18	18	18	18	18	18	18
6054	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	18
6055	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	29	31	33	34	35	35	36	35	35	35	35	35	35	35	35	35	35	35	35	35
6056	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	7	7	7	8	8	8	8	8	8	8	8	8	8	8
6057	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7
6058	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	42	44	46	48	49	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
6059	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	9	10	10	11	11	11	11	11	11	11	11	11	11	11
6060	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	10
6061	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	122	125	127	128	128	128	128	127	127	127	127	127	127	127	127	127	127	127	127	127
6062	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	33	34	34	35	35	35	35	35	35	35	35	35	35	35
6063	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	34
6064	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	72	75	77	79	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81
6065	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	19	20	21	21	22	22	22	22	22	22	22	22	22	22
6066	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	20
6067	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER1	25	27	28	29	30	30	31	31	31	31	31	31	30	30	30	30	30	30	30	30
6068	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	6	6	7	7	7	7	7	7	7	7	7	7	7	
6069	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
6070	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER1	37	40	42	44	46	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48
6071	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	9	9	10	10	11	11	11	11	11	11	11	11	11	11
6072	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
6073	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER1	134	136	137	137	137	137	136	136	136	136	136	136	136	136	135	135	135	135	135	135
6074	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	43	44	44	44	44	44	44	44	44	44	44	44	44	44
6075	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43
6076	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER1	70	72	74	75	76	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
6077	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	22	23	24	24	24	24	24	24	24	24	24	24	24	24
6078	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	23
6079	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	26	28	29	30	31	31	32	32	32	32	32	32	31	31	31	31	31	31	31	31
6080	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	6	7	7	7	8	8	8	8	8	8	8	8	8	8
6081	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7
6082	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	38	40	42	44	45	45	46	46	46	46	46	46	46	46	46	46	46	46	46	46
6083	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	9	10	10	11	11	11	11	11	11	11	11	11	11	11
6084	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	10
6085	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6086	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6087	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	NC	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
6088	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6089	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6090	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6091	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	20	21	21	21	17	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6092	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	12	13	13	13	14	14	11	11	11	11	10	10	10	10	10	10	10	10	10	10
6093	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	NC	1	1	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	6	7	8
6094	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
6095	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	4	4	4	4	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	4
6096	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	NC	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
6097	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	25	26	26	27	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
6098	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	15	16	16	17	17	17	14	13	13	13	13	13	13	13	13	13	13	13	13	13
6099	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	NC	1	2	2	2	3	3	4	4	4	4	4	4	3	3	3	3	3	7	9	9
6100	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	8	8	9	9	9	9	10	8	8	7	7	7	7	7	7	7	7	7	7	7
6101	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	12	12	13	14	14	15	15	15	12	12	12	12	12	11	11	11	11	11	11	11
6102	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	NC	1	1	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	5	6	6
6103	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	41	42	43	44	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
6104	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	25	26	27	27	28	28	22	22	22	22	21	21	21	21	21	21	21	21	21	21
6105	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	4	4	5	6	7	7	7	6	6	6	6	6	6	6	12	15	15
6106	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	8	9	9	9	10	10	8	8	8	7	7	7	7	7	7	7	7	7	7	7
6107	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	12	13	13	14	14	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12
6108	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	NC	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	2	2	5	6	6
6109	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	44	45	46	46	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35
6110	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	26	28	29	29	30	30	24	23	23	23	23	23	23	23	23	23	23	23	23	23
6111	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	NC	2	3	4	4																

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6118	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	8	9	9	9	9	10	10	8	8	8	8	7	7	7	7	7	7	7	7	7
6119	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	12	13	13	14	15	15	15	15	13	12	12	12	12	12	12	12	12	12	12	12
6120	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	NC	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	2	2	5	6	6
6121	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	68	70	71	71	55	55	54	54	54	54	54	54	54	54	54	54	54	54	54	54
6122	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	41	43	44	45	46	46	36	36	36	35	35	35	35	35	35	35	35	35	35	35
6123	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	NC	4	5	6	6	7	9	10	11	12	11	11	11	10	9	9	9	9	20	24	25
6124	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	8	9	9	9	9	10	10	8	8	8	7	7	7	7	7	7	7	7	7	7
6125	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	12	13	13	14	14	15	15	15	12	12	12	12	12	12	12	12	12	12	12	12
6126	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	NC	1	1	1	2	2	2	3	3	3	3	3	3	2	2	2	2	2	5	6	6
6127	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	458	575	705	841	978	1,106	1,222	1,321	1,402	1,467	1,517	1,556	1,584	1,605	1,605	1,605	1,605	1,605	1,605	1,605
6128	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	371	467	573	685	797	903	998	1,080	1,147	1,202	1,244	1,276	1,300	1,318
6129	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	210	264	323	386	449	508	561	606	644	673	696	714	727	737	737	737	737	737	737	737
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	170	214	263	314	366	414	458	496	527	557	581	586	597	605
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	213
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	7	9	12	16	21	27	34	41	49	57	65	72	78	83	87	90	92	94	95	95
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	5	7	10	13	17	22	28	34	40	47	53	59	64	68
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	7
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6137	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6138	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6139	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	857	969	1,069	1,154	1,224	1,280	1,323	1,355	1,379	1,397	1,396	1,395	1,394	1,393	1,393	1,393	1,393	1,393	1,393	1,393
6140	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	0	694	786	868	939	997	1,044	1,080	1,107	1,128	1,143	1,143	1,143	1,143
6141	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	690	782
6142	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	77	97	119	142	165	187	206	223	236	247	256	262	267	271	271	271	271	271	271	271
6143	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	63	79	97	115	134	152	168	182	193	202	210	215	219	222
6144	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	78
6145	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	205	263	331	405	484	563	637	704	761	808	845	874	897	913	926	926	926	926	926	926
6146	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	166	214	269	330	394	459	520	575	622	661	693	717	735	749
6147	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165	213
6148	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	399	501	614	733	852	964	1,065	1,151	1,222	1,279	1,323	1,356	1,381	1,399	1,399	1,399	1,399	1,399	1,399	1,399
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	327	411	505	603	702	795	879	951	1,011	1,058	1,096	1,124	1,145	1,161
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325	409
6151	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	62	85	115	154	204	267	344	432	530	634	738	836	924	1,000	1,062	1,113	1,152	1,181	1,204	1,221
6152	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	0	0	0	0	0	0	51	69	94	127	168	220	284	357	439	525	611	693	766	829
6153	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	69
6154	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	173	217	266	318	369	418	462	499	530	554	573	588	599	607	606	606	606	606	606	606
6155	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	142	178	219	261	304	345	381	412	438	459	475	487	496	503
6156	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	177
6157	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	22	30	40	54	72	94	121	152	186	223	259	293	324	351	373	391	404	415	423	429
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	0	0	0	0	0	0	18	24	33	44	59	77	100	125	154	184	215	243	269	291
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	24
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	7	9	13	17	22	28	36	44	52	61	69	76	83	88	92	95	98	99	101	101
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	6	8	10	14	18	23	29	36	43	50	57	63	68	73
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	804	909	1,003	1,083	1,149	1,201	1,242	1,272	1,295	1,311	1,310	1,309	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	670	759	839	907	963	1,008	1,043	1,069	1,089	1,104	1,104	1,104	1,104	1,104
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	666	755
6166	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6167	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6168	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6169	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6170	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6171	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6172	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	65	82	101	120	140	158	175	189	200	210	217	222	226	229	229	229	229	229	229	229
6173	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	55	69	84	101	117	133	147	159	169	177	183	187	191	194
6174	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	68
6175	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	7	10	14	19	25	32	41	52	64	76	89	101	111	120	128	134	139	142	145	147
6176	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	0	0	0	0	0	0	6	9	12	16	21	27	35	44	54	64	75	85	94	102
6177	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8
6178	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	193	247																		

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6189	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	739	838
6190	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6191	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6192	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6193	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER1	81	101	124	148	172	195	215	233	247	259	268	274	279	283	283	283	283	283	283	283	283
6194	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	70	87	107	128	149	169	187	202	215	225	233	239	244	247	247
6195	HVAC	ASHP 17 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	87
6196	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER1	360	452	554	662	769	870	961	1,039	1,103	1,154	1,194	1,224	1,246	1,263	1,263	1,263	1,263	1,263	1,263	1,263	1,263
6197	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	304	383	470	562	654	741	819	886	942	986	1,021	1,047	1,067	1,082	1,082
6198	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	303	381
6199	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER1	158	199	243	291	338	382	422	456	484	507	524	537	547	554	554	554	554	554	554	554	554
6200	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	134	168	206	247	287	325	360	389	413	433	448	460	469	475	475
6201	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133	167
6202	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	SF	ER1	504	569	628	678	720	752	778	797	811	821	820	820	819	819	819	819	819	819	819	819	819
6203	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	375	425	469	508	539	564	584	599	610	618	618	618	618	618	618
6204	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	373	423
6205	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6206	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6207	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6208	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER1	47	59	73	87	101	114	126	136	144	151	156	160	163	165	165	165	165	165	165	165	165
6209	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	35	44	54	65	75	85	94	102	109	114	118	121	123	125	125
6210	HVAC	ASHP 18 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	44
6211	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER1	423	531	650	776	902	1,021	1,127	1,219	1,294	1,354	1,400	1,435	1,462	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481
6212	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	354	445	546	653	759	860	951	1,029	1,094	1,146	1,186	1,216	1,239	1,257	1,257
6213	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	351	443
6214	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER1	177	223	273	326	379	429	473	512	543	568	588	603	614	622	622	622	622	622	622	622	622
6215	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	148	187	229	274	319	361	399	432	459	481	498	511	520	528	528
6216	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	148	186
6217	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6218	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6219	HVAC	ASHP 19 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6220	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	210	269	339	415	496	576	652	720	779	827	865	895	918	935	948	947	948	947	947	948	948
6221	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	181	233	293	360	430	501	567	627	679	722	756	782	803	818	818
6222	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180	232
6223	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER1	317	398	488	583	677	767	847	915	972	1,017	1,051	1,078	1,098	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,112
6224	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	265	333	408	488	568	643	711	770	818	857	887	910	927	940	940
6225	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	331	
6226	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER1	143	180	220	263	305	346	382	412	438	458	474	486	495	501	501	501	501	501	501	501	501
6227	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	119	150	184	220	256	290	321	347	369	386	400	410	418	424	424
6228	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	149
6229	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6230	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6231	HVAC	ASHP 20 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6232	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	211	271	341	418	499	580	656	725	784	833	871	901	924	941	954	954	954	954	954	954	954
6233	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	183	235	295	363	434	505	572	632	684	727	762	788	809	824	824
6234	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	182	234
6235	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER1	354	445	546	651	757	856	946	1,022	1,085	1,136	1,175	1,204	1,226	1,243	1,242	1,242	1,242	1,242	1,242	1,242	1,242
6236	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	301	379	465	556	647	733	810	876	931	975	1,010	1,036	1,055	1,070	1,070
6237	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	299	377
6238	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER1	154	194	237	283	329	373	412	445	472	494	511	524	534	541	541	541	541	541	541	541	541
6239	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER2	0	0	0	0	0	0	131	165	202	242	281	319	353	381	405	424	439	451	459	466	466
6240	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130	164
6241	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6242	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6243	HVAC	ASHP 21 SEER - elec resis furnace baseline ER		MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6244	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	213	273	343	420	502	583	660	730	789	838	877	907	930	947	960	960	960	960	960	960	960
6245	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	184	236	298	365	437	508	576	637	689	732	767	794	814	830	830
6246	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183	235
6247	HVAC	ASHP 15 SEER - elec resis furnace baseline MO		SF	MO	519	652	799	953	1,108	1,254	1,384	1,497	1,589												

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6255	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	NC	67	91	109	124	141	167	192	215	222	219	204	202	195	177	180	175	180	380	463	480
6256	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	582	658	726	784	832	869	899	921	937	949	914	909	904	900	897	895	893	891	890	890
6257	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	54	68	84	100	116	132	145	157	167	174	180	185	188	191	178	175	171	167	163	159
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	20	27	32	37	42	50	58	64	66	66	61	60	58	53	54	52	54	114	138	144
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	517	649	795	949	1,103	1,248	1,378	1,490	1,582	1,655	1,712	1,755	1,787	1,811	1,689	1,657	1,622	1,585	1,547	1,512
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	237	298	365	436	506	573	633	684	726	760	786	805	820	831	775	760	744	727	710	694
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	56	75	90	103	117	138	160	178	184	182	170	168	162	147	149	145	149	316	384	399
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	385	435	480	518	550	574	594	608	619	627	604	600	597	595	593	591	590	589	588	588
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	737	945	1,187	1,456	1,738	2,020	2,287	2,526	2,732	2,901	3,035	3,140	3,219	3,279	3,323	3,323	3,323	3,323	3,323	3,323
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	MF	NC	25	33	40	46	52	61	71	79	82	81	75	74	72	65	66	64	66	140	171	177
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	560	703	862	1,029	1,195	1,353	1,494	1,615	1,715	1,794	1,855	1,902	1,937	1,963	1,830	1,796	1,758	1,717	1,677	1,639
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	257	323	396	472	549	621	686	741	787	823	852	873	889	901	840	824	807	788	770	752
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	60	81	98	111	127	150	173	193	200	197	184	182	175	159	162	157	162	342	417	432
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	360	407	449	484	514	537	555	569	579	586	564	561	558	556	554	553	551	551	550	550
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	655	841	1,056	1,295	1,547	1,797	2,035	2,247	2,430	2,581	2,700	2,793	2,864	2,917	2,957	2,956	2,957	2,956	2,956	2,957
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	25	34	41	47	53	63	73	81	84	83	77	76	74	67	68	66	68	144	175	181
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	505	634	778	928	1,079	1,220	1,348	1,457	1,547	1,619	1,674	1,716	1,748	1,771	1,651	1,620	1,586	1,549	1,513	1,479
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	232	291	357	426	495	560	619	669	710	743	768	788	802	813	758	744	728	711	694	679
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	55	74	88	100	115	135	156	174	180	178	166	164	158	143	146	142	146	309	376	390
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	74	92	113	135	157	178	196	212	225	236	244	250	254	258	240	236	231	226	220	215
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	22	29	35	40	46	54	63	70	72	71	66	66	63	57	59	57	59	124	151	156
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	451	566	694	829	963	1,090	1,203	1,301	1,381	1,445	1,495	1,532	1,560	1,581	1,474	1,447	1,416	1,383	1,351	1,320
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	207	260	319	380	442	500	552	597	634	663	686	703	716	726	677	664	650	635	620	606
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	49	66	79	90	102	121	139	156	161	159	148	146	141	128	130	127	130	276	336	348
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	276	354	445	545	651	757	857	946	1,023	1,087	1,137	1,176	1,206	1,228	1,245	1,245	1,245	1,245	1,245	1,245
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	25	34	41	47	53	63	73	81	84	83	77	76	74	67	68	66	68	144	175	181
6284	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	611	768	941	1,123	1,305	1,477	1,631	1,763	1,872	1,959	2,026	2,077	2,115	2,143	1,998	1,961	1,919	1,875	1,831	1,790
6285	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	281	352	432	516	599	678	749	809	859	899	930	953	971	984	917	900	881	861	840	821
6286	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66	89	107	122	139	164	189	211	218	215	201	198	191	173	177	172	177	374	455	472
6287	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6288	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	74	93	114	137	159	180	198	214	228	238	246	253	257	261	243	238	233	228	223	218
6289	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	NC	19	26	31	35	40	48	55	61	63	63	58	58	56	50	51	50	51	109	132	137
6290	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6291	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	5	6	6	6	6	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6292	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6293	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6294	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6295	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6296	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6297	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	9	9	9	9	10	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
6298	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6299	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6300	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6301	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6302	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6303	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	14	14	15	15	15	12	12	12	11	11	11	11	11	11	11	11	11	11	11	11
6304	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6305	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6306	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6307	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6308	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	3,982	4,045	4,091	4,081	4,072	4,065	4,058	4,053	4,049	4,044	4,041	4,038	4,036	4,034	4,034	4,033	4,034	4,033	4,033	4,034
6309	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	293	298	302	301	301	301	300	300	300	300	300	300	300	300
6310	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291	296
6311	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	1,366	1,397	1,420	1,436	1,433	1,430	1,428	1,426	1,425	1,423	1,422	1,421	1,420	1,420	1,419	1,419	1,419	1,419	1,419	1,420
6312	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	100	103	105	106	106	106	106	106	106	106	106	106	106	106
6313	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	102
6314	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER1	68	78	89	98	106	112	117	121	124	127	128	128	128	128	128	128	128	128	128	128
6315	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	5	6	7	7	8	8	9	9	9	9	9	10	10	10	10
6316	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6
6317	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6318	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6319	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6320	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER1	257	261	264	263	262	262	261	261	261	260	260	260	260	260	260	260	260	260	260	260
6321	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	10	11	11	11	11	11	11	11	11	11	11	11	11	11
6322	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	11
6323	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	55	57	59	61	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
6324	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	2	2	2	2	3	3	3	3	3	3	3	3	3	3
6325	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6326	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER1	875	964	1,041	1,104	1,154	1,192	1,221	1,243	1,259	1,257	1,256	1,255	1,255	1,254	1,254	1,254	1,254	1,254	1,254	1,254
6327	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	36	39	42	45	47	49	50	51	52	52	52	52	52	52
6328	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	39
6329	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	3,879	3,940	3,984	3,975	3,967	3,959	3,953	3,947	3,943	3,939	3,936	3,933	3,931	3,930	3,929	3,929	3,929	3,928	3,928	3,929
6330	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	501	510	517	516	516	515	515	515	515	515	515	515	515	515
6331	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	498	508
6332	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	224	305	413	555	737	964	1,238	1,558	1,912	2,286	2,659	3,013	3,331	3,604	3,830	4,011	4,152	4,259	4,340	4,400
6333	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	0	0	0	0	0	0	29	39	54	72	96	125	161	203	250	299	348	394	436	472
6334	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	39
6335	HVAC	Central AC 16 SEER ER	HVAC	SF	ER1	532	544	553	560	558	557	556	556	555	555	554	554	553	553	553	553	553	553	553	553
6336	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	69	70	72	73	73	73	73	72	72	72	72	72	72	72
6337	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	70
6338	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	37	50	68	91	121	158	203	256	314	375	437	495	547	592	629	658	682	699	712	722
6339	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	0	0	0	0	0	0	5	6	9	12	16	21	26	33	41	49	57	65	72	77
6340	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6
6341	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6342	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6343	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6344	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	21	22	23	24	24	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6345	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	3	4	4	4	4	4	4	4	4	4	4	4	4	4
6346	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4
6347	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER1	304	309	312	311	311	310	310	309	309	308	308	308	308	308	308	308	308	308	308	308
6348	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	49	50	51	51	51	51	51	51	51	51	51	51	51	51
6349	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	50
6350	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	1	2	3	4	5	6	8	10	12	14	17	19	21	23	24	25	26	27	27	28
6351	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	0	0	0	0	0	0	0	0	0	1	1	1	2	2	2	3	3	3	3	4
6352	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6353	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	67	70	73	74	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
6354	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	11	11	12	12	12	13	12	12	12	12	12	12	12	
6355	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11
6356	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	4	5	7	10	13	17	21	27	33	40	46	52	58	62	66	69	72	74	75	76
6357	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	0	0	0	0	0	0	1	1	2	2	3	4	4	5	6	8	9	9	10	10
6358	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6359	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER1	1,036	1,142	1,233	1,308	1,367	1,412	1,446	1,472	1,490	1,489	1,487	1,486	1,486	1,485	1,485	1,485	1,485	1,485	1,485	1,485
6360	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	168	186	201	213	223	231	241	244	244	244	244	244	244	244
6361	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	185
6362	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	407	414	418	417	417	416	415	415	414	414	413	413	413	413	413	413	413	413	413	413
6363	HVAC	Central AC 17 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	69	71	72	71	71	71	71	71	71	71	71	71	71	71
6364	HVAC	Central AC 17 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	70
6365	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	279	286	290	294	293	293	292													







Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6513	HVAC	Ductless AC ROB	HVAC	SF	NC	11	14	17	20	22	27	31	34	35	35	32	32	31	28	29	28	29	61	74	76
6514	HVAC	Ductless AC ROB	HVAC	MF	MO	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
6515	HVAC	Ductless AC ROB	HVAC	MF	MO	18	19	19	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
6516	HVAC	Ductless AC ROB	HVAC	MF	NC	5	6	8	9	10	12	14	15	16	16	14	14	13	13	12	13	27	33	34	
6517	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	27	33	41	49	57	64	71	77	82	85	88	90	92	93	93	93	93	93	93	93
6518	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	0	0	0	0	0	0	20	25	31	37	43	49	54	59	62	65	68	69	71	72
6519	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	25
6520	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	9	11	14	16	19	22	24	26	27	29	30	30	31	31	31	31	31	31	31	31
6521	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	0	0	0	0	0	0	7	9	10	12	15	16	18	20	21	22	23	23	24	24
6522	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8
6523	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER1	4	5	7	9	11	15	18	23	27	31	36	39	42	45	47	49	50	51	52	52
6524	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	3	4	5	7	9	11	14	17	21	24	27	30	33	35
6525	HVAC	Ductless ASHP - Resistance ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	
6526	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER1	134	151	167	180	191	200	206	211	215	218	218	218	218	217	217	217	217	217	217	217
6527	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	115	130	143	155	165	172	178	183	186	189	189	189	189	189
6528	HVAC	Ductless ASHP - Resistance ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	129	
6529	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6530	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6531	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6532	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER1	15	19	24	28	33	37	41	45	47	50	51	53	54	54	54	54	54	54	54	54
6533	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER2	0	0	0	0	0	0	13	17	20	24	28	32	36	39	41	43	44	46	46	47
6534	HVAC	Ductless ASHP - Resistance ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	17	
6535	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER1	112	144	181	222	265	308	349	385	416	442	463	479	491	500	507	507	507	507	507	507
6536	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	96	124	156	191	228	266	301	333	360	383	401	415	426	434	
6537	HVAC	Ductless ASHP - Resistance ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	123	
6538	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	245	308	377	450	523	592	654	707	751	785	812	833	848	859	859	859	859	859	859	859
6539	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	112	141	173	207	240	272	300	324	345	360	373	382	389	394	394	394	394	394	394	394
6540	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	NC	26	36	43	49	56	66	76	85	88	86	80	77	70	71	69	71	150	182	189	
6541	HVAC	Ductless ASHP - Resistance MO	Multifamily Market Rate	MF	MO	204	230	254	274	291	304	314	322	328	332	331	331	331	331	331	331	331	331	331	331
6542	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6543	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	41	51	63	75	87	99	109	118	125	131	135	139	141	143	143	143	143	143	143	143
6544	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	NC	19	26	31	35	40	47	55	61	63	62	58	57	55	50	51	50	51	108	132	137
6545	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	23	24	24	24	24	24	24	24	24	24	23	23	23	23	23	23	23	23	23	23
6546	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	0	0	0	0	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
6547	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6548	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
6549	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6550	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6551	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER1	10	11	12	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
6552	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6553	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
6554	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	6	7	7	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
6555	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6556	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	
6557	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
6558	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6559	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
6560	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	33	34	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
6561	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	20	21	22	22	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
6562	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	NC	2	2	3	3	4	4	5	6	6	6	5	5	5	5	5	5	5	10	12	12
6563	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	11	12	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
6564	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	18	19	20	21	22	22	23	23	23	23	23	23	23	23	23	23	23	23	23	23
6565	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	NC	1	2	2	2	3	3	4	4	4	4	4	4	3	3	3	3	7	9	9	
6566	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6567	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6568	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6569	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	20	25	30	36	42	47	52	56	60	63	65	66	68	69	69	69	69	69	69	69
6570	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	0	0	0	0	0	17	21	26	32	37	42	46	50	53	55	57	59	60	61	
6571	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	21	
6572	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6573	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6574	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6575	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6576	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6577	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6578	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	120	151	185	221</																

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6584	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6585	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6586	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6587	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
6588	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	0	0	0	0	0	0	6	6	6	7	7	6	6	6	6	6	6	6	6	6
6589	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
6590	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6591	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6592	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6593	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6594	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6595	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6596	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	39	40	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
6597	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
6598	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	NC	1	2	2	2	2	3	3	4	4	4	3	3	3	3	3	3	3	6	8	8
6599	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	7	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
6600	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6601	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	NC	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
6602	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	250	215	178	142	110	84	63	47	0	0	250	215	178	142	110	84	63	47	0	0
6603	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	97	113	126	133	133	126	113	97	80	64	147	151	154	154	133	126	113	97	80	64
6604	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	38	57	64	68	75	94	114	133	148	156	194	205	197	183	170	170	173	177	181	181
6605	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	97	78	60	46	35	26	0	0	0	0	97	78	60	46	35	26	0	0	0	0
6606	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	31	33	33	31	28	24	20	16	12	9	38	38	33	31	28	24	20	16	12	9
6607	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	8	12	13	14	16	20	24	28	31	33	41	43	41	38	35	35	36	37	38	38
6608	HVAC	Learning Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	139	147	147	139	125	108	89	71	55	42	171	170	147	139	125	108	89	71	55	42
6609	HVAC	Learning Thermostat - ASHP	New Construction	SF	NC	1	2	2	3	3	4	5	6	7	7	13	14	14	14	14	14	15	22	16	16
6610	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	NC	1	1	1	1	2	3	3	4	5	6	13	15	16	17	18	20	30	23	22	22
6611	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6612	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6613	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6614	HVAC	Learning Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6615	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	9	9	7	6	5	4	3	2	2	0	9	9	7	6	5	4	3	2	2	0
6616	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	4	5	5	6	6	5	5	4	3	3	6	6	7	6	6	5	4	3	2	3
6617	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	1	2	2	2	2	3	3	4	4	4	6	6	6	5	5	5	5	5	5	5
6618	HVAC	Learning Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6619	HVAC	Learning Thermostat - ASHP	New Construction	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6620	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6621	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	2,898	2,490	2,057	1,643	1,279	975	731	542	0	0	2,898	2,490	2,057	1,643	1,279	975	731	542	0	0
6622	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	677	787	875	923	923	875	787	677	559	446	1,024	1,052	1,073	1,070	923	875	787	677	559	446
6623	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	355	532	592	634	698	874	1,058	1,231	1,367	1,443	1,798	1,900	1,822	1,692	1,571	1,571	1,601	1,645	1,678	1,674
6624	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	1,216	972	756	576	432	321	0	0	0	0	1,216	972	756	576	432	321	0	0	0	0
6625	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	391	412	412	391	352	302	250	199	155	118	479	478	412	391	352	302	250	199	155	118
6626	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	82	122	136	146	160	201	243	283	314	331	413	436	418	388	361	361	368	378	385	384
6627	HVAC	Learning Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	1,742	1,839	1,839	1,742	1,568	1,348	1,113	889	692	527	2,138	2,133	1,839	1,742	1,568	1,348	1,113	889	692	527
6628	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	SF	NC	12	17	22	26	32	40	48	57	61	62	124	133	133	126	129	132	137	203	153	148
6629	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	5	8	10	13	17	23	32	41	49	55	121	141	150	151	160	169	182	277	212	208
6630	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	123	111	95	79	63	49	37	28	21	0	123	111	95	79	63	49	37	28	21	0
6631	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	55	64	71	75	75	71	64	55	45	36	83	85	87	87	75	71	64	55	45	36
6632	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	14	21	24	25	28	35	42	49	55	58	72	76	73	68	63	64	66	67	67	67
6633	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	836	650	496	372	276	0	0	0	0	0	836	650	496	372	276	0	0	0	0	0
6634	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	152	136	117	97	77	60	46	34	26	0	152	136	117	97	77	60	46	34	26	0
6635	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	65	76	85	89	89	85	76	65	54	43	99	102	104	104	89	85	76	65	54	43
6636	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	16	23	26	28	31	38	47	54	60	64	79	84	80	75	69	69	71	72	74	74
6637	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6638	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	MF	NC	1	1	1	1	2	2	3	3	3	3	7	7	7	7	7	7	7	11	8	8
6639	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	NC	0	0	1	1	1	1	2	2	2	3	6	7	8	8	8	9	9	14	11	11
6640	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	1,338	1,150	950	759	590	450	338	250	0	0	1,338	1,150	950	759	590	450	338	250	0	0
6641	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	312	364	404	426	426	404	364	312	258	206	473	486	496	494	426	404	364	312	258	206
6642	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	109	164	182	195	215	269	326	379	421	444	554	585	561	521	484	484	493	506	517	515



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6709	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6710	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6711	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6712	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6713	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6714	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6715	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6716	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6717	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6718	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6719	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6720	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6721	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6722	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6723	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6724	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6727	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6728	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7001	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	PAYS	SF	MO	245	245	245	245	245	245	245	245	245	245	0	0	0	0	0	0	0	245	245	
7002	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Single Family Income Eligible	SF	MO	71	71	71	71	71	71	71	71	71	71	0	0	0	0	0	0	0	71	71	
7003	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Market Rate	MF	MO	20	20	20	20	20	20	20	20	20	20	0	0	0	0	0	0	0	20	20	
7004	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Income Eligible	MF	MO	16	16	16	16	16	16	16	16	16	16	1	0	0	0	0	0	0	16	16	
7005	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	PAYS	SF	MO	128	128	128	128	128	128	128	128	128	128	0	0	0	0	0	0	0	128	128	
7006	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7007	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Market Rate	MF	MO	23	23	23	23	23	23	23	23	23	23	0	0	0	0	0	0	0	23	23	
7008	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7009	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	102	102	102	102	102	102	102	102	102	102	0	0	0	0	0	0	0	102	102	
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	23	23	24	24	24	24	24	24	24	24	1	0	0	0	0	0	0	23	24	
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	145	145	145	145	145	145	145	145	145	145	0	0	0	0	0	0	0	145	145	
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	60	60	60	60	60	60	60	60	60	60	0	0	0	0	0	0	0	60	60	
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	17	17	17	17	17	17	17	17	17	17	0	0	0	0	0	0	0	17	17	
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	13	14	14	14	14	14	14	14	14	14	0	0	0	0	0	0	0	13	14	
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	82	82	82	82	82	82	82	82	82	82	0	0	0	0	0	0	82	82		
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	42	42	42	42	42	42	42	42	42	42	0	0	0	0	0	0	42	42		
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	12	12	12	12	12	12	12	12	12	12	0	0	0	0	0	0	12	12		
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	9	10	10	10	10	10	10	10	10	10	0	0	0	0	0	0	9	10	10	
7021	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	PAYS	SF	MO	71	71	71	71	71	71	71	71	71	71	0	0	0	0	0	0	71	71		
7022	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	26	26	26	26	26	26	26	26	26	26	0	0	0	0	0	0	26	26		
7023	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	7	7	7	7	7	7	7	7	7	7	0	0	0	0	0	0	7	7		
7024	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	6	6	6	6	6	6	6	6	6	6	0	0	0	0	0	0	6	6		
7025	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	PAYS	SF	MO	27	27	27	27	27	27	27	27	27	27	0	0	0	0	0	0	27	27		
7026	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7027	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7028	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7029	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7030	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7031	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (MWh)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
9001	Water Heating	Kitchen Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	21	17	14	11	8	6	4	0	0	0	21	17	14	11	8	6	4	0	0	0	
9002	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	2	3	3	3	4	4	5	6	7	7	9	10	9	9	8	8	8	8	9	9	
9003	Water Heating	Kitchen Faucet Aerator	Single Family Income Eligible	SF	Retrofit	67	75	79	79	75	67	58	48	38	30	90	92	91	79	75	67	58	48	38	30	
9004	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	1	1	1	1	2	2	2	3	3	3	4	4	4	4	4	4	4	4	4	4	
9005	Water Heating	Kitchen Faucet Aerator	Multifamily Market Rate	MF	Retrofit	46	35	26	0	0	0	0	0	0	0	46	35	26	0	0	0	0	0	0	0	
9006	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9007	Water Heating	Kitchen Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	87	78	67	55	44	34	26	20	15	0	87	78	67	55	44	34	26	20	15	0	
9008	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9009	Water Heating	Bathroom Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9010	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9011	Water Heating	Bathroom Faucet Aerator	Single Family Income Eligible	SF	Retrofit	61	65	65	61	55	47	39	31	24	19	75	75	65	61	55	47	39	31	24	19	
9012	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	4	6	7	7	8	10	12	14	16	17	21	22	21	20	18	18	19	19	19	19	
9013	Water Heating	Bathroom Faucet Aerator	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9014	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9015	Water Heating	Bathroom Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	31	28	24	20	16	12	9	7	5	0	31	28	24	20	16	12	9	7	5	0	
9016	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	
9017	Water Heating	Low Flow Showerhead	Energy Efficiency Kits	SF	Retrofit	209	221	221	209	188	162	134	107	83	63	257	256	221	209	188	162	134	107	83	63	
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	38	57	64	68	75	94	114	132	147	155	193	204	196	182	169	169	172	177	180	180	
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	221	246	259	259	246	221	190	157	125	98	296	302	301	259	246	221	190	157	125	98	
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	22	33	36	39	43	53	65	75	84	88	110	116	111	103	96	96	98	101	103	102	
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	235	0	0	0	0	0	0	0	0	0	235	0	0	0	0	0	0	0	0	0	
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9023	Water Heating	Low Flow Showerhead	Multifamily Income Eligible	MF	Retrofit	169	152	131	108	86	67	51	38	28	0	169	152	131	108	86	67	51	38	28	0	
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	1	1	1	1	1	1	2	2	2	2	3	3	3	3	2	2	3	3	3	3	
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9031	Water Heating	Pipe Insulation	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9032	Water Heating	Pipe Insulation	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9033	Water Heating	Water Heater Wrap	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9034	Water Heating	Water Heater Wrap	Single Family Income Eligible	SF	Retrofit	30	36	42	47	50	50	47	42	36	30	24	19	44	47	50	47	50	47	42	42	
9035	Water Heating	Water Heater Wrap	Energy Efficiency Kits	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9036	Water Heating	Water Heater Wrap	Multifamily Income Eligible	MF	Retrofit	40	49	56	63	66	66	63	56	49	40	32	25	59	63	67	63	66	66	63	56	
9037	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	379	517	700	940	1,247	1,631	2,093	2,630	3,223	3,846	4,466	5,052	5,578	6,029	6,401	6,699	6,932	7,108	7,242	7,342	
9038	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	135	184	249	334	443	580	744	935	1,146	1,367	1,588	1,796	1,983	2,143	2,276	2,381	2,464	2,527	2,575	2,610	
9039	Water Heating	Heat Pump Hot Water Heater	Single Family Income Eligible	SF	MO	214	290	389	516	675	867	1,089	1,334	1,592	1,849	2,091	2,307	2,493	2,646	2,768	2,863	2,936	2,991	3,032	3,032	
9040	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	NC	17	25	34	43	56	77	103	133	159	179	188	205	214	483	538	550	561	847	661	686	
9041	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	38	52	70	94	125	164	210	264	324	386	448	507	560	605	643	673	696	714	727	737	
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	17	23	31	42	56	73	94	118	144	172	200	226	250	270	287	300	310	318	324	329	
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	629	808	1,015	1,245	1,486	1,726	1,951	2,153	2,324	2,463	2,573	2,657	2,721	2,768	2,803	2,801	2,800	2,799	2,799	2,799	
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	3	4	6	7	9	13	17	22	27	30	32	34	36	81	90	92	94	142	111	115	
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9052	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	63	95	105	113	124	155	188	219	243	257	257	243	219	188	155	124	97	74	55	41	
9053	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9054	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9055	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9056	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9057	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	126	189	336	414	584	724	959	1,160	1,444	1,673	1,956	2,158	2,393	2,533	2,703	2,781	2,896	2,928	3,006	3,009	
9058	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	95	143	254	312	441	547	724	876	1,090	1,263	1,477	1,629	1,807	1,913	2,041	2,100	2,186	2,211	2,270	2,272	
9059	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	19	29	52	63	90	111	147	178	222	257	300	331	367	389	415	427	444	449	461	462	
9060	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	56	85	150	185	261	324	429	519	646	749	875	966	1,071	1,134	1,210	1,244	1,296	1,310	1,345	1,347	
10001	New Construction	Zero Energy Ready Home	New Construction	SF	NC	161	227	286	344	416	518	630	738	795	812	777	785	770	706	733	723	743	1,573	941	941	
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	50	71	89	107	130	162	197	230	248	248	253	243	245	240	220	229	225	232	491	294	294
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	143	201	253	304	368	459	558	653	704	719	688	695	682	626	649	640	658	1,393	833	833	
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	46	65	81	98	118	148	179	210	226	231	221	224	219	201							

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1001	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1002	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	MO	\$294,160	\$344,600	\$393,107	\$437,582	\$476,701	\$509,980	\$537,610	\$560,206	\$578,577	\$593,554	\$605,892	\$610,141	\$614,475	\$618,896	\$623,405	\$628,005	\$632,696	\$637,482	\$642,362	\$647,341	\$647,341
1003	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1004	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1005	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1006	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1007	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1008	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1009	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1010	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1011	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	\$100,360	\$120,544	\$140,887	\$160,343	\$178,062	\$193,518	\$206,530	\$217,190	\$225,765	\$232,592	\$238,017	\$242,354	\$248,783	\$256,925	\$225,061	\$223,344	\$221,900	\$220,806	\$220,091	\$219,742	\$219,742
1012	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1013	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1014	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1015	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1016	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1017	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1018	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1019	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1020	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1021	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1022	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1023	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1024	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1025	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1026	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1027	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1028	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1029	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1030	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1031	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1032	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	\$118,006	\$143,402	\$169,571	\$195,256	\$219,382	\$241,229	\$260,475	\$277,141	\$291,468	\$303,812	\$314,551	\$324,042	\$309,485	\$310,570	\$311,626	\$312,866	\$314,475	\$316,577	\$319,228	\$322,430	\$322,430
1033	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	\$77,381	\$91,495	\$105,347	\$118,356	\$130,134	\$140,508	\$149,488	\$157,207	\$163,854	\$169,635	\$174,743	\$164,782	\$165,323	\$165,962	\$166,796	\$167,892	\$169,279	\$170,958	\$172,908	\$175,100	\$175,100
1034	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	NC	\$548	\$816	\$1,102	\$1,437	\$1,910	\$2,650	\$3,620	\$4,781	\$5,819	\$13,223	\$15,430	\$17,288	\$18,478	\$19,167	\$21,365	\$23,056	\$25,004	\$37,566	\$43,084	\$43,993	\$43,993
1035	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	\$42,707	\$49,169	\$55,237	\$60,730	\$65,566	\$69,753	\$73,349	\$76,446	\$79,138	\$81,516	\$75,885	\$76,169	\$76,543	\$77,037	\$77,664	\$78,426	\$79,311	\$80,308	\$81,404	\$82,574	\$82,574
1036	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	\$24,932	\$31,891	\$39,804	\$48,377	\$57,212	\$65,887	\$74,037	\$81,421	\$87,928	\$93,565	\$98,415	\$102,595	\$106,234	\$109,452	\$106,918	\$107,532	\$108,016	\$108,419	\$108,812	\$109,270	\$109,270
1037	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	NC	\$240	\$357	\$483	\$629	\$836	\$1,160	\$1,585	\$2,094	\$2,548	\$5,790	\$6,757	\$7,570	\$8,092	\$8,393	\$9,356	\$10,096	\$10,949	\$16,450	\$18,866	\$19,264	\$19,264
1038	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	\$181,766	\$243,204	\$320,651	\$415,156	\$526,053	\$650,426	\$783,126	\$917,519	\$1,046,801	\$1,165,374	#####	\$1,358,524	\$1,432,305	\$1,492,694	\$1,541,841	\$1,581,954	\$1,615,045	\$1,598,403	#####	#####	#####
1039	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	\$99,606	\$133,273	\$175,713	\$227,501	\$288,270	\$356,425	\$429,144	\$502,789	\$573,634	\$638,611	\$695,788	\$744,454	\$784,885	\$817,978	\$844,910	\$866,891	\$885,025	\$875,905	\$877,104	\$877,052	\$877,052
1040	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	NC	\$3,769	\$5,562	\$7,440	\$9,607	\$12,647	\$17,380	\$23,513	\$30,762	\$37,084	\$42,104	\$44,462	\$48,949	\$51,644	\$50,320	\$126,698	\$137,538	\$143,288	\$213,635	\$163,507	\$170,515	\$170,515
1041	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	\$36,357	\$48,646	\$64,137	\$83,040	\$105,221	\$130,098	\$156,641	\$183,522	\$209,381	\$233,098	\$253,969	\$271,732	\$286,490	\$298,569	\$308,399	\$316,423	\$323,042	\$319,713	\$320,151	\$320,132	\$320,132
1042	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	\$59,445	\$79,538	\$104,866	\$135,774	\$172,042	\$212,717	\$256,116	\$300,068	\$342,348	\$381,127	\$415,251	\$444,295	\$468,424	\$488,174	\$504,247	\$517,366	\$528,188	\$522,746	\$523,461	\$523,430	\$523,430
1043	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	NC	\$1,283	\$1,894	\$2,533	\$3,271	\$4,306	\$5,917	\$8,006	\$10,474	\$12,627	\$14,336	\$15,139	\$16,666	\$17,584	\$17,133	\$43,139	\$46,829	\$48,787	\$72,739	\$55,671	\$58,057	\$58,057
1044	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1045	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1046	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1047	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1048	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1049	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1050	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	\$43,986	\$58,208	\$75,643	\$96,207	\$119,399	\$144,299	\$169,7														

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
1072	Appliances	Heat Pump Dryer	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
1073	Appliances	Heat Pump Dryer	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2001	Behavior	Home Energy Report	No program	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2002	Behavior	Home Energy Report	No program	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2003	Behavior	Home Energy Report	No program	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2004	Behavior	Home Energy Report	No program	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2005	Behavior	Home Energy Report	No program	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2006	Behavior	Home Energy Report	No program	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	\$208,299	\$315,642	\$354,332	\$383,597	\$426,831	\$478,770	\$947,120	\$1,098,780	\$1,221,199	\$1,319,235	#####	\$1,805,654	\$1,868,298	\$1,876,758	\$1,854,845	\$2,070,536	\$2,158,469	\$2,150,782	#####	#####		
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	\$114,145	\$172,968	\$194,170	\$210,206	\$233,898	\$399,357	\$519,010	\$602,118	\$669,202	\$722,924	\$894,290	\$989,476	\$1,023,804	\$1,028,440	\$1,016,432	\$1,134,628	\$1,182,814	\$1,178,602	#####	#####		
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	\$1,804	\$2,674	\$3,593	\$4,660	\$6,162	\$16,787	\$23,118	\$29,603	\$35,471	\$41,302	\$71,453	\$84,320	\$93,264	\$96,469	\$101,359	\$143,072	\$154,205	\$194,578	\$165,181	\$166,588		
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
2013	Behavior	AMI Data Portal	No program	SF	MO	\$84,931	\$118,440	\$164,052	\$225,196	\$305,541	\$408,458	\$536,179	\$688,772	\$863,290	\$1,053,582	#####	\$1,446,598	\$1,631,994	\$1,801,741	\$1,953,214	\$2,086,301	\$2,202,592	\$2,304,555	#####	#####		
2014	Behavior	AMI Data Portal	No program	SF	MO	\$46,541	\$64,904	\$89,899	\$123,405	\$167,433	\$223,830	\$293,820	\$377,439	\$473,072	\$577,350	\$685,589	\$792,718	\$894,313	\$987,332	\$1,070,337	\$1,143,267	\$1,206,993	\$1,262,867	#####	#####		
2015	Behavior	AMI Data Portal	No program	SF	NC	\$299	\$865	\$1,806	\$3,274	\$5,503	\$8,835	\$13,625	\$20,190	\$28,590	\$38,671	\$49,964	\$62,281	\$75,083	\$87,651	\$100,273	\$112,560	\$124,757	\$143,651	\$157,437	\$171,213		
2016	Behavior	AMI Data Portal	No program	MF	MO	\$9,234	\$12,876	\$17,832	\$24,476	\$33,205	\$44,385	\$58,258	\$74,830	\$93,781	\$114,442	\$135,885	\$157,104	\$177,223	\$195,639	\$212,069	\$226,500	\$239,105	\$250,154	\$259,940	\$268,744		
2017	Behavior	AMI Data Portal	No program	MF	MO	\$15,098	\$21,052	\$29,156	\$40,019	\$54,291	\$72,571	\$95,254	\$122,351	\$153,337	\$187,119	\$222,178	\$256,873	\$289,768	\$319,879	\$346,742	\$370,337	\$390,948	\$409,013	\$425,014	\$439,409		
2018	Behavior	AMI Data Portal	No program	MF	NC	\$55	\$160	\$334	\$606	\$1,018	\$1,634	\$2,520	\$3,734	\$5,287	\$7,150	\$9,237	\$11,514	\$13,879	\$16,201	\$18,532	\$20,802	\$23,054	\$26,543	\$29,088	\$31,631		
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	\$121,653	\$129,477	\$130,570	\$124,761	\$113,266	\$98,193	\$81,806	\$65,946	\$51,776	\$39,823	\$30,153	\$22,563	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	\$25,492	\$31,248	\$36,810	\$41,407	\$44,256	\$44,817	\$43,002	\$39,204	\$34,129	\$28,552	\$23,112	\$18,221	\$14,073	\$10,700	\$8,040	\$30,917	\$37,949	\$44,764	\$50,421	\$53,959	\$59,959	
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	\$74,039	\$111,692	\$124,818	\$134,517	\$149,000	\$187,609	\$228,564	\$267,600	\$299,169	\$317,781	\$319,829	\$304,992	\$276,337	\$239,081	\$198,781	\$229,047	\$229,718	\$213,017	\$198,754	\$194,107	\$194,107	
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	\$143,187	\$152,914	\$154,730	\$148,349	\$135,138	\$117,552	\$98,267	\$79,483	\$62,616	\$48,323	\$36,712	\$27,564	\$0	\$0	\$0	\$0	\$172,354	\$184,316	\$186,760	\$179,301	\$163,555	
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	\$36,933	\$45,404	\$53,641	\$60,511	\$64,857	\$65,863	\$63,373	\$57,934	\$50,572	\$42,423	\$34,433	\$27,219	\$21,077	\$16,067	\$12,104	\$46,666	\$57,426	\$67,908	\$76,679	\$82,263	\$82,263	
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	\$9,965	\$12,266	\$14,509	\$16,389	\$17,587	\$17,882	\$17,227	\$15,768	\$13,780	\$11,573	\$9,404	\$7,443	\$5,770	\$4,403	\$3,321	\$12,817	\$15,789	\$18,691	\$21,127	\$22,689	\$22,689	
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	\$17,064	\$18,148	\$18,288	\$17,462	\$15,842	\$13,724	\$11,425	\$9,203	\$7,221	\$5,550	\$4,199	\$3,140	\$0	\$0	\$0	\$19,315	\$20,572	\$20,761	\$19,852	\$18,036	\$18,036	
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	\$2,197	\$2,692	\$3,169	\$3,562	\$3,804	\$3,850	\$3,691	\$3,363	\$2,925	\$2,446	\$1,978	\$1,559	\$1,203	\$914	\$686	\$2,638	\$3,236	\$3,814	\$4,293	\$4,592	\$4,592	
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	\$14,303	\$21,564	\$24,084	\$25,940	\$28,715	\$36,134	\$43,995	\$51,477	\$57,514	\$61,054	\$61,409	\$58,523	\$52,991	\$45,817	\$38,069	\$43,837	\$43,936	\$40,715	\$37,963	\$37,051	\$37,051	
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	\$19,576	\$20,891	\$21,124	\$20,238	\$18,423	\$16,014	\$13,377	\$10,812	\$8,512	\$6,564	\$4,983	\$3,739	\$0	\$0	\$0	\$23,316	\$24,917	\$25,230	\$24,207	\$22,066	\$22,066	
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	\$3,113	\$3,825	\$4,516	\$5,092	\$5,454	\$5,536	\$5,324	\$4,864	\$4,244	\$3,558	\$2,887	\$2,281	\$1,765	\$1,345	\$1,013	\$3,903	\$4,800	\$5,674	\$6,404	\$6,867	\$6,867	
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	\$831	\$1,023	\$1,209	\$1,365	\$1,465	\$1,489	\$1,433	\$1,311	\$1,146	\$962	\$781	\$618	\$479	\$365	\$275	\$1,063	\$1,309	\$1,549	\$1,750	\$1,879	\$1,879	
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	\$81,137	\$85,970	\$86,307	\$82,094	\$74,191	\$64,023	\$53,092	\$42,600	\$33,290	\$25,484	\$19,204	\$14,302	\$0	\$0	\$0	\$86,547	\$91,794	\$92,248	\$87,835	\$79,462	\$79,462	
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	\$4,727	\$5,763	\$6,753	\$7,556	\$8,033	\$8,092	\$7,724	\$7,004	\$6,065	\$5,047	\$4,064	\$3,187	\$2,449	\$1,852	\$1,384	\$5,295	\$6,466	\$7,587	\$8,501	\$9,050	\$9,050	
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3036	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	\$1,084	\$1,324	\$1,555	\$1,743	\$1,857	\$1,874	\$1,792	\$1,628	\$1,413	\$1,178	\$950	\$747	\$575	\$436	\$326	\$1,251	\$1,530	\$1,799	\$2,020	\$2,155			
3037	Building Shell	Ceiling Insulation R11-R49 electric furnace base	PAYS	SF	Retrofit	\$14,006	\$21,245	\$23,872	\$25,868	\$28,812	\$36,478	\$44,688	\$52,610	\$59,144	\$63,174	\$63,936	\$61,311	\$55,862	\$48,601	\$40,635	\$32,874	\$25,902	\$19,993	\$15,192	\$11,409			
3038	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	\$198,688	\$210,507	\$211,314	\$200,983	\$181,619	\$156,713	\$129,947	\$104,257	\$81,464	\$62,357	\$46,987	\$34,989	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3039	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	\$7,340	\$7,056	\$6,445	\$5,621	\$4,711	\$3,821	\$3,018	\$2,335	\$1,778	\$1,339	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3040	Building Shell	Ceiling Insulation R11-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$25,249	\$31,086	\$36,779	\$41,549	\$44,596	\$45,352	\$43,698	\$40,002	\$34,966	\$29,371	\$23,871	\$18,894	\$14,650	\$11,181	\$8,434	\$0	\$0	\$0	\$0	\$0	\$0		
3041	Building Shell	Ceiling Insulation R5-R30 electric furnace base	PAYS	SF	Retrofit	\$45,554	\$69,250	\$77,985	\$84,694	\$94,537	\$119,953	\$147,268	\$173,751	\$195,748	\$209,531	\$212,508	\$204,210	\$186,449	\$162,552	\$136,190	\$110,403	\$87,166	\$67,418	\$51,330	\$38,623			
3042	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Single Family Income Eligible	SF	Retrofit	\$359,970	\$383,040	\$386,193	\$368,933	\$334,869	\$290,244	\$241,756	\$194,843	\$152,944	\$117,610	\$89,031	\$66,608	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3043	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Market Rate	MF	Retrofit	\$23,638	\$22,794	\$20,883	\$18,268	\$15,357	\$12,490	\$9,894	\$7,677	\$5,864	\$4,426	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3044	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$87,982	\$108,538	\$128,664	\$145,634	\$156,611	\$159,563	\$154,025	\$141,256	\$123,693	\$104,082	\$84,736	\$67,184	\$52,180	\$39,892	\$30,138	\$0	\$0	\$0	\$0	\$0	\$0		
3045	Building Shell	Ceiling Insulation R5-R38 electric furnace base	PAYS	SF	Retrofit	\$36,951	\$56,189	\$63,297	\$68,763	\$76,778	\$97,450	\$119,677	\$141,240	\$159,169	\$170,426	\$172,898	\$166,195	\$151,784	\$132,368	\$110,932	\$89,953	\$71,040	\$54,960	\$41,857	\$31,504			
3046	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Single Family Income Eligible	SF	Retrofit	\$360,251	\$382,812	\$385,430	\$367,693	\$333,279	\$288,461	\$239,933	\$193,101	\$151,362	\$116,228	\$87,860	\$65,638	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3047	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Market Rate	MF	Retrofit	\$20,369	\$19,630	\$17,973	\$15,713	\$13,200	\$10,730	\$8,494	\$6,587	\$5,028	\$3,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3048	Building Shell	Ceiling Insulation R5-R38 electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$74,625	\$92,024	\$109,047	\$123,384	\$132,634	\$135,086	\$130,351	\$119,502	\$104,608	\$87,994	\$71,615	\$56,762	\$44,071	\$33,682	\$25,439	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3049	Building Shell	Ceiling Insulation R5-R49 electric furnace base	PAYS	SF	Retrofit	\$27,112	\$41,238	\$46,467	\$50,493	\$56,393	\$71,594	\$87,946	\$103,818	\$117,026	\$125,334	\$127,183	\$122,282	\$111,705	\$97,439	\$81,679	\$66,248	\$52,331	\$40,495	\$30,847	\$23,222			
3050	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Single Family Income Eligible	SF	Retrofit	\$366,170	\$388,516	\$390,581	\$372,038	\$336,699	\$290,970	\$241,643	\$194,171	\$151,960	\$116,502	\$87,926	\$65,581	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3051	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Market Rate	MF	Retrofit	\$17,055	\$16,420	\$15,019	\$13,118	\$11,010	\$8,941	\$7,072	\$5,479	\$4,179	\$3,150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3052	Building Shell	Ceiling Insulation R5-R49 electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$60,946	\$75,109	\$88,949	\$100,583	\$108,060	\$109,993	\$106,077	\$97,194	\$85,033	\$71,489	\$58,151	\$46,066	\$35,748	\$27,307	\$20,614	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3053	Building Shell	Ceiling Insulation R5-R60 electric furnace base	PAYS	SF	Retrofit	\$19,437	\$29,569	\$33,323	\$36,215	\$40,453	\$51,364	\$63,104	\$74,503	\$83,993	\$89,968	\$91,307	\$87,800	\$80,216	\$69,981	\$58,669	\$47,591	\$37,598	\$29,098	\$22,168	\$16,691			
3054	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Single Family Income Eligible	SF	Retrofit	\$377,139	\$399,792	\$401,549	\$382,133	\$345,512	\$298,305	\$247,498	\$198,686	\$155,343	\$118,979	\$89,706	\$66,842	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3055	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Market Rate	MF	Retrofit	\$15,306	\$14,724	\$13,457	\$11,744	\$9,849	\$7,992	\$6,316	\$4,890	\$3,727	\$2,807	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3056	Building Shell	Ceiling Insulation R5-R60 electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$53,541	\$65,947	\$78,057	\$88,219	\$94,728	\$96,373	\$92,895	\$85,073	\$74,393	\$62,513	\$50,825	\$40,244	\$31,216	\$23,834	\$17,984	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3057	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3058	Building Shell	Ceiling Insulation R11-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	\$28,876	\$30,556	\$30,634	\$29,100	\$26,262	\$22,631	\$18,741	\$15,016	\$11,717	\$8,956	\$6,739	\$5,012	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3059	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3060	Building Shell	Ceiling Insulation R11-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	\$1,711	\$2,104	\$2,485	\$2,804	\$3,005	\$3,051	\$2,936	\$2,684	\$2,343	\$1,965	\$1,595	\$1,261	\$976	\$744	\$561	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3061	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	SF	Retrofit	\$9,288	\$14,088	\$15,831	\$17,156	\$19,108	\$24,194	\$29,640	\$34,897	\$39,233	\$41,907	\$42,415	\$40,675	\$37,062	\$32,246	\$26,962	\$21,813	\$17,188	\$13,268	\$10,082	\$7,571			
3062	Building Shell	Ceiling Insulation R5-R30 heat pump base	Single Family Income Eligible	SF	Retrofit	\$43,983	\$46,703	\$46,987	\$44,791	\$40,569	\$35,086	\$29,161	\$23,451	\$18,368	\$14,094	\$10,645	\$7,947	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3063	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	MF	Retrofit	\$4,625	\$7,007	\$7,865	\$8,514	\$9,472	\$11,979	\$14,660	\$17,240	\$19,360	\$20,657	\$20,884	\$20,005	\$18,208	\$15,824	\$13,217	\$10,681	\$8,407	\$6,483	\$4,921	\$3,691			
3064	Building Shell	Ceiling Insulation R5-R30 heat pump base	Multifamily Income Eligible	MF	Retrofit	\$5,209	\$6,422	\$7,608	\$8,606	\$9,249	\$9,417	\$9,085	\$8,327	\$7,287	\$6,128	\$4,986	\$3,951	\$3,067	\$2,344	\$1,770	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3065	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	SF	Retrofit	\$7,600	\$11,532	\$12,963	\$14,053	\$15,658	\$19,832	\$24,305	\$28,625	\$32,192	\$34,399	\$34,827	\$33,410	\$30,452	\$26,504	\$22,168	\$17,941	\$14,141	\$10,919	\$8,300	\$6,235			
3066	Building Shell	Ceiling Insulation R5-R38 heat pump base	Single Family Income Eligible	SF	Retrofit	\$46,149	\$48,945	\$49,185	\$46,831	\$42,365	\$36,596	\$30,379	\$24,400	\$19,088	\$14,627	\$11,035	\$8,227	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3067	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	MF	Retrofit	\$3,769	\$5,712	\$6,414	\$6,945	\$7,730	\$9,780	\$11,972	\$14,084	\$15,822	\$16,888	\$17,079	\$16,366	\$14,901	\$12,955	\$10,824	\$8,750	\$6,890	\$5,315	\$4,035	\$3,028			
3068	Building Shell	Ceiling Insulation R5-R38 heat pump base	Multifamily Income Eligible	MF	Retrofit	\$4,543	\$5,597	\$6,627	\$7,492	\$8,047	\$8,189	\$7,896	\$7,233	\$6,327	\$5,318	\$4,325	\$3,426	\$2,658	\$2,030	\$1,532	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3069	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	SF	Retrofit	\$5,663	\$8,596	\$9,665	\$10,481	\$11,681	\$14,799	\$18,142	\$21,372	\$24,043	\$25,698	\$26,025	\$24,972	\$22,768	\$19,821	\$16,583	\$13,424	\$10,584	\$8,175	\$6,216	\$4,670			
3070	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$49,606	\$52,548	\$52,741	\$50,155	\$45,315	\$39,095	\$32,412	\$26,000	\$20,312	\$15,546	\$11,712	\$8,720	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3071	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	MF	Retrofit	\$2,690	\$4,078	\$4,581	\$4,962	\$5,524	\$6,991	\$8,560	\$10,073	\$11,320	\$12,086	\$12,226	\$11,719	\$10,673	\$9,282	\$7,757	\$6,273	\$4,941	\$3,812	\$2,895	\$2,173			
3072	Building Shell	Ceiling Insulation R5-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	\$3,858	\$4,750	\$5,619	\$6,347	\$6,811	\$6,926	\$6,672	\$6,107	\$5,338	\$4,483	\$3,643	\$2,883	\$2,235	\$1,706	\$1,286	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3073	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3074	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	\$53,484	\$56,619	\$56,789	\$53,967	\$48,725	\$42,007	\$34,802	\$27,897	\$21,778	\$16,655	\$12,538	\$9,328	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3075	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3076	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	\$3,548	\$4,365	\$5,160	\$5,824	\$6,246	\$6,346	\$6,110	\$5,588	\$4,881	\$4,097	\$3,327	\$2,631	\$2,039	\$1,555	\$1,172	\$0	\$0	\$0	\$0	\$0			

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
3079	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3080	Building Shell	Ceiling Insulation R11-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3081	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3082	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$447,433	\$473,063	\$473,877	\$449,745	\$405,533	\$349,154	\$288,872	\$231,239	\$180,273	\$137,670	\$103,491	\$76,883	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3083	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	\$9,946	\$9,575	\$8,757	\$7,648	\$6,419	\$5,212	\$4,122	\$3,193	\$2,435	\$1,835	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3084	Building Shell	Ceiling Insulation R5-R30 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$10,005	\$12,278	\$14,479	\$16,305	\$17,445	\$17,685	\$16,987	\$15,503	\$13,510	\$11,314	\$9,168	\$7,235	\$5,594	\$4,257	\$3,202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3085	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3086	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$552,587	\$584,011	\$584,781	\$554,777	\$500,032	\$430,334	\$355,885	\$284,758	\$221,898	\$169,381	\$127,272	\$94,505	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3087	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	\$9,147	\$8,796	\$8,037	\$7,013	\$5,880	\$4,770	\$3,769	\$2,917	\$2,223	\$1,674	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3088	Building Shell	Ceiling Insulation R5-R38 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$10,512	\$12,882	\$15,172	\$17,063	\$18,233	\$18,460	\$17,709	\$16,141	\$14,049	\$11,751	\$9,510	\$7,496	\$5,788	\$4,400	\$3,305	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3089	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3090	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3091	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3092	Building Shell	Ceiling Insulation R5-R49 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3093	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3094	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3095	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Market Rate	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3096	Building Shell	Ceiling Insulation R5-R60 gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3097	Building Shell	Duct Insulation - electric furnace base	PAYS	SF	Retrofit	\$78,628	\$119,692	\$134,974	\$146,782	\$164,059	\$208,440	\$256,240	\$302,711	\$341,473	\$365,981	\$371,649	\$357,584	\$326,886	\$285,339	\$239,353	\$194,265	\$153,560	\$118,909	\$90,639	\$68,280	\$0	\$0	
3098	Building Shell	Duct Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$994,489	#####	#####	\$1,022,154	\$928,665	\$805,678	\$671,724	\$541,894	\$425,774	\$327,725	\$248,328	\$185,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3099	Building Shell	Duct Insulation - electric furnace base	PAYS	MF	Retrofit	\$15,432	\$23,420	\$26,330	\$28,548	\$31,813	\$40,299	\$49,395	\$58,183	\$65,444	\$69,939	\$70,820	\$67,947	\$61,940	\$53,917	\$45,103	\$36,507	\$28,779	\$22,225	\$16,897	\$12,695	\$0	\$0	
3100	Building Shell	Duct Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	#####	#####	#####	\$1,092,185	\$858,584	\$661,204	\$501,271	\$375,576	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3101	Building Shell	Duct Insulation - heat pump base	PAYS	SF	Retrofit	\$10,378	\$15,756	\$17,720	\$19,220	\$21,426	\$27,152	\$33,293	\$39,230	\$44,142	\$47,191	\$47,803	\$45,880	\$41,839	\$36,433	\$30,488	\$24,686	\$19,467	\$15,039	\$11,437	\$8,596	\$0	\$0	
3102	Building Shell	Duct Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	\$116,882	\$124,132	\$124,909	\$119,092	\$107,883	\$93,321	\$77,576	\$62,397	\$48,881	\$37,513	\$28,340	\$21,159	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3103	Building Shell	Duct Insulation - heat pump base	PAYS	MF	Retrofit	\$2,239	\$3,390	\$3,804	\$4,116	\$4,578	\$5,788	\$7,080	\$8,323	\$9,343	\$9,965	\$10,071	\$9,644	\$8,774	\$7,623	\$6,364	\$5,142	\$4,045	\$3,118	\$2,366	\$1,774	\$0	\$0	
3104	Building Shell	Duct Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$111,154	\$89,699	\$70,500	\$54,282	\$41,144	\$30,821	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3105	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	\$66,542	\$100,331	\$112,065	\$120,710	\$133,637	\$168,177	\$204,782	\$239,628	\$267,754	\$284,258	\$285,934	\$272,519	\$246,778	\$213,389	\$177,320	\$142,571	\$111,645	\$85,647	\$64,679	\$48,272	\$0	\$0	
3106	Building Shell	Duct Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3107	Building Shell	Duct Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	\$3,350	\$5,045	\$5,628	\$6,055	\$6,695	\$8,415	\$10,234	\$11,961	\$13,347	\$14,152	\$14,217	\$13,532	\$12,238	\$10,568	\$8,770	\$7,042	\$5,507	\$4,219	\$3,181	\$2,371	\$0	\$0	
3108	Building Shell	Duct Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$8,379	\$10,248	\$12,044	\$13,518	\$14,415	\$14,565	\$13,944	\$12,684	\$11,017	\$9,196	\$7,428	\$5,843	\$4,503	\$3,416	\$2,561	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3109	Building Shell	Duct Sealing - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3110	Building Shell	Duct Sealing - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$472,189	\$500,035	\$501,706	\$476,941	\$430,773	\$371,513	\$307,900	\$246,900	\$192,822	\$147,518	\$111,096	\$82,684	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3111	Building Shell	Duct Sealing - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3112	Building Shell	Duct Sealing - electric furnace base	Multifamily Income Eligible	MF	Retrofit	#####	#####	#####	\$1,096,111	\$855,422	\$653,961	\$492,139	\$366,008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3113	Building Shell	Duct Sealing - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3114	Building Shell	Duct Sealing - heat pump base	Single Family Income Eligible	SF	Retrofit	\$64,949	\$68,684	\$68,818	\$65,328	\$58,920	\$50,741	\$41,990	\$33,621	\$26,217	\$20,026	\$15,058	\$11,190	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3115	Building Shell	Duct Sealing - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3116	Building Shell	Duct Sealing - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$172,078	\$148,178	\$122,614	\$98,167	\$76,543	\$58,463	\$43,956	\$32,660	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3117	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3118	Building Shell	Duct Sealing - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3119	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3120	Building Shell	Duct Sealing - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3121	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	SF	Retrofit	\$47,448	\$72,032	\$81,010	\$87,861	\$97,941	\$124,108	\$152,170	\$179,300	\$201,738	\$215,664	\$218,448	\$209,653	\$191,177	\$166,466	\$139,296	\$112,782	\$88,936	\$68,703	\$52,246	\$39,266	\$0	\$0	
3122	Building Shell	Floor Insulation (R4 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$250,165	\$266,224	\$268,442	\$256,470	\$232,814	\$201,809	\$168,112	\$135,503	\$106,375	\$81,808	\$61,936	\$46,341	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3123	Building Shell	Floor Insulation (R4 base) - electric furnace base	PAYS	MF	Retrofit	\$10,531	\$15,883	\$17,746	\$19,120	\$21,174	\$26,655	\$32,467	\$38,004	\$42,478	\$45,110	\$45,391	\$43,275	\$39,201	\$33,908	\$28,186	\$22,670	\$17,758	\$13,628	\$10,295	\$7,686	\$0	\$0	
3124	Building Shell	Floor Insulation (R4 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$10,204	\$12,422	\$14,531	\$16,231	\$17,226	\$17,322	\$16,504	\$14,941	\$12,915	\$10,728	\$8,623	\$6,750	\$5,177	\$3,908	\$2,916	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3125	Building Shell	Floor Insulation (R4 base) - heat pump base	PAYS	SF	Retrofit	\$7,125	\$10,788	\$12,101	\$13,089</																			

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
3130	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3131	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3132	Building Shell	Floor Insulation (R4 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3133	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3134	Building Shell	Floor Insulation (R13 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3135	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3136	Building Shell	Floor Insulation (R13 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3137	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3138	Building Shell	Floor Insulation (R13 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3141	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3149	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	SF	Retrofit	\$165,814	\$250,631	\$280,642	\$303,052	\$336,354	\$424,366	\$518,057	\$607,772	\$680,867	\$724,718	\$730,903	\$698,447	\$634,152	\$549,809	\$458,097	\$369,315	\$289,986	\$223,061	\$168,909	\$126,407	\$126,407	
3150	Building Shell	Basement Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$690,490	\$771,118	\$830,467	\$919,243	\$1,156,633	\$1,408,141	\$1,647,462	\$1,840,500	\$1,953,596	\$1,964,763	#####	\$1,695,094	\$1,465,474	\$1,217,540	\$978,759	\$766,308	\$587,748	\$443,771	\$331,137	\$0	\$0	\$0
3151	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	MF	Retrofit	\$26,179	\$39,621	\$44,422	\$48,031	\$53,378	\$67,432	\$82,427	\$96,827	\$108,614	\$115,761	\$116,901	\$111,857	\$101,693	\$88,284	\$73,654	\$59,458	\$46,748	\$36,006	\$27,301	\$20,458	\$0	
3152	Building Shell	Basement Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$119,017	\$145,116	\$170,037	\$190,251	\$202,253	\$203,724	\$194,434	\$176,314	\$152,671	\$127,044	\$102,292	\$80,217	\$61,625	\$46,605	\$34,833	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	\$24,437	\$36,772	\$40,990	\$44,063	\$48,680	\$61,135	\$74,284	\$86,740	\$96,712	\$102,449	\$102,827	\$97,785	\$88,350	\$76,223	\$63,194	\$50,693	\$39,604	\$30,310	\$22,835	\$17,002	\$0	
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	\$84,583	\$94,158	\$101,076	\$111,514	\$139,847	\$169,683	\$197,846	\$220,267	\$232,987	\$233,492	\$221,702	\$199,999	\$172,275	\$142,600	\$114,205	\$89,077	\$68,060	\$51,189	\$38,047	\$0	\$0	\$0
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	\$3,170	\$4,772	\$5,321	\$5,722	\$6,325	\$7,946	\$9,658	\$11,282	\$12,584	\$13,336	\$13,391	\$12,739	\$11,515	\$9,939	\$8,243	\$6,615	\$5,171	\$3,959	\$2,984	\$2,223	\$0	
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$8,367	\$10,157	\$11,848	\$13,197	\$13,965	\$14,002	\$13,301	\$12,005	\$10,346	\$8,568	\$6,865	\$5,357	\$4,095	\$3,082	\$2,292	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3157	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3158	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3159	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3160	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3161	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	SF	Retrofit	\$6,952	\$10,547	\$11,853	\$12,847	\$14,311	\$18,122	\$22,204	\$26,145	\$29,398	\$31,406	\$31,790	\$30,490	\$27,785	\$24,178	\$20,218	\$16,360	\$12,892	\$9,953	\$7,564	\$5,681	\$0	
3162	Building Shell	Foundation Sidewall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$47,325	\$53,025	\$57,296	\$63,632	\$80,333	\$98,130	\$115,197	\$129,134	\$137,538	\$138,800	\$132,722	\$120,582	\$104,611	\$87,218	\$70,360	\$55,282	\$42,551	\$32,242	\$24,145	\$0	\$0	
3163	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	MF	Retrofit	\$2,415	\$3,667	\$4,126	\$4,477	\$4,993	\$6,330	\$7,764	\$9,153	\$10,302	\$11,018	\$11,165	\$10,720	\$9,780	\$8,519	\$7,132	\$5,777	\$4,557	\$3,522	\$2,679	\$2,014	\$0	
3164	Building Shell	Foundation Sidewall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$3,007	\$3,679	\$4,326	\$4,857	\$5,182	\$5,238	\$5,017	\$4,565	\$3,967	\$3,313	\$2,677	\$2,107	\$1,624	\$1,233	\$925	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3165	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	SF	Retrofit	\$838	\$1,264	\$1,413	\$1,522	\$1,686	\$2,123	\$2,586	\$3,027	\$3,384	\$3,594	\$3,617	\$3,449	\$3,124	\$2,703	\$2,247	\$1,808	\$1,416	\$1,087	\$821	\$613	\$0	\$0
3166	Building Shell	Foundation Sidewall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	\$4,991	\$5,565	\$5,983	\$6,612	\$8,307	\$10,096	\$11,793	\$13,153	\$13,937	\$13,993	\$13,311	\$12,031	\$10,383	\$8,611	\$6,910	\$5,400	\$4,134	\$3,116	\$2,321	\$0	\$0	\$0
3167	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	MF	Retrofit	\$238	\$360	\$402	\$434	\$481	\$606	\$739	\$865	\$968	\$1,029	\$1,036	\$989	\$897	\$776	\$646	\$520	\$408	\$313	\$237	\$177	\$0	\$0
3168	Building Shell	Foundation Sidewall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$174	\$212	\$248	\$277	\$293	\$295	\$281	\$254	\$219	\$182	\$146	\$114	\$88	\$66	\$49	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3169	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3170	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3171	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3172	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3173	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3174	Building Shell	Insulated Cellular Shades - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$574,714	\$501,866	\$421,149	\$341,949	\$270,402	\$209,464	\$159,726	\$120,368	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3175	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
3176	Building Shell	Insulated Cellular Shades - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$357,831	\$281,243	\$216,546	\$164,136	\$122,955	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$420,346	\$330,858	\$255,119	\$193,654	\$145,277		
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3181	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3182	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$222,867	\$193,218	\$160,982	\$129,778	\$101,898	\$78,378	\$59,348	\$44,413	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$256,738	\$222,910	\$185,993	\$150,161	\$118,075	
3183	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3184	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$79,441	\$62,083	\$47,529	\$35,819	\$26,678	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$85,447	\$66,850	\$51,235	\$38,655	\$28,822	
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	\$650,403	\$985,553	#####	\$1,197,681	\$1,332,636	\$1,685,577	\$2,062,907	\$2,426,262	\$2,724,930	\$2,907,763	#####	\$2,816,550	\$2,563,743	\$2,228,385	\$1,861,370	\$1,504,417	\$1,184,250	\$913,237	\$693,277	\$520,135		
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	#####	#####	#####	\$1,134,473	\$1,030,421	\$893,706	\$744,907	\$600,763	\$471,895	\$363,123	\$275,072	\$205,933	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	\$274,233	\$414,511	\$464,152	\$501,221	\$556,306	\$701,879	\$856,848	\$1,005,245	\$1,126,155	\$1,198,699	#####	\$1,155,272	\$1,048,936	\$909,437	\$757,746	\$610,897	\$479,681	\$368,981	\$279,408	\$209,104		
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	#####	#####	#####	\$2,714,165	\$2,254,629	\$1,812,179	\$1,418,604	\$1,087,882	\$821,260	\$612,718	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	\$152,334	\$161,845	\$162,923	\$155,398	\$140,829	\$121,869	\$101,348	\$81,551	\$63,912	\$49,068	\$37,085	\$27,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$340,563	\$323,925	\$292,726	\$252,594	\$209,459	\$168,056	\$131,321	\$100,524	\$75,748	\$56,410	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3193	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3194	Building Shell	Storm Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$793,828	\$840,121	\$842,401	\$800,310	\$722,373	\$622,592	\$515,645	\$413,211	\$322,487	\$246,547	\$185,545	\$137,996	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3195	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
3196	Building Shell	Storm Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$986,271	\$935,747	\$843,482	\$725,976	\$600,434	\$480,476	\$374,446	\$285,853	\$214,808	\$159,521	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3197	Building Shell	Wall Insulation - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3198	Building Shell	Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3199	Building Shell	Wall Insulation - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3200	Building Shell	Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$170,007	\$206,397	\$240,794	\$268,241	\$283,902	\$284,691	\$270,484	\$244,160	\$210,449	\$174,311	\$139,693	\$109,030	\$83,361	\$62,740	\$46,666	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3201	Building Shell	Wall Insulation - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3202	Building Shell	Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3203	Building Shell	Wall Insulation - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3204	Building Shell	Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3205	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3206	Building Shell	Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3207	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3208	Building Shell	Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3209	Building Shell	Thin Triple Windows - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3217	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3218	Building Shell	Thin Triple Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3219	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3220	Building Shell	Thin Triple Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	\$610,572	\$680,754	\$731,937	\$808,828	\$1,015,985	\$1,234,797	\$1,442,165	\$1,608,338	\$1,704,161	\$1,710,851	#####	\$1,470,702	\$1,269,146	\$1,052,475	\$844,485	\$659,932	\$505,195	\$380,707	\$283,529	\$0	\$0	
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	\$355,928	\$431,642	\$503,015	\$559,715	\$591,712	\$592,663	\$562,418	\$507,070	\$436,523	\$361,114	\$289,033	\$225,300	\$172,034	\$129,308	\$96,049	\$0	\$0	\$0	\$0	\$0	\$0	
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	\$83,644	\$93,124	\$99,980	\$110,321	\$138,369	\$167,914	\$195,811	\$218,033	\$230,658	\$231,192	\$219,552	\$198,091	\$170,658	\$141,283	\$113,169	\$88,284	\$67,465	\$50,750	\$37,727	\$0	\$0	
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
3228	Building Shell	Advanced Walls -																									





Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
6103	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	\$38,392	\$39,516	\$40,399	\$41,096	\$31,860	\$31,729	\$31,660	\$31,639	\$31,756	\$31,876	\$31,998	\$32,123	\$32,250	\$32,380	\$32,512	\$32,647	\$32,785	\$32,925	\$33,068	\$33,215		
6104	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	\$22,995	\$24,162	\$25,095	\$25,833	\$26,413	\$26,871	\$21,311	\$21,120	\$20,988	\$20,907	\$20,867	\$20,858	\$20,940	\$21,025	\$21,111	\$21,198	\$21,288	\$21,379	\$21,472	\$21,567	\$21,664	
6105	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	NC	\$1,979	\$2,683	\$3,240	\$3,710	\$4,264	\$5,055	\$5,863	\$6,575	\$6,837	\$6,776	\$6,345	\$6,303	\$6,109	\$5,560	\$5,685	\$5,550	\$5,732	\$12,186	\$14,896	\$15,518	\$15,816	
6106	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	\$11,860	\$12,632	\$13,258	\$13,753	\$14,140	\$14,440	\$15,863	\$11,804	\$11,648	\$11,530	\$11,443	\$11,385	\$11,348	\$11,320	\$11,300	\$11,357	\$11,388	\$11,418	\$11,448	\$11,482	\$11,515	\$11,548
6107	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	\$17,229	\$18,689	\$19,907	\$20,894	\$21,675	\$22,286	\$22,759	\$23,126	\$18,954	\$18,650	\$18,406	\$18,220	\$18,086	\$17,994	\$17,937	\$17,900	\$17,956	\$18,005	\$18,056	\$18,107	\$18,158	\$18,209
6108	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	NC	\$1,308	\$1,771	\$2,136	\$2,443	\$2,804	\$3,320	\$3,845	\$4,306	\$4,742	\$4,426	\$4,138	\$4,106	\$3,974	\$3,611	\$3,687	\$3,594	\$3,706	\$7,867	\$9,602	\$9,987	\$10,372	
6109	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	\$42,014	\$43,240	\$44,203	\$44,961	\$34,854	\$34,707	\$34,629	\$34,603	\$34,728	\$34,856	\$34,986	\$35,119	\$35,255	\$35,393	\$35,534	\$35,678	\$35,825	\$35,974	\$36,127	\$36,283	\$36,439	
6110	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	\$25,164	\$26,439	\$27,458	\$28,263	\$28,895	\$29,394	\$23,309	\$23,098	\$22,952	\$22,861	\$22,815	\$22,803	\$22,891	\$22,981	\$23,073	\$23,166	\$23,261	\$23,358	\$23,458	\$23,559	\$23,660	
6111	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	NC	\$2,166	\$2,936	\$3,545	\$4,059	\$4,665	\$5,530	\$6,412	\$7,191	\$7,477	\$7,409	\$6,937	\$6,891	\$6,679	\$6,077	\$6,213	\$6,065	\$6,264	\$13,314	\$16,274	\$16,951	\$17,428	
6112	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	\$12,363	\$13,167	\$13,818	\$14,334	\$14,736	\$15,047	\$15,287	\$12,298	\$12,135	\$12,010	\$11,920	\$11,857	\$11,818	\$11,796	\$11,826	\$11,856	\$11,887	\$11,919	\$11,951	\$11,984	\$12,016	
6113	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	\$17,960	\$19,480	\$20,748	\$21,775	\$22,588	\$23,222	\$23,714	\$24,094	\$19,746	\$19,428	\$19,172	\$18,977	\$18,835	\$18,738	\$18,677	\$18,644	\$18,693	\$18,743	\$18,794	\$18,845	\$18,896	
6114	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	NC	\$1,363	\$1,846	\$2,226	\$2,546	\$2,922	\$3,459	\$4,006	\$4,486	\$4,659	\$4,610	\$4,310	\$4,276	\$4,138	\$3,760	\$3,839	\$3,742	\$3,858	\$8,189	\$9,994	\$10,394	\$10,794	
6115	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	\$42,876	\$44,125	\$45,105	\$45,876	\$35,560	\$35,409	\$35,327	\$35,298	\$35,424	\$35,552	\$35,683	\$35,816	\$35,952	\$36,091	\$36,232	\$36,377	\$36,524	\$36,674	\$36,828	\$36,984	\$37,141	
6116	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	\$25,680	\$26,980	\$28,018	\$28,837	\$29,481	\$29,988	\$23,779	\$23,562	\$23,412	\$23,318	\$23,269	\$23,256	\$23,344	\$23,434	\$23,526	\$23,620	\$23,715	\$23,813	\$23,912	\$24,014	\$24,118	
6117	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	NC	\$2,210	\$2,996	\$3,617	\$4,142	\$4,759	\$5,642	\$6,542	\$7,335	\$7,627	\$7,557	\$7,075	\$7,028	\$6,811	\$6,197	\$6,336	\$6,184	\$6,386	\$13,573	\$16,590	\$17,279	\$17,968	
6118	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	\$12,808	\$13,641	\$14,314	\$14,847	\$15,262	\$15,583	\$15,831	\$12,734	\$12,565	\$12,435	\$12,340	\$12,274	\$12,232	\$12,209	\$12,238	\$12,269	\$12,300	\$12,331	\$12,364	\$12,397	\$12,430	
6119	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	\$18,607	\$20,181	\$21,493	\$22,554	\$23,395	\$24,050	\$24,557	\$24,949	\$20,445	\$20,114	\$19,848	\$19,644	\$19,495	\$19,393	\$19,328	\$19,293	\$19,342	\$19,392	\$19,442	\$19,494	\$19,546	
6120	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	NC	\$1,412	\$1,912	\$2,306	\$2,637	\$3,026	\$3,582	\$4,148	\$4,645	\$4,824	\$4,773	\$4,462	\$4,426	\$4,283	\$3,891	\$3,973	\$3,872	\$3,992	\$8,472	\$10,339	\$10,752	\$11,165	
6121	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	\$52,640	\$54,215	\$55,464	\$56,457	\$43,798	\$43,648	\$43,582	\$43,584	\$43,777	\$43,973	\$44,173	\$44,378	\$44,586	\$44,799	\$45,016	\$45,237	\$45,462	\$45,693	\$45,927	\$46,167	\$46,417	
6122	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	\$31,528	\$33,150	\$34,453	\$35,489	\$36,310	\$36,966	\$29,336	\$29,094	\$28,933	\$28,841	\$28,806	\$28,815	\$28,950	\$29,088	\$29,229	\$29,373	\$29,519	\$29,669	\$29,821	\$29,977	\$30,134	
6123	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	NC	\$2,713	\$3,681	\$4,448	\$5,097	\$5,862	\$6,954	\$8,070	\$9,057	\$9,425	\$9,348	\$8,759	\$8,708	\$8,446	\$7,692	\$7,871	\$7,690	\$7,949	\$16,911	\$20,689	\$21,597	\$22,505	
6124	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	\$13,205	\$14,062	\$14,755	\$15,304	\$15,731	\$16,060	\$16,315	\$13,122	\$12,947	\$12,812	\$12,713	\$12,644	\$12,600	\$12,575	\$12,604	\$12,635	\$12,665	\$12,697	\$12,729	\$12,762	\$12,795	
6125	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	\$19,183	\$20,804	\$22,156	\$23,249	\$24,113	\$24,787	\$25,307	\$25,709	\$21,066	\$20,724	\$20,448	\$20,236	\$20,081	\$19,975	\$19,906	\$19,868	\$19,917	\$19,966	\$20,017	\$20,068	\$20,119	
6126	HVAC	ASHP 24 SEER - hp baseline MO	HVAC	MF	NC	\$1,456	\$1,971	\$2,377	\$2,718	\$3,119	\$3,692	\$4,275	\$4,787	\$4,970	\$4,918	\$4,597	\$4,560	\$4,412	\$4,008	\$4,091	\$3,987	\$4,111	\$8,723	\$10,645	\$11,068	\$11,491	
6127	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$109,214	\$139,328	\$173,443	\$210,252	\$248,013	\$284,890	\$319,325	\$350,290	\$377,349	\$400,557	\$420,293	\$437,090	\$451,516	\$464,097	\$470,589	\$477,211	\$483,966	\$490,855	\$497,882	\$505,050	\$512,364	
6128	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6129	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$121,349	\$154,919	
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$50,125	\$63,946	\$79,603	\$96,497	\$113,828	\$130,753	\$146,557	\$160,769	\$173,188	\$183,839	\$192,897	\$200,606	\$207,227	\$213,002	\$215,981	\$219,020	\$222,120	\$225,282	\$228,508	\$231,797	\$235,146	
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$55,694	\$71,102	
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	\$7,016	\$9,600	\$13,021	\$17,456	\$23,061	\$29,917	\$37,984	\$47,059	\$56,775	\$66,654	\$76,202	\$85,009	\$92,812	\$99,510	\$105,133	\$109,796	\$113,650	\$116,854	\$119,551	\$122,662	\$126,192	
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,292	\$4,556	
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6137	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6138	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6139	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	\$241,143	\$276,828	\$310,099	\$339,963	\$366,004	\$388,282	\$407,170	\$423,193	\$436,904	\$448,817	\$454,832	\$460,967	\$467,226	\$473,609	\$480,120	\$486,762	\$493,536	\$500,446	\$507,493	\$514,682	\$522,000	
6140	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6141	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6142	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$20,777	\$26,467	\$32,900	\$39,826	\$46,912	\$53,811	\$60,230	\$65,978	\$70,975	\$75,236	\$78,834	\$81,872	\$84,459	\$86,695	\$87,790	\$88,906	\$90,045	\$91,207	\$92,392	\$93,600	\$94,830	
6143	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6144	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,815	\$29,086	
6145	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	\$166,092	\$215,896	\$274,654	\$340,946	\$412,151	\$484,821	\$555,365	\$620,774	\$679,098	\$729,553	\$772,311	\$808,164	\$838,191	\$863,528	\$885,215	\$895,209	\$905,404	\$915,802	\$926,407	\$937,225	\$948,257	
6146	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6147	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$104,211	\$136,614	
6148	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$94,042	\$119,992	\$149,395	\$181,129	\$213,693	\$245,504	\$275,219	\$301,952	\$325,326	\$345,385	\$362,456	\$376,996	\$389,495	\$400,405	\$406,064	\$411,836	\$417,724	\$423,729	\$429,854	\$436,102	\$442,474	
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$																			

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,579	\$18,920
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	\$7,280	\$9,964	\$13,516	\$18,123	\$23,945	\$31,069	\$39,454	\$48,889	\$58,992	\$69,269	\$79,204	\$88,372	\$96,500	\$103,482	\$109,349	\$114,217	\$118,247	\$121,600	\$124,429	\$125,606	
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,518	\$4,868
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	\$246,712	\$282,931	\$316,611	\$346,749	\$372,932	\$395,232	\$414,043	\$429,907	\$443,395	\$455,035	\$460,682	\$466,441	\$472,315	\$478,307	\$484,418	\$490,652	\$497,010	\$503,496	\$510,111	\$516,859	
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$206,242	\$237,715
6166	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6167	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6168	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6169	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6170	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6171	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6172	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$18,103	\$23,054	\$28,648	\$34,668	\$40,824	\$46,813	\$52,382	\$57,363	\$61,689	\$65,373	\$68,479	\$71,097	\$73,322	\$75,241	\$76,169	\$77,115	\$78,080	\$79,064	\$80,068	\$81,093	
6173	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6174	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,170	\$25,710
6175	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	\$4,085	\$5,688	\$7,867	\$10,783	\$14,608	\$19,500	\$25,561	\$32,789	\$41,040	\$50,019	\$59,317	\$68,497	\$77,176	\$85,096	\$92,136	\$98,295	\$103,651	\$108,322	\$112,439	\$116,126	
6176	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6177	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,855	\$6,762
6178	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	\$161,041	\$209,265	\$266,135	\$330,267	\$399,116	\$469,341	\$537,465	\$600,577	\$656,799	\$705,376	\$746,485	\$780,895	\$809,657	\$833,872	\$854,550	\$863,931	\$873,500	\$883,260	\$893,215	\$903,369	
6179	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6180	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,914	\$132,286
6181	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$90,850	\$115,824	\$144,089	\$174,555	\$205,772	\$236,216	\$264,597	\$290,071	\$312,280	\$331,278	\$347,383	\$361,042	\$372,728	\$382,880	\$388,000	\$393,223	\$398,550	\$403,983	\$409,525	\$415,178	
6182	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6183	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$102,854	\$131,247
6184	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$39,893	\$50,859	\$63,270	\$76,648	\$90,356	\$103,724	\$116,186	\$127,372	\$137,124	\$145,466	\$152,538	\$158,536	\$163,667	\$168,125	\$170,373	\$172,666	\$175,005	\$177,391	\$179,825	\$182,307	
6185	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6186	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,164	\$57,631
6187	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	\$279,480	\$320,317	\$358,233	\$392,099	\$421,454	\$446,391	\$467,361	\$484,981	\$499,904	\$512,727	\$518,787	\$524,968	\$531,273	\$537,703	\$544,262	\$550,953	\$557,777	\$564,738	\$571,838	\$579,080	
6188	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6189	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$225,064	\$259,481
6190	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6191	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6192	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6193	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$24,317	\$30,940	\$38,415	\$46,445	\$54,644	\$62,606	\$69,991	\$76,580	\$82,283	\$87,120	\$91,180	\$94,584	\$97,459	\$99,924	\$101,069	\$102,236	\$103,428	\$104,643	\$105,882	\$107,146	
6194	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6195	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,374	\$34,867
6196	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$92,201	\$117,523	\$146,173	\$177,043	\$208,661	\$239,484	\$268,204	\$293,965	\$316,409	\$335,591	\$351,836	\$365,599	\$377,359	\$387,561	\$392,668	\$397,877	\$403,190	\$408,609	\$414,137	\$419,775	
6197	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6198	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$104,556	\$133,395
6199	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$40,483	\$51,601	\$64,180	\$77,735	\$91,618	\$105,151	\$117,761	\$129,072	\$138,927	\$147,349	\$154,482	\$160,524	\$165,688	\$170,167	\$172,410	\$174,697	\$177,030	\$179,409	\$181,836	\$184,312	
6200	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6201	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,907	\$58,570
6202	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	\$215,770	\$246,644	\$275,110	\$300,320	\$321,950	\$340,097	\$355,130	\$367,544	\$377,851	\$386,520	\$390,055	\$393,661	\$397,340	\$401,092	\$404,919	\$408,822	\$412,804	\$416,865	\$421,008	\$425,233	



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6203	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6204	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$130,567	\$150,207
6205	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6206	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6207	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6208	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$20,487	\$25,986	\$32,163	\$38,766	\$45,466	\$51,928	\$57,872	\$63,121	\$67,609	\$71,359	\$74,448	\$76,984	\$79,074	\$80,818	\$81,486	\$82,167	\$82,863	\$83,571	\$84,295	\$85,032	\$85,332
6209	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6210	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,051	\$26,711
6211	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$102,589	\$130,848	\$162,849	\$197,366	\$232,762	\$267,313	\$299,558	\$328,536	\$353,838	\$375,520	\$393,939	\$409,597	\$423,027	\$434,725	\$440,715	\$446,826	\$453,059	\$459,416	\$465,900	\$472,515	\$475,515
6212	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6213	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$116,303	\$148,466
6214	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$43,064	\$54,926	\$68,359	\$82,848	\$97,707	\$112,210	\$125,745	\$137,909	\$148,530	\$157,632	\$165,364	\$171,936	\$177,574	\$182,484	\$184,999	\$187,564	\$190,180	\$192,849	\$195,571	\$198,347	\$198,347
6215	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6216	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48,820	\$62,322
6217	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6218	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6219	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6220	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	\$212,271	\$275,384	\$349,647	\$433,188	\$522,629	\$613,570	\$701,465	\$782,535	\$854,370	\$916,036	\$967,810	\$1,010,739	\$1,046,224	\$1,075,721	\$1,100,562	\$1,110,793	\$1,121,228	\$1,131,873	#####	#####	#####
6221	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6222	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$113,033	\$148,196
6223	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$89,496	\$113,950	\$141,574	\$171,286	\$201,658	\$231,195	\$258,642	\$283,181	\$304,476	\$322,591	\$337,849	\$350,694	\$361,595	\$370,983	\$375,482	\$380,070	\$384,750	\$389,523	\$394,392	\$399,359	\$399,359
6224	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6225	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$99,561	\$126,880
6226	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$40,339	\$51,362	\$63,813	\$77,205	\$90,895	\$104,209	\$116,580	\$127,641	\$137,239	\$145,404	\$152,281	\$158,071	\$162,985	\$167,216	\$169,244	\$171,312	\$173,421	\$175,573	\$177,768	\$180,006	\$180,006
6227	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6228	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$44,876	\$57,190
6229	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6230	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6231	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6232	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	\$212,841	\$276,132	\$350,608	\$434,393	\$524,100	\$615,317	\$703,484	\$784,814	\$856,886	\$918,764	\$970,724	\$1,013,815	\$1,049,443	\$1,079,067	\$1,104,022	\$1,114,322	\$1,124,828	\$1,135,544	#####	#####	#####
6233	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6234	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$113,847	\$149,264
6235	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$94,932	\$120,940	\$150,344	\$182,000	\$214,393	\$245,935	\$275,287	\$301,574	\$324,433	\$343,927	\$360,394	\$374,303	\$386,149	\$396,392	\$401,417	\$406,543	\$411,770	\$417,103	\$422,542	\$428,090	\$428,090
6236	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6237	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$107,432	\$136,999
6238	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	\$41,315	\$52,634	\$65,430	\$79,207	\$93,305	\$107,032	\$119,806	\$131,246	\$141,195	\$149,678	\$156,845	\$162,898	\$168,054	\$172,512	\$174,698	\$176,929	\$179,204	\$181,525	\$183,892	\$186,306	\$186,306
6239	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6240	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,755	\$59,623
6241	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6242	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6243	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6244	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	\$213,357	\$276,809	\$351,478	\$435,483	\$525,430	\$616,897	\$705,312	\$786,876	\$859,162	\$921,232	\$973,360	\$1,016,599	\$1,052,356	\$1,082,094	\$1,107,152	\$1,117,514	\$1,128,084	\$1,138,866	#####	#####	#####
6245	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6246	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$114,583	\$150,231
6247	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$131,570	\$167,722	\$208,632	\$252,720	\$297,888	\$341,928	\$382,975	\$419,806	\$451,907	\$479,355	\$502,612	\$522,328	\$539,186	\$553,821	\$523,345	\$520,392	\$516,192	\$511,198	\$506,016	\$501,289	\$501,289

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6248	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$60,385	\$76,978	\$95,753	\$115,988	\$136,718	\$156,931	\$175,770	\$192,674	\$207,407	\$220,004	\$230,678	\$239,727	\$247,464	\$254,181	\$240,194	\$238,839	\$236,911	\$234,619	\$232,241	\$230,071
6249	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$14,208	\$19,435	\$23,674	\$27,348	\$31,710	\$37,927	\$44,377	\$50,214	\$52,689	\$52,689	\$49,781	\$49,907	\$48,812	\$44,825	\$46,255	\$45,572	\$47,500	\$101,910	\$125,732	\$132,187
6250	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6251	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	\$242,952	\$318,075	\$407,530	\$509,478	\$620,211	\$734,660	\$847,386	\$953,696	\$1,050,411	\$1,136,083	#####	\$1,275,360	\$1,331,465	\$1,380,675	\$1,424,517	\$1,449,847	\$1,475,683	\$1,502,035	#####	#####
6252	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$6,316	\$8,609	\$10,451	\$12,031	\$13,902	\$16,571	\$19,322	\$21,789	\$22,785	\$22,708	\$21,381	\$21,363	\$20,824	\$19,059	\$19,601	\$19,246	\$19,994	\$42,753	\$52,753	\$55,090
6253	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$152,284	\$194,212	\$241,687	\$292,885	\$345,377	\$396,605	\$444,403	\$487,344	\$524,827	\$556,933	\$584,194	\$607,356	\$627,212	\$644,496	\$609,273	\$606,075	\$601,419	\$595,832	\$590,022	\$584,734
6254	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$69,892	\$89,135	\$110,924	\$134,422	\$158,514	\$182,025	\$203,963	\$223,671	\$240,874	\$255,609	\$268,121	\$278,752	\$287,865	\$295,797	\$279,631	\$278,163	\$276,027	\$273,463	\$270,796	\$268,369
6255	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$16,445	\$22,504	\$27,425	\$31,695	\$36,765	\$43,992	\$51,495	\$58,292	\$61,191	\$61,216	\$57,861	\$58,031	\$56,781	\$52,164	\$53,850	\$53,075	\$55,342	\$118,782	\$146,605	\$154,191
6256	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	\$141,299	\$162,531	\$182,423	\$200,381	\$216,148	\$229,745	\$241,380	\$251,353	\$259,983	\$267,569	\$261,822	\$264,504	\$267,360	\$270,435	\$273,747	\$277,298	\$281,075	\$285,059	\$289,231	\$293,570
6257	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$18,664	\$23,718	\$29,412	\$35,517	\$41,735	\$47,757	\$53,325	\$58,273	\$62,537	\$66,132	\$69,129	\$71,622	\$73,709	\$75,481	\$71,113	\$70,499	\$69,721	\$68,840	\$67,940	\$67,107
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$6,884	\$9,387	\$11,399	\$13,128	\$15,175	\$18,094	\$21,106	\$23,808	\$24,905	\$24,829	\$23,387	\$23,375	\$22,792	\$20,867	\$21,468	\$21,087	\$21,914	\$46,876	\$57,662	\$60,443
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$138,621	\$176,594	\$219,524	\$265,742	\$313,033	\$359,079	\$401,927	\$440,298	\$473,663	\$502,114	\$526,143	\$546,438	\$563,722	\$578,664	\$546,484	\$543,066	\$538,554	\$532,823	\$527,105	\$521,868
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$63,621	\$81,050	\$100,753	\$124,964	\$143,669	\$164,803	\$184,468	\$202,079	\$217,392	\$230,450	\$241,478	\$250,793	\$258,725	\$265,583	\$250,813	\$249,245	\$247,082	\$244,544	\$240,919	\$239,516
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$14,970	\$20,463	\$24,910	\$28,757	\$33,322	\$39,830	\$46,573	\$52,665	\$55,226	\$55,191	\$52,112	\$52,211	\$51,033	\$46,836	\$48,300	\$47,557	\$49,539	\$106,221	\$130,972	\$137,614
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	\$87,223	\$100,431	\$112,835	\$124,066	\$133,959	\$142,524	\$149,886	\$156,227	\$161,743	\$166,617	\$163,188	\$165,009	\$166,940	\$169,010	\$171,230	\$173,601	\$176,116	\$178,764	\$181,531	\$184,406
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	\$329,867	\$432,180	\$554,126	\$693,239	\$844,503	\$1,001,030	\$1,155,411	\$1,301,234	\$1,434,138	\$1,552,112	#####	\$1,744,597	\$1,822,471	\$1,890,978	\$1,952,193	\$1,988,076	\$2,024,676	\$2,062,009	#####	#####
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$8,358	\$11,398	\$13,843	\$15,944	\$18,432	\$21,981	\$25,643	\$28,931	\$30,268	\$30,179	\$28,430	\$28,420	\$27,715	\$25,378	\$26,112	\$25,653	\$26,662	\$57,039	\$70,173	\$73,568
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$150,500	\$191,725	\$238,329	\$288,499	\$339,833	\$389,815	\$436,321	\$477,967	\$514,177	\$545,050	\$571,124	\$593,142	\$611,892	\$628,099	\$593,158	\$589,438	\$584,313	\$578,298	\$572,082	\$566,388
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$69,074	\$87,994	\$109,383	\$132,409	\$155,970	\$178,909	\$200,253	\$219,367	\$235,986	\$250,156	\$262,122	\$272,228	\$280,833	\$288,272	\$272,235	\$270,528	\$268,176	\$265,415	\$262,562	\$259,949
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$16,253	\$22,216	\$27,044	\$31,220	\$36,175	\$43,239	\$50,559	\$57,171	\$59,949	\$59,910	\$56,567	\$56,673	\$55,394	\$50,837	\$52,426	\$51,618	\$53,768	\$115,287	\$142,147	\$149,354
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	\$80,386	\$92,579	\$104,036	\$114,416	\$123,566	\$131,495	\$138,316	\$144,198	\$149,319	\$153,850	\$150,714	\$152,426	\$154,240	\$156,822	\$158,264	\$160,486	\$162,841	\$165,319	\$167,909	\$170,599
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	\$291,471	\$381,921	\$489,744	\$612,765	\$746,556	\$885,029	\$1,021,634	\$1,159,699	\$1,268,364	\$1,372,847	#####	\$1,543,420	\$1,612,477	\$1,673,256	\$1,727,592	\$1,759,515	\$1,792,077	\$1,825,290	#####	#####
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$8,746	\$11,925	\$14,481	\$16,675	\$19,274	\$22,981	\$26,805	\$30,235	\$31,626	\$31,528	\$29,696	\$29,679	\$28,938	\$26,493	\$27,254	\$26,769	\$27,817	\$59,500	\$73,186	\$76,713
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$143,346	\$182,502	\$226,729	\$274,295	\$322,912	\$370,186	\$414,108	\$453,368	\$487,431	\$516,399	\$540,789	\$561,315	\$578,726	\$593,716	\$560,369	\$556,540	\$551,391	\$545,410	\$539,247	\$533,584
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$65,790	\$83,761	\$104,059	\$125,890	\$148,203	\$169,900	\$190,059	\$208,077	\$223,711	\$237,006	\$248,200	\$257,620	\$265,612	\$272,491	\$257,187	\$255,429	\$253,066	\$250,321	\$247,492	\$244,893
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$15,480	\$21,147	\$25,727	\$29,683	\$34,374	\$41,062	\$47,985	\$54,228	\$56,831	\$56,761	\$53,562	\$53,632	\$52,391	\$48,054	\$49,528	\$48,737	\$50,739	\$108,730	\$133,989	\$140,703
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$27,486	\$34,904	\$43,251	\$52,190	\$61,282	\$70,073	\$78,185	\$85,377	\$91,555	\$96,747	\$101,055	\$104,621	\$107,590	\$110,094	\$103,644	\$102,673	\$101,463	\$100,107	\$98,725	\$97,441
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$8,172	\$11,135	\$13,512	\$15,549	\$17,960	\$21,400	\$24,943	\$28,116	\$29,389	\$29,278	\$27,557	\$27,522	\$26,816	\$24,533	\$25,221	\$24,755	\$25,706	\$54,945	\$67,537	\$70,742
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$134,537	\$171,197	\$212,574	\$257,037	\$302,437	\$346,535	\$387,450	\$423,965	\$455,583	\$482,411	\$504,937	\$523,835	\$539,810	\$553,511	\$522,159	\$518,330	\$513,277	\$507,456	\$501,473	\$495,962
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$61,747	\$78,572	\$97,563	\$117,969	\$138,806	\$159,045	\$177,824	\$194,582	\$209,094	\$221,407	\$231,746	\$240,419	\$247,751	\$254,039	\$239,649	\$237,892	\$235,573	\$232,902	\$230,155	\$227,626
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$14,529	\$19,837	\$24,121	\$27,815	\$32,194	\$38,438	\$44,896	\$50,711	\$53,118	\$53,025	\$50,011	\$50,051	\$48,868	\$44,800	\$46,151	\$45,391	\$47,232	\$101,164	\$124,603	\$130,783
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	\$121,668	\$159,449	\$204,495	\$255,901	\$311,820	\$369,710	\$426,836	\$480,826	\$530,065	\$573,807	\$612,045	\$645,270	\$674,228	\$699,729	\$722,541	\$735,982	\$749,692	\$763,676	\$777,940	\$792,488
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	\$9,201	\$12,540	\$15,221	\$17,520	\$20,241	\$24,123	\$28,125	\$31,710	\$33,155	\$33,037	\$31,103	\$31,071	\$30,282	\$28,494	\$27,974	\$29,056	\$62,123	\$76,379	\$80,023	
6284	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$171,322	\$218,149	\$271,051	\$327,959	\$386,139	\$442,728	\$495,323	\$542,354	\$583,178	\$617,917	\$647,187	\$671,838	\$692,768	\$710,803	\$670,967	\$666,467	\$660,384	\$652,304	\$646,003	\$639,300
6285	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	\$78,630	\$100,122	\$124,401	\$150,520	\$177,222	\$203,194	\$227,333	\$248,918	\$267,655	\$283,599	\$297,032	\$308,346	\$317,952	\$326,229	\$307,946	\$305,881	\$303,089	\$299,840	\$296,489	\$293,412
6286	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	NC	\$18,501	\$25,278	\$30,757	\$35,490	\$41,104	\$49,108	\$57,395	\$64,872	\$67,994	\$67,920	\$64,100	\$64,193	\$62,716	\$57,531	\$59,303	\$58,363	\$60,768	\$130,240	\$160,515	\$168,580
6287	HVAC	ASHP 21																							



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6370	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$22,094	\$25,884
6371	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	\$13,153	\$14,074	\$14,840	\$15,467	\$15,977	\$16,394	\$16,739	\$16,860	\$16,983	\$17,109	\$17,238	\$17,368	\$17,502	\$17,638	\$17,777	\$17,919	\$18,064	\$18,211	\$18,362	\$18,515
6372	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6373	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,800	\$10,439
6374	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER1	\$177,904	\$182,787	\$186,872	\$188,471	\$190,103	\$191,767	\$193,464	\$195,196	\$196,962	\$198,763	\$200,601	\$202,475	\$204,387	\$206,337	\$208,326	\$210,354	\$212,423	\$214,534	\$216,687	\$218,883
6375	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6376	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$121,183	\$123,837
637A	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	\$36,646	\$38,188	\$39,441	\$40,464	\$41,306	\$41,597	\$41,894	\$42,197	\$42,506	\$42,821	\$43,142	\$43,470	\$43,804	\$44,145	\$44,493	\$44,848	\$45,210	\$45,579	\$45,955	\$46,340
637B	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
637C	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,305	\$28,324
6377	HVAC	Central AC 18 SEER ER	HVAC	SF	ER1	\$234,970	\$240,826	\$245,600	\$247,087	\$248,603	\$250,150	\$251,728	\$253,338	\$254,979	\$256,654	\$258,362	\$260,104	\$261,881	\$263,693	\$265,542	\$267,428	\$269,351	\$271,313	\$273,314	\$275,355
6378	HVAC	Central AC 18 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6379	HVAC	Central AC 18 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$187,813	\$191,816
6380	HVAC	Central AC 18 SEER ER	HVAC	SF	ER1	\$93,996	\$96,996	\$99,421	\$101,401	\$102,023	\$102,658	\$103,305	\$103,966	\$104,640	\$105,327	\$106,028	\$106,743	\$107,472	\$108,216	\$108,974	\$109,748	\$110,538	\$111,343	\$112,164	\$113,002
6381	HVAC	Central AC 18 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6382	HVAC	Central AC 18 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$75,132	\$77,256
6383	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER1	\$172,677	\$201,697	\$229,413	\$254,609	\$276,539	\$294,948	\$309,976	\$322,007	\$331,529	\$339,040	\$344,988	\$346,293	\$347,625	\$348,983	\$350,368	\$351,781	\$353,222	\$354,692	\$356,191	\$357,721
6384	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6385	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,111	\$32,936
6386	HVAC	Central AC 18 SEER ER	HVAC	MF	ER1	\$16,578	\$17,714	\$18,649	\$19,408	\$20,019	\$20,511	\$20,910	\$21,029	\$21,150	\$21,274	\$21,400	\$21,528	\$21,660	\$21,794	\$21,930	\$22,069	\$22,212	\$22,356	\$22,504	\$22,655
6387	HVAC	Central AC 18 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6388	HVAC	Central AC 18 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,214	\$14,066
6389	HVAC	Central AC 18 SEER ER	HVAC	MF	ER1	\$52,826	\$55,613	\$57,872	\$59,688	\$61,149	\$62,334	\$63,683	\$63,039	\$63,403	\$63,774	\$64,152	\$64,538	\$64,931	\$65,333	\$65,742	\$66,160	\$66,586	\$67,020	\$67,463	\$67,915
6390	HVAC	Central AC 18 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6391	HVAC	Central AC 18 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$42,105	\$44,160
6392	HVAC	Central AC 19 SEER ER	HVAC	SF	ER1	\$140,810	\$144,414	\$147,373	\$148,363	\$149,373	\$150,404	\$151,454	\$152,526	\$153,620	\$154,735	\$155,872	\$157,033	\$158,216	\$159,423	\$160,654	\$161,910	\$163,191	\$164,498	\$165,831	\$167,190
6393	HVAC	Central AC 19 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6394	HVAC	Central AC 19 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,825	\$14,289
6395	HVAC	Central AC 19 SEER ER	HVAC	SF	ER1	\$96,607	\$99,755	\$102,317	\$104,422	\$105,133	\$105,858	\$106,598	\$107,352	\$108,122	\$108,907	\$109,707	\$110,524	\$111,357	\$112,207	\$113,073	\$113,957	\$114,859	\$115,778	\$116,716	\$117,673
6396	HVAC	Central AC 19 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6397	HVAC	Central AC 19 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$76,721	\$78,946
6398	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER1	\$181,887	\$212,635	\$242,061	\$268,880	\$292,295	\$312,031	\$328,225	\$341,274	\$351,691	\$359,994	\$366,655	\$368,394	\$370,167	\$371,976	\$373,821	\$375,703	\$377,623	\$379,581	\$381,578	\$383,615
6399	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6400	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,739	\$41,931
6401	HVAC	Central AC 19 SEER ER	HVAC	MF	ER1	\$16,856	\$17,977	\$18,892	\$19,624	\$20,204	\$20,660	\$21,022	\$21,100	\$21,180	\$21,261	\$21,345	\$21,429	\$21,516	\$21,604	\$21,694	\$21,786	\$21,880	\$21,975	\$22,073	\$22,172
6402	HVAC	Central AC 19 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6403	HVAC	Central AC 19 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,141	\$16,118
6404	HVAC	Central AC 19 SEER ER	HVAC	MF	ER1	\$52,313	\$54,973	\$57,100	\$58,782	\$60,107	\$61,155	\$61,379	\$61,608	\$61,841	\$62,079	\$62,322	\$62,570	\$62,823	\$63,080	\$63,343	\$63,611	\$63,885	\$64,164	\$64,448	\$64,739
6405	HVAC	Central AC 19 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6406	HVAC	Central AC 19 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,991	\$49,287
6407	HVAC	Central AC 20 SEER ER	HVAC	SF	ER1	\$146,359	\$149,939	\$152,841	\$153,696	\$154,568	\$155,458	\$156,365	\$157,291	\$158,235	\$159,198	\$160,180	\$161,181	\$162,203	\$163,245	\$164,308	\$165,393	\$166,499	\$167,627	\$168,778	\$169,951
6408	HVAC	Central AC 20 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6409	HVAC	Central AC 20 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$121,477	\$124,079
6410	HVAC	Central AC 20 SEER ER	HVAC	SF	ER1	\$117,097	\$120,780	\$123,744	\$126,149	\$128,865	\$127,595	\$128,340	\$129,099	\$129,874	\$130,665	\$131,471	\$132,293	\$133,131	\$133,987	\$134,859	\$135,749	\$136,657	\$137,583	\$138,527	\$139,491
6411	HVAC	Central AC 20 SEER ER	HVAC	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6412	HVAC	Central AC 20 SEER ER	HVAC	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$97,190	\$99,949
6413	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER1	\$176,839	\$206,640	\$235,128	\$261,058	\$283,659	\$302,668	\$318,222	\$330,714	\$340,640	\$348,509	\$354,779	\$356,280	\$357,811	\$359,373	\$360,966	\$362,591	\$364,248	\$365,939	\$367,663	\$369,422
6414	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6415	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,736	\$43,051
6416	HVAC	Central AC 20 SEER ER	HVAC	MF	ER1	\$18,674	\$19,911	\$20,919	\$21,724	\$22,360	\$22,859	\$23,252	\$23,332	\$23,414	\$23,498	\$23,583	\$23,670	\$23,758	\$23,849	\$23,941	\$24,035	\$24,131	\$24,228	\$24,328	\$24,430
6417	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6418	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,051	\$18,151
6419	HVAC	Central AC 20 SEER ER	HVAC	MF	ER1	\$56,816	\$59,689	\$61,983	\$63,792	\$65,212	\$66,331	\$66,556	\$66,786	\$67,020	\$67,259	\$67,503	\$67,751	\$68,005	\$68,263	\$68,527	\$68,796	\$69,071	\$69,351	\$69,636	\$69,928
6420	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6421	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51,876	\$54,412
6422	HVAC	Central AC 21 SEER ER	HVAC	SF	ER1	\$157,566	\$161,345	\$164,391	\$165,232	\$166,091	\$166,966	\$167,859	\$168,769	\$169,698	\$170,646	\$171,612	\$172,598	\$173,603	\$174,629	\$175,675					





Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
6592	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6593	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	\$1,868	\$1,918	\$1,960	\$1,976	\$1,992	\$2,009	\$2,025	\$2,043	\$2,060	\$2,078	\$2,096	\$2,115	\$2,134	\$2,153	\$2,173	\$2,193	\$2,213	\$2,234	\$2,256	\$2,277	\$2,297	
6594	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6595	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,522	\$1,559	
6596	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	\$18,468	\$19,070	\$19,559	\$19,962	\$20,097	\$20,236	\$20,377	\$20,521	\$20,668	\$20,817	\$20,970	\$21,126	\$21,285	\$21,447	\$21,613	\$21,781	\$21,953	\$22,129	\$22,308	\$22,490	\$22,674	
6597	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	\$6,780	\$7,001	\$7,181	\$7,328	\$7,478	\$7,629	\$7,781	\$7,934	\$8,088	\$8,243	\$8,399	\$8,556	\$8,714	\$8,873	\$9,033	\$9,194	\$9,356	\$9,519	\$9,683	\$9,848	\$10,014	
6598	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	NC	\$529	\$720	\$872	\$1,002	\$1,155	\$1,374	\$1,599	\$1,799	\$1,878	\$1,867	\$1,754	\$1,749	\$1,701	\$1,554	\$1,595	\$1,562	\$1,620	\$3,456	\$4,240	\$4,434	\$4,634	
6599	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	\$5,822	\$6,213	\$6,532	\$6,790	\$6,994	\$7,156	\$7,286	\$7,317	\$7,349	\$7,382	\$7,416	\$7,450	\$7,485	\$7,520	\$7,555	\$7,594	\$7,631	\$7,670	\$7,709	\$7,749	\$7,789	
6600	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	\$3,641	\$3,725	\$3,791	\$3,806	\$3,822	\$3,838	\$3,855	\$3,871	\$3,888	\$3,906	\$3,923	\$3,941	\$3,960	\$3,979	\$3,998	\$4,017	\$4,037	\$4,058	\$4,078	\$4,100	\$4,122	
6601	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	NC	\$245	\$333	\$402	\$461	\$530	\$629	\$730	\$819	\$852	\$845	\$792	\$787	\$763	\$695	\$711	\$695	\$718	\$1,528	\$1,870	\$1,949	\$2,028	
6602	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	\$97,888	\$84,783	\$70,570	\$56,835	\$44,582	\$34,258	\$25,915	\$19,374	\$0	\$0	\$106,260	\$92,123	\$76,752	\$61,874	\$48,581	\$37,367	\$28,294	\$21,173	\$0	\$0	\$0	
6603	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	\$39,572	\$46,506	\$52,190	\$55,648	\$56,221	\$53,819	\$48,950	\$42,514	\$35,484	\$28,658	\$66,446	\$69,018	\$71,193	\$71,800	\$62,621	\$60,003	\$54,627	\$47,491	\$39,677	\$32,074	\$25,471	
6604	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	\$27,217	\$41,397	\$46,645	\$50,685	\$56,606	\$71,863	\$88,274	\$104,202	\$117,456	\$125,791	\$159,034	\$170,505	\$165,987	\$156,380	\$147,457	\$149,684	\$154,795	\$161,463	\$167,250	\$169,377	\$171,504	
6605	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	\$38,014	\$30,610	\$24,006	\$18,444	\$13,949	\$10,427	\$0	\$0	\$0	\$0	\$41,266	\$33,260	\$26,109	\$30,079	\$15,200	\$11,373	\$0	\$0	\$0	\$0	\$0	\$0
6606	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	\$12,686	\$13,524	\$13,660	\$13,074	\$11,889	\$10,324	\$8,615	\$6,956	\$5,471	\$4,215	\$17,271	\$17,415	\$15,186	\$14,548	\$13,242	\$11,510	\$9,614	\$7,771	\$6,117	\$4,717	\$3,534	
6607	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	\$5,687	\$8,651	\$9,747	\$10,592	\$11,829	\$15,017	\$18,446	\$21,775	\$24,544	\$26,286	\$33,233	\$35,630	\$34,686	\$32,678	\$30,814	\$31,279	\$32,347	\$33,741	\$34,950	\$35,394	\$35,394	
6608	HVAC	Learning Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	\$103,851	\$110,790	\$111,989	\$107,259	\$97,606	\$84,816	\$70,829	\$57,231	\$45,040	\$34,724	\$142,397	\$143,684	\$125,378	\$120,198	\$109,486	\$95,230	\$79,601	\$64,380	\$50,714	\$39,135	\$30,135	
6609	HVAC	Learning Thermostat - ASHP	New Construction	SF	NC	\$1,259	\$1,801	\$2,310	\$2,824	\$3,473	\$4,407	\$5,455	\$6,497	\$7,129	\$7,405	\$15,089	\$16,426	\$16,700	\$16,170	\$16,747	\$17,483	\$18,472	\$27,890	\$21,334	\$21,605	\$21,605	
6610	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	NC	\$230	\$340	\$457	\$593	\$784	\$1,082	\$1,470	\$1,931	\$2,338	\$2,666	\$5,911	\$6,918	\$7,466	\$7,577	\$8,133	\$8,714	\$9,469	\$14,574	\$11,287	\$11,227	\$11,227	
6611	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6612	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6613	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6614	HVAC	Learning Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6615	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	\$8,829	\$7,973	\$6,875	\$5,697	\$4,567	\$3,566	\$2,728	\$2,054	\$1,528	\$0	\$9,147	\$8,265	\$7,131	\$5,912	\$4,743	\$3,706	\$2,836	\$2,137	\$1,591	\$0	\$0	
6616	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	\$3,548	\$4,148	\$4,630	\$4,911	\$4,935	\$4,699	\$4,251	\$3,672	\$3,048	\$2,448	\$5,646	\$5,832	\$5,983	\$6,000	\$5,204	\$4,959	\$4,544	\$3,881	\$3,225	\$2,592	\$2,592	
6617	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	\$1,305	\$1,973	\$2,211	\$2,389	\$2,654	\$3,351	\$4,093	\$4,805	\$5,387	\$5,738	\$7,215	\$7,694	\$7,449	\$6,981	\$6,547	\$6,611	\$6,801	\$7,057	\$7,271	\$7,326	\$7,326	
6618	HVAC	Learning Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6619	HVAC	Learning Thermostat - ASHP	New Construction	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6620	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6621	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	\$813,641	\$706,868	\$590,161	\$476,756	\$375,113	\$289,131	\$219,386	\$164,517	\$0	\$0	\$910,630	\$791,888	\$661,777	\$535,121	\$421,435	\$325,143	\$246,945	\$185,357	\$0	\$0	\$0	
6622	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	\$211,300	\$249,065	\$280,338	\$299,801	\$303,784	\$291,659	\$266,052	\$231,746	\$193,991	\$157,122	\$365,359	\$380,588	\$393,704	\$398,186	\$348,262	\$334,640	\$305,513	\$266,338	\$223,129	\$180,869	\$140,869	
6623	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	\$217,195	\$331,092	\$373,886	\$407,155	\$455,701	\$579,759	\$713,661	\$844,199	\$953,540	\$1,023,293	#####	\$1,392,619	\$1,358,392	\$1,282,265	\$1,211,430	\$1,232,068	\$1,276,537	\$1,334,003	#####	#####	#####	
6624	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	\$341,454	\$275,787	\$216,948	\$167,187	\$126,834	\$95,094	\$0	\$0	\$0	\$0	\$382,156	\$308,958	\$243,275	\$187,655	\$142,496	\$106,939	\$0	\$0	\$0	\$0	\$0	\$0
6625	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	\$122,000	\$130,447	\$132,156	\$126,859	\$115,701	\$100,765	\$84,334	\$68,295	\$53,865	\$41,618	\$171,042	\$172,961	\$151,250	\$145,311	\$132,642	\$115,615	\$96,843	\$78,489	\$61,955	\$47,908	\$47,908	
6626	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	\$49,869	\$76,021	\$85,847	\$93,486	\$104,632	\$133,117	\$163,862	\$193,834	\$232,939	\$234,955	\$297,649	\$319,755	\$311,896	\$294,417	\$278,153	\$282,891	\$293,102	\$306,296	\$317,856	\$322,482	\$322,482	
6627	HVAC	Learning Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	#####	#####	#####	\$1,063,190	\$970,281	\$845,546	\$708,105	\$573,778	\$452,818	\$350,076	#####	\$1,456,601	\$1,274,508	\$1,225,171	\$1,118,994	\$975,908	\$817,914	\$663,269	\$523,844	\$405,294	\$405,294	
6628	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	SF	NC	\$10,974	\$15,721	\$20,182	\$24,694	\$30,408	\$38,623	\$47,854	\$57,050	\$62,664	\$65,147	\$132,877	\$144,779	\$147,327	\$142,777	\$148,004	\$154,640	\$163,528	\$247,105	\$189,175	\$186,937	\$186,937	
6629	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	\$1,635	\$2,430	\$3,275	\$4,259	\$5,647	\$7,817	\$10,652	\$14,037	\$17,044	\$19,491	\$43,336	\$50,867	\$55,051	\$56,031	\$60,309	\$64,800	\$70,612	\$108,975	\$84,632	\$84,415	\$84,415	
6630	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	\$82,506	\$74,602	\$64,411	\$53,443	\$42,904	\$33,546	\$25,694	\$19,373	\$14,436	\$0	\$86,632	\$78,390	\$67,732	\$56,240	\$45,184	\$35,355	\$27,101	\$20,450	\$15,250	\$0	\$0	
6631	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	\$35,176	\$41,189	\$46,054	\$48,926	\$49,247	\$46,969	\$42,562	\$36,828	\$30,625	\$24,640	\$56,919	\$58,900	\$60,529	\$60,816	\$52,842	\$50,442	\$45,751	\$39,624	\$32,979	\$26,559	\$26,559	
6632	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	\$13,632	\$20,660	\$23,197	\$25,116	\$27,952	\$35,361	\$43,284	\$50,918	\$57,196	\$61,044	\$76,914	\$82,182	\$79,735	\$74,868	\$70,362	\$71,188	\$73,378	\$76,290	\$78,768	\$79,514	\$79,514	
6633	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	\$495,883	\$388,145	\$297,624	\$224,657	\$167,592	\$0	\$0	\$0	\$0	\$0	\$528,195	\$413,790	\$317,561	\$239,914	\$179,130	\$0	\$0	\$0	\$0	\$0	\$0	
6634	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	\$101,441	\$91,723	\$79,194	\$65,708	\$52,751	\$41,245	\$31,591	\$23,820	\$17,749	\$0	\$106,515	\$96,381	\$83,277	\$69,148	\$55,554	\$43,470	\$33,321	\$25,143	\$18,750	\$0	\$0	
6635	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	\$42,102	\$49,299	\$55,121	\$58,558	\$58,944	\$56,216	\$50,942	\$44,079	\$36,654	\$29,492	\$68,126	\$70,497	\$72,447	\$72,790	\$63,245	\$60,374	\$54,758	\$47,425	\$39,472	\$31,789	\$31,789	
6636	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	\$14,993	\$22,723	\$25,512	\$27,624	\$30,742	\$38,891	\$47,605	\$56,000	\$62,905	\$67,138	\$84,592	\$90,386	\$87,694	\$82,342	\$77,385	\$78,294	\$80,702	\$83,905	\$86,631	\$87,451	\$87,451	
6637	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
6638	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	MF	NC	\$709	\$1,012	\$1,296	\$1,580	\$1,940	\$2,456	\$3,034	\$3,606	\$3,949	\$4,093	\$8,324	\$9,043	\$9,176	\$8,868	\$9,168	\$9,553	\$10,075	\$15,184	\$11,595	\$11,428	\$11,428	
6639	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	NC	\$171	\$252	\$338	\$436	\$574	\$790	\$1,069	\$1,400	\$1,688	\$1,918	\$4,236	\$4,939	\$5,310	\$5,369	\$5,741	\$6,						





Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
6721	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6722	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6723	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6724	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6727	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
6728	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7001	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	PAYS	SF	MO	\$281,844	\$284,286	\$286,777	\$289,317	\$291,908	\$294,551	\$297,247	\$299,997	\$302,802	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7002	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Single Family Income Eligible	SF	MO	\$84,951	\$85,521	\$86,101	\$86,694	\$87,298	\$87,914	\$88,543	\$89,184	\$89,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7003	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Market Rate	MF	MO	\$7,969	\$8,041	\$8,115	\$8,190	\$8,267	\$8,345	\$8,425	\$8,506	\$8,589	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7004	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Income Eligible	MF	MO	\$18,884	\$19,370	\$19,770	\$19,906	\$20,045	\$20,187	\$20,331	\$20,478	\$20,628	\$663	\$284	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7005	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	PAYS	SF	MO	\$192,392	\$193,662	\$194,958	\$196,280	\$197,628	\$199,003	\$200,406	\$201,837	\$203,296	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7006	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Single Family Income Eligible	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7007	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Market Rate	MF	MO	\$8,836	\$8,916	\$8,997	\$9,081	\$9,166	\$9,253	\$9,341	\$9,431	\$9,523	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7008	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Income Eligible	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7009	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	PAYS	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	\$165,422	\$166,241	\$167,077	\$167,929	\$168,799	\$169,686	\$170,591	\$171,513	\$172,454	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	\$36,772	\$37,653	\$38,364	\$38,560	\$38,759	\$38,963	\$39,171	\$39,383	\$39,599	\$1,270	\$544	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	\$106,388	\$107,834	\$109,310	\$110,814	\$112,349	\$113,914	\$115,511	\$117,139	\$118,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	\$71,245	\$71,728	\$72,221	\$72,724	\$73,237	\$73,761	\$74,295	\$74,839	\$75,395	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	\$6,764	\$6,825	\$6,888	\$6,952	\$7,017	\$7,083	\$7,151	\$7,220	\$7,291	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	\$15,837	\$16,246	\$16,583	\$16,699	\$16,817	\$16,937	\$17,059	\$17,184	\$17,312	\$556	\$239	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	\$65,347	\$66,159	\$66,986	\$67,831	\$68,692	\$69,570	\$70,466	\$71,380	\$72,313	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	\$27,905	\$28,244	\$28,590	\$28,943	\$29,303	\$29,670	\$30,045	\$30,427	\$30,816	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	\$7,832	\$7,875	\$7,919	\$7,964	\$8,010	\$8,056	\$8,104	\$8,152	\$8,202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	\$6,187	\$6,381	\$6,548	\$6,629	\$6,712	\$6,796	\$6,881	\$6,969	\$7,058	\$228	\$98	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7021	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	PAYS	SF	MO	\$46,888	\$47,593	\$48,313	\$49,048	\$49,797	\$50,561	\$51,340	\$52,135	\$52,946	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7022	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	\$32,682	\$32,888	\$33,098	\$33,312	\$33,530	\$33,753	\$33,980	\$34,212	\$34,449	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7023	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	\$2,870	\$2,896	\$2,922	\$2,949	\$2,977	\$3,005	\$3,034	\$3,063	\$3,093	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7024	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	\$13,315	\$13,613	\$13,849	\$13,898	\$13,948	\$13,999	\$14,051	\$14,104	\$14,158	\$453	\$194	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7025	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	PAYS	SF	MO	\$37,863	\$38,131	\$38,405	\$38,685	\$38,970	\$39,261	\$39,557	\$39,860	\$40,168	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7026	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7027	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7028	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7029	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	PAYS	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7030	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7031	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7032	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7033	Lighting	LED - 4W Candelabra (CFL baseline)	PAYS	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7034	Lighting	LED - 4W Candelabra (CFL baseline)	Single Family Income Eligible	SF	MO	\$23,457	\$23,620	\$23,788	\$23,958	\$24,132	\$24,309	\$24,490	\$24,674	\$24,862	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7035	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Market Rate	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7036	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Income Eligible	MF	MO	\$2,185	\$2,207	\$2,229	\$2,252	\$2,275	\$2,298	\$2,322	\$2,347	\$2,372	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7037	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	PAYS	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7038	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Single Family Income Eligible	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7039	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Market Rate	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
7040	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Income Eligible	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		



Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Total Utility \$)

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	\$22,672	\$34,578	\$39,066	\$42,562	\$47,659	\$60,661	\$74,704	\$88,408	\$99,902	\$107,256	\$135,933	\$146,090	\$142,558	\$134,623	\$127,237	\$129,456	\$134,181	\$140,275	\$145,624	\$147,798
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	\$115,018	\$129,751	\$139,069	\$141,229	\$135,889	\$124,228	\$108,443	\$90,969	\$73,836	\$58,367	\$179,596	\$186,167	\$188,669	\$165,346	\$159,195	\$145,625	\$127,200	\$106,769	\$86,712	\$68,586
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	\$12,895	\$19,666	\$22,218	\$24,207	\$27,105	\$34,500	\$42,487	\$50,281	\$56,818	\$61,001	\$77,310	\$83,087	\$81,078	\$76,565	\$72,365	\$73,627	\$76,314	\$79,780	\$82,822	\$84,059
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	\$59,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$68,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	\$50	\$76	\$86	\$94	\$105	\$133	\$164	\$194	\$219	\$236	\$299	\$321	\$313	\$296	\$280	\$284	\$295	\$308	\$320	\$325
9023	Water Heating	Low Flow Showerhead	Single Family Income Eligible	MF	Retrofit	\$135,214	\$122,922	\$106,708	\$89,021	\$71,859	\$56,495	\$43,512	\$32,990	\$24,720	\$0	\$150,022	\$136,517	\$118,625	\$99,059	\$80,040	\$62,988	\$48,560	\$36,853	\$27,642	\$0
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	\$334	\$509	\$575	\$627	\$702	\$893	\$1,100	\$1,302	\$1,471	\$1,579	\$2,002	\$2,151	\$2,099	\$1,982	\$1,874	\$1,906	\$1,976	\$2,066	\$2,144	\$2,176
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9031	Water Heating	Pipe Insulation	PAYS	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9032	Water Heating	Pipe Insulation	Multifamily Income Eligible	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9033	Water Heating	Water Heater Wrap	Energy Efficiency Kits	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9034	Water Heating	Water Heater Wrap	Single Family Income Eligible	SF	Retrofit	\$27,672	\$33,799	\$39,673	\$44,468	\$47,356	\$47,786	\$45,688	\$41,504	\$36,003	\$30,014	\$24,210	\$19,020	\$45,530	\$48,866	\$52,697	\$49,816	\$53,115	\$53,660	\$51,364	\$46,716
9035	Water Heating	Water Heater Wrap	Energy Efficiency Kits	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9036	Water Heating	Water Heater Wrap	Multifamily Income Eligible	MF	Retrofit	\$32,070	\$39,222	\$46,099	\$51,739	\$55,173	\$55,746	\$53,369	\$48,546	\$42,167	\$35,198	\$28,429	\$22,364	\$53,606	\$57,610	\$62,208	\$58,884	\$62,865	\$63,593	\$60,952	\$55,508
9037	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	\$183,792	\$253,426	\$347,107	\$471,208	\$632,314	\$836,110	\$1,085,723	\$1,379,810	\$1,711,104	\$2,066,356	#####	\$2,778,712	\$3,102,815	\$3,390,884	\$3,699,111	\$3,848,479	\$4,023,042	\$4,168,286	#####	#####
9038	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	\$65,341	\$90,096	\$123,401	\$167,521	\$224,796	\$297,249	\$385,990	\$490,542	\$608,321	\$734,618	\$863,267	\$987,871	\$1,103,094	\$1,205,506	\$1,293,754	\$1,368,187	\$1,430,247	\$1,481,883	#####	#####
9039	Water Heating	Heat Pump Hot Water Heater	Single Family Income Eligible	SF	MO	\$137,596	\$189,202	\$257,857	\$347,377	\$461,139	\$601,152	\$766,970	\$954,830	\$1,157,553	\$1,365,547	#####	\$1,758,429	\$1,929,079	\$2,078,238	\$2,206,206	\$2,315,064	\$2,407,748	\$2,487,381	#####	#####
9040	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	NC	\$8,420	\$12,457	\$16,709	\$21,632	\$28,554	\$39,343	\$53,370	\$70,014	\$84,632	\$96,351	\$102,625	\$112,629	\$119,160	\$271,769	\$306,128	\$316,081	\$325,340	\$496,721	\$391,774	\$410,438
9041	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	\$18,454	\$25,445	\$34,851	\$47,312	\$63,488	\$83,950	\$109,013	\$138,541	\$171,804	\$207,474	\$243,807	\$278,998	\$311,540	\$340,464	\$365,387	\$386,409	\$403,936	\$418,519	\$430,733	\$441,104
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	\$8,233	\$11,352	\$15,548	\$21,107	\$28,323	\$37,452	\$48,633	\$61,806	\$76,645	\$92,558	\$108,767	\$124,466	\$138,984	\$151,887	\$163,006	\$172,384	\$180,204	\$186,709	\$192,158	\$196,785
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	\$504,774	\$656,194	\$834,859	\$1,036,457	\$1,253,029	\$1,474,096	\$1,688,738	\$1,887,800	\$2,065,353	\$2,219,002	#####	\$2,458,543	\$2,550,120	\$2,627,438	\$2,693,665	\$2,724,319	\$2,755,585	\$2,787,477	#####	#####
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	\$1,415	\$2,093	\$2,807	\$3,635	\$4,798	\$6,610	\$8,967	\$11,764	\$14,220	\$16,189	\$17,142	\$18,924	\$20,021	\$45,662	\$51,435	\$53,108	\$54,663	\$83,459	\$65,826	\$68,961
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9052	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	\$105,777	\$159,051	\$177,159	\$190,290	\$210,068	\$263,601	\$320,041	\$373,396	\$415,978	\$440,287	\$441,533	\$419,521	\$378,712	\$326,440	\$270,398	\$216,710	\$169,151	\$129,335	\$97,347	\$72,410
9053	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9054	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9055	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9056	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	NC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9057	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	\$20,388	\$30,949	\$55,684	\$69,445	\$99,121	\$124,468	\$166,942	\$204,588	\$257,789	\$302,397	\$358,190	\$400,217	\$449,581	\$482,164	\$521,240	\$543,390	\$573,364	\$587,521	\$611,343	\$620,418
9058	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	\$15,395	\$23,368	\$42,045	\$52,436	\$74,843	\$93,982	\$126,053	\$154,479	\$194,649	\$228,332	\$270,459	\$302,192	\$339,466	\$364,069	\$393,574	\$410,298	\$432,931	\$443,620	\$461,608	\$468,460
9059	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	\$3,128	\$4,748	\$8,543	\$10,655	\$15,208	\$19,097	\$25,613	\$31,389	\$39,552	\$46,396	\$54,956	\$61,404	\$68,978	\$73,977	\$79,972	\$83,370	\$87,969	\$90,141	\$93,796	\$95,188
9060	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	\$9,124	\$13,850	\$24,919	\$31,077	\$44,357	\$55,700	\$74,708	\$91,555	\$115,363	\$135,235	\$160,293	\$179,100	\$201,191	\$215,773	\$233,259	\$243,172	\$256,985	\$262,920	\$273,581	\$277,642
10001	New Construction	Zero Energy Ready Home	New Construction	SF	NC	\$234,700	\$333,597	\$424,976	\$515,998	\$630,586	\$794,933	\$977,621	\$1,156,899	\$1,261,491	\$1,302,020	#####	\$1,289,170	\$1,279,150	\$1,187,047	\$1,246,365	\$1,243,125	\$1,293,946	\$1,272,347	#####	#####
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	\$73,227	\$104,084	\$132,594	\$160,993	\$196,745	\$248,022	\$305,022	\$360,957	\$393,590	\$406,235	\$393,557	\$402,226	\$399,100	\$370,364	\$388,871	\$387,860	\$403,716	\$386,984	\$523,740	\$530,208
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	\$230,879	\$327,822	\$417,182	\$506,003	\$617,725	\$777,905	\$955,680	\$1,129,755	\$1,230,610	\$1,268,826	#####	\$1,253,699	\$1,242,669	\$1,152,005	\$1,208,327	\$1,203,951	\$1,251,890	\$1,269,506	#####	#####
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	\$74,248	\$105,423	\$134,160	\$162,724	\$198,652	\$250,164	\$307,334	\$363,314	\$395,748	\$408,038	\$394,892	\$403,173	\$399,626	\$370,470	\$388,582	\$387,175	\$402,591	\$381,694	\$5	

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1001	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1002	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	MO	5,096	5,934	6,727	7,441	8,055	8,562	8,967	9,282	9,522	9,702	9,836	9,836	9,836	9,836	9,836	9,836	9,836	9,836	9,836	9,836
1003	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1004	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1005	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1007	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1008	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1010	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	2,427	2,904	3,381	3,833	4,240	4,590	4,879	5,110	5,289	5,426	5,529	5,605	5,268	5,201	5,135	5,072	5,016	4,967	4,927	4,895
1012	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1013	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1014	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1015	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1016	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1017	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1018	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1019	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1020	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1021	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1022	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1024	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1025	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1026	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1027	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1028	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1029	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1031	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1032	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	919	1,099	1,280	1,451	1,605	1,738	1,847	1,934	2,002	2,054	2,093	2,122	1,994	1,969	1,944	1,920	1,899	1,880	1,865	1,853
1033	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	602	701	795	880	952	1,012	1,060	1,097	1,126	1,147	1,163	1,079	1,065	1,052	1,040	1,030	1,022	1,015	1,010	1,006
1034	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	NC	4	6	8	11	14	19	26	33	40	49	103	113	119	122	133	141	151	223	252	253
1035	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	333	377	417	451	480	502	520	534	544	551	505	499	493	488	484	481	479	477	476	475
1036	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	194	244	300	360	419	475	525	568	604	633	655	672	685	694	667	660	652	644	636	628
1037	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	NC	2	3	4	5	6	8	11	15	18	39	45	50	52	53	58	62	66	98	110	111
1038	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	2,054	2,732	3,582	4,610	5,806	7,136	8,539	9,942	11,271	12,468	13,496	14,345	15,024	15,552	15,954	16,256	16,480	16,194	16,100	15,982
1039	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	1,126	1,497	1,963	2,526	3,182	3,910	4,679	5,448	6,176	6,832	7,396	7,861	8,233	8,522	8,743	8,908	9,031	8,874	8,822	8,758
1040	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	NC	43	62	83	107	140	191	256	333	399	450	473	517	542	524	1,311	1,413	1,462	2,164	1,645	1,703
1041	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	411	547	716	922	1,161	1,427	1,708	1,989	2,254	2,494	2,699	2,869	3,005	3,111	3,191	3,251	3,296	3,239	3,220	3,197
1042	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	672	894	1,171	1,508	1,899	2,334	2,793	3,251	3,686	4,077	4,414	4,691	4,913	5,086	5,218	5,316	5,390	5,296	5,265	5,227
1043	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	NC	15	21	28	36	48	65	87	113	136	153	161	176	184	179	446	481	498	737	560	580
1044	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1045	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1046	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1047	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1048	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1049	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1050	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	897	1,176	1,514	1,906	2,343	2,804	3,264	3,701	4,093	4,431	4,710	4,933	5,106	5,238	5,337	5,411	5,286	5,247	5,200	5,146
1051	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	644	829	1,045	1,284	1,536	1,789	2,028	2,243	2,428	2,581	2,703	2,798	2,870	2,925	2,965	2,875	2,850	2,820	2,787	2,751
1052	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	NC	13	19	25	32	42	57	77	100	120	136	142	156	358	384	406	409	425	658	517	534
1053	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	381	469	561	653	740	819	886	942	987	1,021	1,048	1,068	1,082	1,029	1,017	1,004	992	979	968	959
1054	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	221	293	385	495	623	766	917	1,068	1,210	1,339	1,449	1,540	1,613	1,						

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Participants)

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
2002	Behavior	Home Energy Report	No program	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2003	Behavior	Home Energy Report	No program	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2004	Behavior	Home Energy Report	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	Behavior	Home Energy Report	No program	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2006	Behavior	Home Energy Report	No program	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	1,347	2,021	2,246	2,406	2,649	4,476	5,755	6,605	7,262	7,759	9,493	10,387	10,628	10,555	10,314	11,381	11,727	11,549	11,176	10,727	
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	738	1,107	1,231	1,318	1,452	2,453	3,154	3,620	3,979	4,252	5,202	5,692	5,824	5,784	5,652	6,237	6,426	6,329	6,124	5,878	
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	12	17	23	29	38	103	140	178	211	243	416	485	531	543	564	786	838	1,045	877	874	
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2013	Behavior	AMI Data Portal	No program	SF	MO	1,714	2,344	3,183	4,284	5,699	7,470	9,615	12,111	14,883	17,810	20,736	23,509	26,005	28,150	29,921	31,336	32,437	33,276	33,906	34,373	
2014	Behavior	AMI Data Portal	No program	SF	MO	939	1,284	1,744	2,348	3,123	4,094	5,269	6,637	8,156	9,760	11,363	12,883	14,250	15,426	16,396	17,172	17,775	18,235	18,580	18,836	
2015	Behavior	AMI Data Portal	No program	SF	NC	6	17	35	62	103	162	244	355	493	654	828	1,012	1,196	1,369	1,536	1,691	1,837	2,074	2,229	2,377	
2016	Behavior	AMI Data Portal	No program	MF	MO	343	469	637	857	1,140	1,494	1,923	2,422	2,977	3,562	4,148	4,702	5,201	5,630	5,985	6,268	6,488	6,656	6,782	6,875	
2017	Behavior	AMI Data Portal	No program	MF	MO	561	766	1,041	1,401	1,864	2,443	3,145	3,961	4,868	5,825	6,782	7,688	8,505	9,206	9,785	10,248	10,608	10,883	11,089	11,241	
2018	Behavior	AMI Data Portal	No program	MF	NC	2	6	12	21	35	55	83	121	168	223	282	345	407	466	523	576	626	706	759	809	
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Single Family Income Eligible	SF	Retrofit	886	935	935	886	797	685	566	452	352	268	201	149	0	0	0	886	935	935	886	797	
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Multifamily Income Eligible	MF	Retrofit	424	514	598	664	701	701	664	598	514	424	339	264	201	151	112	424	514	598	664	701	
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	101	152	168	180	199	249	301	350	389	411	411	389	350	301	249	285	284	261	242	234	
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	736	777	777	736	662	569	470	376	292	223	167	124	0	0	736	777	777	736	662	662	
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	381	461	536	596	629	629	596	536	461	381	304	237	180	135	100	381	461	536	596	629	
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	74	90	105	116	123	123	116	105	90	74	59	46	35	26	20	74	90	105	116	123	
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Single Family Income Eligible	SF	Retrofit	132	139	139	132	119	102	84	67	52	40	30	22	0	0	132	139	139	132	119	119	
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Multifamily Income Eligible	MF	Retrofit	40	48	56	63	66	66	63	56	48	40	32	25	19	14	11	40	48	56	63	66	
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	20	30	34	36	40	50	61	70	78	83	78	70	61	50	57	57	53	49	47	47	
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	110	116	116	110	99	85	70	56	44	33	25	18	0	0	110	116	116	110	99	99	
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	36	43	51	56	59	59	56	51	43	36	29	22	17	13	9	36	43	51	56	59	
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	7	8	10	11	12	12	11	10	8	7	6	4	3	2	2	7	8	10	11	12	
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent)	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent)	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	819	864	864	819	737	633	523	418	325	248	186	138	0	0	819	864	864	819	737	737	
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	133	162	188	209	220	220	209	188	162	133	107	83	63	47	35	133	162	188	209	220	
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3036	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	26	32	37	41	43	43	41	37	32	26	21	16	12	9	7	26	32	37	41	43	
3037	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	15	23	26	28	30	38	46	53	59	63	59	53	46	38	30	24	18	13	10	10	
3038	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	126	133	133	126	114	98	81	64	50	38	29	21	0	0	126	133	133	126	114	98	98
3039	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Market Rate	MF	Retrofit	34	32	29	25	21	16	13	10	7	5	0	0	0	0	0	0	0	0	0	0	
3040	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	77	93	108	120	127	127	120	108	93	77	61	48	36	27	20	0	0	0	0	0	
3041	Building Shell	Ceiling Insulation R5-R30 electric furnace base	PAYS	SF	Retrofit	37	56	62	67	73	92	111	129	144	152	152	144	129	111	92	73	57	44	33	24	
3042	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Single Family Income Eligible	SF	Retrofit	306	323	323	306	275	237	195	156	121	93	69	51	0	0	0	306	323	323	306	275	
3043	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Market Rate	MF	Retrofit	82	78	70	60	50	40	31	24	18	13	0	0	0	0	0	0	0	0	0	0	
3044	Building Shell	Ceiling Insulation R5-R30 electric furnace base	Multifamily Income Eligible	MF	Retrofit	186	225	262	291	307	307	291	262	225	186	149	116	88	66	49	0	0	0	0	0	
304																										

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3058	Building Shell	Ceiling Insulation R11-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	20	21	21	20	18	15	13	10	8	6	4	3	0	0	0	0	0	0	0	0	
3059	Building Shell	Ceiling Insulation R11-R49 heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3060	Building Shell	Ceiling Insulation R11-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	8	9	11	12	13	13	12	11	9	8	6	5	4	3	2	0	0	0	0	0	
3061	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	SF	Retrofit	10	15	17	18	20	25	30	35	39	41	41	39	35	30	25	20	16	12	9	7	
3062	Building Shell	Ceiling Insulation R5-R30 heat pump base	Single Family Income Eligible	SF	Retrofit	44	47	47	44	40	34	28	22	18	13	10	7	0	0	0	0	0	0	0	0	
3063	Building Shell	Ceiling Insulation R5-R30 heat pump base	PAYS	MF	Retrofit	6	9	10	10	11	14	17	20	22	23	23	22	20	17	14	11	9	7	5	4	
3064	Building Shell	Ceiling Insulation R5-R30 heat pump base	Multifamily Income Eligible	MF	Retrofit	17	21	24	27	28	28	27	24	21	17	14	11	8	6	4	0	0	0	0	0	
3065	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	SF	Retrofit	8	12	13	14	16	20	24	28	31	32	32	31	28	24	20	16	12	9	7	5	
3066	Building Shell	Ceiling Insulation R5-R38 heat pump base	Single Family Income Eligible	SF	Retrofit	35	37	37	35	31	27	22	18	14	10	8	6	0	0	0	0	0	0	0	0	
3067	Building Shell	Ceiling Insulation R5-R38 heat pump base	PAYS	MF	Retrofit	4	7	7	8	9	11	13	16	17	18	18	17	16	13	11	9	7	5	4	3	
3068	Building Shell	Ceiling Insulation R5-R38 heat pump base	Multifamily Income Eligible	MF	Retrofit	13	16	19	21	22	22	21	19	16	13	11	8	6	5	4	0	0	0	0	0	
3069	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	SF	Retrofit	6	9	10	10	11	14	17	20	22	23	23	22	20	17	14	11	9	7	5	4	
3070	Building Shell	Ceiling Insulation R5-R49 heat pump base	Single Family Income Eligible	SF	Retrofit	26	28	28	26	24	20	17	13	10	8	6	4	0	0	0	0	0	0	0	0	
3071	Building Shell	Ceiling Insulation R5-R49 heat pump base	PAYS	MF	Retrofit	3	5	5	6	6	8	9	11	12	13	13	12	11	9	8	6	5	4	3	2	
3072	Building Shell	Ceiling Insulation R5-R49 heat pump base	Multifamily Income Eligible	MF	Retrofit	10	12	14	16	17	17	16	14	12	10	8	6	5	4	3	0	0	0	0	0	
3073	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3074	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	22	23	23	22	20	17	14	11	9	7	5	4	0	0	0	0	0	0	0	0	
3075	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3076	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	9	10	12	13	14	14	13	12	10	9	7	5	4	3	2	0	0	0	0	0	
3077	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3078	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3079	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3080	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3081	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3082	Building Shell	Ceiling Insulation R5-R60 heat pump base	Single Family Income Eligible	SF	Retrofit	587	619	619	587	528	454	375	299	233	178	133	99	0	0	0	0	0	0	0	0	
3083	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Market Rate	MF	Retrofit	62	59	53	46	38	30	23	18	13	10	0	0	0	0	0	0	0	0	0	0	
3084	Building Shell	Ceiling Insulation R5-R60 heat pump base	Multifamily Income Eligible	MF	Retrofit	112	136	158	176	186	186	176	158	136	112	90	70	53	40	30	0	0	0	0	0	
3085	Building Shell	Ceiling Insulation R5-R60 heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3086	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Single Family Income Eligible	SF	Retrofit	511	539	539	511	460	395	326	261	203	155	116	86	0	0	0	0	0	0	0	0	
3087	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Market Rate	MF	Retrofit	50	47	42	36	30	24	19	14	11	8	0	0	0	0	0	0	0	0	0	0	
3088	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Income Eligible	MF	Retrofit	98	118	138	153	162	162	153	138	118	98	78	61	46	35	26	0	0	0	0	0	
3089	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3090	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3091	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3092	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3093	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3094	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3095	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3096	Building Shell	Ceiling Insulation R5-R60 gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3097	Building Shell	Duct Insulation - electric furnace base	PAYS	SF	Retrofit	120	181	201	215	237	296	359	417	464	489	489	464	417	359	296	237	184	140	105	78	
3098	Building Shell	Duct Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	986	1,041	1,041	986	888	763	630	503	392	299	224	166	0	0	0	0	0	0	0	0	0
3099	Building Shell	Duct Insulation - electric furnace base	PAYS	MF	Retrofit	75	113	126	135	148	186	225	262	291	307	307	291	262	225	186	148	115	88	66	49	
3100	Building Shell	Duct Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	8,229	7,072	5,840	4,666	3,631	2,767	2,076	1,539	0	0	0	0	0	0	0	0	0	0	0	0	0
3101	Building Shell	Duct Insulation - heat pump base	PAYS	SF	Retrofit	24	36	40	43	48	60	72	84	93	98	98	93	84	72	60	48	37	28	21	16	
3102	Building Shell	Duct Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	147	155	155	147	132	114	94	75	58	44	33	25	0	0	0	0	0	0	0	0	0
3103	Building Shell	Duct Insulation - heat pump base	PAYS	MF	Retrofit	14	20	23	24	27	34	41	47	53	55	53	47	41	34	27	21	16	12	9	7	
3104	Building Shell	Duct Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	736	588	458	349	262	194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3105	Building Shell	Duct Insulation - heat pump base	PAYS	SF	Retrofit	292	438	487	521	574	719	870	1,013	1,125	1,187	1,187	1,125	1,013	870	719	574	447	341	255	189	
3106	Building Shell	Duct Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3107	Building Shell	Duct Insulation - heat pump base	PAYS	MF	Retrofit	32	48	53	57	62	78	95	110	122	129	129	122	110	95	78	62	49	37	28	21	
3108	Building Shell	Duct Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	210	255	296	329	347	347	329	296	255	210	168	131	100	75	55	0	0	0	0	0	0
3109	Building Shell	Duct Sealing - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3110	Building Shell	Duct Sealing - electric furnace base	Single Family Income Eligible	SF	Retrofit	986	1,041	1,041	986	888	763	630	503	392	299	224	166	0	0	0	0	0	0	0	0	0
3111	Building Shell	Duct Sealing - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3112	Building Shell	Duct Sealing - electric furnace base	Multifamily Income Eligible	MF	Retrofit	8,229	7,072	5,840	4,666	3,631	2,767	2,076	1,539	0	0	0	0	0	0	0	0	0	0	0	0	0
3113	Building Shell	Duct Sealing - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3114	Building Shell	Duct Sealing - heat pump base	Single Family Income Eligible	SF	Retrofit	147	155	155	147	132	114	94	75	58	44	33	25	0	0	0	0	0	0	0	0	0
3115	Building Shell	Duct Sealing - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3116	Building Shell	Duct Sealing - heat pump base	Multifamily Income Eligible	MF	Retrofit	776	667	550	440	342	261	196	145	0	0	0	0	0	0	0	0	0	0	0	0	0
3117	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3118	Building Shell	Duct Sealing - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3119	Building Shell	Duct Sealing - gas heat and electric cool base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3120	Building Shell	Duct Sealing - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3121	Building Shell	Floor Insulation (R4 base) - electric furnace	PAYS	SF	Retrofit	24	37	41	4																	

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3132	Building Shell	Floor Insulation (R14 base) - gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3133	Building Shell	Floor Insulation (R13 base) - electric furnace	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3134	Building Shell	Floor Insulation (R13 base) - electric furnace	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3135	Building Shell	Floor Insulation (R13 base) - electric furnace	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3136	Building Shell	Floor Insulation (R13 base) - electric furnace	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3137	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3138	Building Shell	Floor Insulation (R13 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3141	Building Shell	Floor Insulation (R13 base) - electric furnace	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3149	Building Shell	Basement Wall Insulation - electric furnace	PAYS	SF	Retrofit	147	220	245	262	289	361	438	509	566	597	597	566	509	438	361	289	225	171	128	95	
3150	Building Shell	Basement Wall Insulation - electric furnace	Single Family Income Eligible	SF	Retrofit	740	822	881	970	1,214	1,470	1,710	1,900	2,005	2,005	1,900	1,710	1,470	1,214	970	755	575	431	320	0	
3151	Building Shell	Basement Wall Insulation - electric furnace	PAYS	MF	Retrofit	79	119	132	141	155	194	235	274	304	321	321	304	274	235	194	155	121	92	69	51	
3152	Building Shell	Basement Wall Insulation - electric furnace	Multifamily Income Eligible	MF	Retrofit	426	516	600	667	704	704	667	600	516	426	340	265	202	151	112	0	0	0	0	0	
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	30	44	49	53	58	73	88	102	114	120	120	114	102	88	73	58	45	34	26	19	
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	110	122	131	144	181	219	255	283	299	299	283	255	219	181	144	112	86	64	48	0	
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	14	21	24	25	28	35	43	49	55	58	58	55	49	43	35	28	22	17	12	9	
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	40	49	57	63	66	66	63	57	49	40	32	25	19	14	11	0	0	0	0	0	
3157	Building Shell	Basement Wall Insulation - gas heat and electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3158	Building Shell	Basement Wall Insulation - gas heat and electric	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3159	Building Shell	Basement Wall Insulation - gas heat and electric	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3160	Building Shell	Basement Wall Insulation - gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3161	Building Shell	Foundation Siderwall Insulation - electric	PAYS	SF	Retrofit	9	13	15	16	17	22	26	30	34	36	36	34	30	26	22	17	13	10	8	6	
3162	Building Shell	Foundation Siderwall Insulation - electric	Single Family Income Eligible	SF	Retrofit	81	90	96	106	132	160	186	207	218	218	207	186	160	132	106	82	63	47	35	0	
3163	Building Shell	Foundation Siderwall Insulation - electric	PAYS	MF	Retrofit	10	15	16	18	19	24	29	34	38	40	40	38	34	29	24	19	15	12	9	6	
3164	Building Shell	Foundation Siderwall Insulation - electric	Multifamily Income Eligible	MF	Retrofit	16	19	22	25	26	26	25	22	19	16	13	10	7	6	4	0	0	0	0	0	
3165	Building Shell	Foundation Siderwall Insulation - heat pump base	PAYS	SF	Retrofit	2	3	3	3	3	4	5	6	7	7	7	7	6	5	4	3	3	2	2	1	
3166	Building Shell	Foundation Siderwall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	12	13	14	16	20	24	28	31	33	33	31	28	24	20	16	12	9	7	5	0	
3167	Building Shell	Foundation Siderwall Insulation - heat pump base	PAYS	MF	Retrofit	2	3	3	3	4	4	5	6	7	7	7	6	5	4	3	2	2	1	1	0	
3168	Building Shell	Foundation Siderwall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	1	2	2	2	2	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	
3169	Building Shell	Foundation Siderwall Insulation - gas heat and electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3170	Building Shell	Foundation Siderwall Insulation - gas heat and electric	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3171	Building Shell	Foundation Siderwall Insulation - gas heat and electric	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3172	Building Shell	Foundation Siderwall Insulation - gas heat and electric	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3173	Building Shell	Foundation Siderwall Insulation - electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3174	Building Shell	Foundation Siderwall Insulation - electric	Single Family Income Eligible	SF	Retrofit	561	482	398	318	248	189	142	105	0	0	0	0	0	0	0	561	482	398	318	248	
3175	Building Shell	Foundation Siderwall Insulation - electric	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3176	Building Shell	Foundation Siderwall Insulation - electric	Multifamily Income Eligible	MF	Retrofit	885	689	525	394	292	0	0	0	0	0	0	0	0	0	885	689	525	394	292	0	
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3181	Building Shell	Insulated Cellular Shades - gas heat and electric	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3182	Building Shell	Insulated Cellular Shades - gas heat and electric	Single Family Income Eligible	SF	Retrofit	625	537	443	354	276	210	158	117	0	0	0	0	0	0	625	537	443	354	276	0	
3183	Building Shell	Insulated Cellular Shades - gas heat and electric	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3184	Building Shell	Insulated Cellular Shades - gas heat and electric	Multifamily Income Eligible	MF	Retrofit	310	242	184	138	102	0	0	0	0	0	0	0	0	0	310	242	184	138	102	0	
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	1,063	1,594	1,771	1,897	2,089	2,615	3,167	3,685	4,094	4,321	4,321	4,094	3,685	3,167	2,615	2,089	1,626	1,239	930	689	
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	2,061	2,175	2,175	2,061	1,855	1,594	1,316	1,052	818	624	468	347	0	0	0	0	0	0	0	0	0
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	563	844	938	1,005	1,107	1,385	1,677	1,952	2,168	2,289	2,289	2,168	1,952	1,677	1,385	1,107	861	656	492	365	
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	8,708	8,250	7,426	6,382	5,271	4,211	3,277	2,497	1,874	1,389	0	0	0	0	0	0	0	0	0	0	0
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	341	360	360	341	307	264	218	174	135	103	77	57	0	0	0	0	0	0	0	0	
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	912	864	778	668	552	441	343	262	196	145	0	0	0	0	0	0	0	0	0	0	
3193	Building Shell	Storm Windows - gas heat and electric cool	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3194	Building Shell	Storm Windows - gas heat and electric cool	Single Family Income Eligible	SF	Retrofit	2,293	2,420	2,420	2,293	2,064	1,774	1,465	1,170	911	694	521	386	0	0	0	0	0	0	0	0	
3195	Building Shell	Storm Windows - gas heat and electric cool	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3196	Building Shell	Storm Windows - gas heat and electric cool	Multifamily Income Eligible	MF	Retrofit																					

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3206	Building Shell	Watt Insulation - gas heat and electric cool	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3207	Building Shell	Watt Insulation - gas heat and electric cool	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3208	Building Shell	Watt Insulation - gas heat and electric cool	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3209	Building Shell	Thin Triple Windows - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3217	Building Shell	Thin Triple Windows - gas heat and electric cool	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3218	Building Shell	Thin Triple Windows - gas heat and electric cool	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3219	Building Shell	Thin Triple Windows - gas heat and electric cool	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3220	Building Shell	Thin Triple Windows - gas heat and electric cool	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	205	227	244	268	336	406	473	525	555	555	525	473	406	336	268	209	159	119	88	0	
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	208	252	294	326	344	344	326	294	252	208	166	130	99	74	55	0	0	0	0	0	
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	30	34	36	40	50	61	70	78	83	83	78	70	61	50	40	31	24	18	13	0	
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3228	Building Shell	Advanced Walls - heat pump base	Multifamily Income Eligible	MF	Retrofit	34	41	48	53	56	56	53	48	41	34	27	21	16	12	9	0	0	0	0	0	
3229	Building Shell	Advanced Walls - gas heat and electric cool	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3230	Building Shell	Advanced Walls - gas heat and electric cool	Single Family Income Eligible	SF	Retrofit	228	253	271	298	373	452	526	585	617	617	585	526	452	373	298	232	177	133	98	0	
3231	Building Shell	Advanced Walls - gas heat and electric cool	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3232	Building Shell	Advanced Walls - gas heat and electric cool	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3233	Building Shell	Cool Roof	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3234	Building Shell	Cool Roof	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3235	Building Shell	Cool Roof	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3236	Building Shell	Cool Roof	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3237	Building Shell	Shade Trees	No program	SF	Retrofit	1,209	1,295	1,426	1,785	2,162	2,515	2,794	2,949	2,949	2,794	2,515	2,162	1,785	1,426	1,110	846	635	470	0	0	
3238	Building Shell	Shade Trees	No program	SF	Retrofit	662	710	782	978	1,184	1,378	1,531	1,616	1,616	1,531	1,378	1,184	978	782	608	464	348	258	0	0	
3239	Building Shell	Shade Trees	No program	MF	Retrofit	242	259	285	357	432	503	559	590	590	559	503	432	357	285	222	169	127	94	0	0	
3240	Building Shell	Shade Trees	No program	MF	Retrofit	395	424	466	584	707	823	914	965	965	914	823	707	584	466	363	277	208	154	0	0	
4001	Custom	MFMR Custom	Multifamily Market Rate	MF	Retrofit	1,076	1,020	918	789	651	520	405	309	232	172	0	0	0	0	0	0	0	0	0	0	1,012
4002	Custom	MFU Custom	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5001	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	6,206	7,221	8,023	8,468	8,468	8,023	7,221	6,206	5,125	4,095	8,530	8,646	8,730	8,642	7,291	6,908	6,217	5,343	4,413	3,526	
5002	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	4,149	3,930	3,538	3,040	2,511	2,006	1,561	1,190	893	662	3,572	3,384	3,046	2,618	2,162	1,727	1,344	1,024	769	570	
5003	Electronics	Advanced Tier 2 Power Strips	Single Family Income Eligible	SF	Retrofit	1,730	1,557	1,338	1,105	883	687	524	393	291	0	1,730	1,557	1,338	1,105	883	687	524	393	291	0	
5004	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	NC	38	56	75	96	125	171	230	300	359	405	888	1,028	1,097	1,101	1,169	1,238	1,330	2,024	1,549	1,523	
5005	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	1,839	1,743	1,569	1,348	1,113	889	692	527	396	293	1,584	1,500	1,350	1,161	958	766	596	454	341	253	
5006	Electronics	Advanced Tier 2 Power Strips	Multifamily Market Rate	MF	Retrofit	10,410	0	0	0	0	0	0	0	0	0	9,785	0	0	0	0	0	0	0	0	0	
5007	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	189	189	179	161	138	114	91	71	54	41	192	162	154	138	119	98	79	61	47	35	
5008	Electronics	Advanced Tier 2 Power Strips	Multifamily Income Eligible	MF	Retrofit	3,574	2,856	2,222	1,694	1,271	942	0	0	0	3,574	2,856	2,222	1,694	1,271	942	0	0	0	0	0	
5009	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	NC	13	19	25	32	41	57	76	99	119	134	293	340	362	364	386	409	439	669	512	503	
5010	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	3,162	2,995	2,696	2,317	1,914	1,529	1,190	907	680	504	2,722	2,579	2,321	1,995	1,648	1,316	1,024	781	586	434	
5011	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	3,162	2,995	2,696	2,317	1,914	1,529	1,190	907	680	504	2,479	2,348	2,114	1,817	1,500	1,199	933	711	533	395	
5012	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	375	562	624	669	737	922	1,117	1,299	1,443	1,523	1,842	1,921	1,830	1,685	1,548	1,520	1,522	1,541	1,555	1,538	
5013	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	1,839	1,519	1,214	944	720	540	400	0	0	1,584	1,308	1,045	813	620	465	345	0	0	0	0	
5014	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	1,839	1,519	1,214	944	720	540	400	0	0	1,442	1,191	952	740	564	423	314	0	0	0	0	
5015	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	150	225	250	268	295	370	448	521	579	611	739	770	734	676	621	610	611	618	624	617	
5016	Electronics	Advanced Tier 1 Power Strips	Single Family Income Eligible	SF	Retrofit	126	140	150	166	207	251	292	324	342	342	451	432	401	373	373	380	390	398	397	342	
5017	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	NC	12	18	24	31	40	55	74	96	115	130	285	330	352	353	375	397	427	649	497	488	
5018																										



Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6001	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	49	49	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
6002	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	49	49	50	50	50	50	50	50	50	50	50	50	50	50
6003	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	49
6004	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	26	26	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
6005	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	26	26	27	28	28	28	28	28	28	28	28	28	28	28
6006	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	26
6007	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	18	19	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6008	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	18	19	20	20	21	21	21	21	21	21	21	21	21	21
6009	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	19
6010	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	21	23	24	25	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
6011	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	21	23	24	25	25	26	26	26	26	26	26	26	26	26
6012	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	23
6013	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	41	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
6014	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	41	42	42	42	42	42	42	42	42	42	42	42	42	42
6015	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	42
6016	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	19	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
6017	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	19	20	20	20	20	20	20	20	20	20	20	20	20	20
6018	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	20
6019	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	13	14	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6020	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	13	14	15	15	16	16	16	16	16	16	16	16	16	16
6021	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	14
6022	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	14	15	16	16	16	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
6023	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	14	15	16	16	16	17	17	17	17	17	17	17	17	17
6024	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	15
6025	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	34	34	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
6026	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	34	34	35	35	35	35	35	35	35	35	35	35	35	35
6027	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	34
6028	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
6029	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	17	17	18	18	18	18	18	18	18	18	18	18	18	18
6030	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
6031	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	14	15	16	16	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
6032	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	14	15	16	16	17	17	17	17	17	17	17	17	17	17
6033	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	15
6034	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	19	20	21	22	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
6035	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	19	20	21	22	23	23	23	23	23	23	23	23	23	23
6036	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	20
6037	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
6038	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	32	32	33	33	33	33	33	33	33	33	33	33	33	33
6039	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	32
6040	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER1	16	17	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
6041	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	16	17	17	17	18	18	18	18	18	18	18	18	18	18
6042	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	17
6043	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER1	15	16	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
6044	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	15	16	17	17	18	18	18	18	18	18	18	18	18	18
6045	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16
6046	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER1	22	23	25	26	27	28	28	29	29	29	29	29	29	29	29	29	29	29	29	29
6047	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	22	23	25	26	27	28	28	29	29	29	29	29	29	29
6048	HVAC	ASHP 18 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	23
6049	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
6050	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	30	31	31	31	31	31	31	31	31	31	31	31	31	31
6051	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	31
6052	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER1	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
6053	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	15	15	15	15	15	15	15	15	15	15	15	15	15	15
6054	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15
6055	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	12	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
6056	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	12	13	13	14	14	14	14	14	14	14	14	14	14	14
6057	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	13
6058	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER1	17	18	19	19	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
6059	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	17	18	19	19	20	20	20	20	20	20	20	20	20	20
6060	HVAC	ASHP 19 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	18
6061	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	31	31	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
6062	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	31	31	32	33	33	33	33	33	33	33	33	33	33	33
6063	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	31
6064	HVAC	ASHP 20 SEER - hp baseline ER	HVAC	SF	ER1	18	19	20	20	20	21	21	21	21	21</										

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6075	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	28	
6076	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER1	14	15	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6077	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	14	15	15	15	16	16	16	16	16	16	16	16	16	16	16
6078	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	15
6079	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6080	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12
6081	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	11
6082	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER1	15	16	16	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
6083	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	15	16	16	17	17	18	18	18	18	18	18	18	18	18	18
6084	HVAC	ASHP 21 SEER - hp baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	16
6085	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	43	45	45	46	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
6086	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	MO	26	27	28	29	29	30	24	23	23	23	23	23	23	23	23	23	23	23	23	23	23
6087	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	SF	NC	2	3	4	4	5	6	6	7	8	7	7	7	7	7	6	6	6	6	13	16	16
6088	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6089	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6090	HVAC	ASHP 15 SEER - hp baseline MO	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6091	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	50	52	53	53	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
6092	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	MO	30	32	33	34	34	35	27	27	27	27	26	26	26	26	26	26	26	26	26	26	26
6093	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	SF	NC	3	4	4	5	6	7	8	8	9	9	8	8	8	7	7	7	7	7	15	18	19
6094	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	17	18	19	19	20	20	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15
6095	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	MO	24	26	28	29	30	31	32	32	26	26	25	25	24	24	24	24	24	24	24	24	24
6096	HVAC	ASHP 16 SEER - hp baseline MO	HVAC	MF	NC	2	2	3	3	4	5	5	6	6	6	6	6	5	5	5	5	5	5	11	13	13
6097	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	40	42	42	43	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
6098	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	MO	24	25	26	27	27	28	22	22	22	21	21	21	21	21	21	21	21	21	21	21	21
6099	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	4	4	5	6	7	7	7	6	6	6	6	6	6	6	12	15	15	
6100	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	14	15	16	17	17	18	14	14	14	14	14	13	13	13	13	13	13	13	13	13	13
6101	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	MO	21	23	24	25	26	27	28	23	22	22	22	21	21	21	21	21	21	21	21	21	21
6102	HVAC	ASHP 17 SEER - hp baseline MO	HVAC	MF	NC	2	2	3	3	3	4	5	5	5	5	5	4	4	4	4	4	4	9	11	12	12
6103	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	40	41	42	42	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
6104	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	MO	24	25	26	27	27	28	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6105	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	4	4	5	6	7	7	7	6	6	6	6	6	5	6	12	15	15	15
6106	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	13	14	15	15	16	16	16	13	13	13	13	12	12	12	12	12	12	12	12	12	12
6107	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	MO	19	21	22	23	24	25	25	26	21	20	20	20	20	20	19	19	19	19	19	19	19
6108	HVAC	ASHP 18 SEER - hp baseline MO	HVAC	MF	NC	1	2	2	3	3	4	4	5	5	5	5	4	4	4	4	4	4	8	10	11	11
6109	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	39	40	41	41	32	32	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
6110	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	MO	23	25	25	26	27	27	21	21	21	21	21	20	20	20	20	20	20	20	20	20	20
6111	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	4	4	5	6	7	7	7	6	6	6	5	6	6	6	12	14	15	15
6112	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	12	13	14	14	15	15	15	12	12	12	12	12	11	11	11	11	11	11	11	11	11
6113	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	MO	18	19	21	22	22	23	23	24	19	19	19	19	18	18	18	18	18	18	18	18	18
6114	HVAC	ASHP 19 SEER - hp baseline MO	HVAC	MF	NC	1	2	2	3	3	3	4	4	5	5	4	4	4	4	4	4	4	8	10	10	10
6115	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	36	37	38	38	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
6116	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	22	23	23	24	24	25	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19
6117	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	3	4	5	5	6	6	6	6	6	5	5	5	5	5	11	13	14	14
6118	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	12	12	13	13	14	14	14	11	11	11	11	11	11	11	11	11	11	11	11	11	11
6119	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	17	18	19	20	21	22	22	18	18	18	18	17	17	17	17	17	17	17	17	17	17
6120	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	NC	1	2	2	2	3	3	4	4	4	4	4	4	4	3	3	3	3	7	9	9	9
6121	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	38	39	40	41	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
6122	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	23	24	25	26	26	26	21	21	20	20	20	20	20	20	20	20	20	20	20	20	20
6123	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	NC	2	3	3	4	4	5	6	6	7	7	6	6	6	5	5	5	5	11	14	14	14
6124	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	11	12	12	13	13	13	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6125	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	16	17	18	19	20	20	21	21	17	17	17	16	16	16	16	16	16	16	16	16	16
6126	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	NC	1	2	2	2	3	3	4	4	4	4	4	4	4	3	3	3	3	7	8	9	9
6127	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	56	70	86	103	120	136	151	163	173	182	188	193	199	199	199	199	199	199	199	199	199
6128	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	56	70	86	103	120	136	151	163	173	182	188	193	199	199	199
6129	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	70	70
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	26	32	40	47	55	63	69	75	80	83	86	89	90	91	91	91	91	91	91	91	91
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	26	32	40	47	55	63	69	75	80	83	86	89	90	91	91
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	32	32
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	1	1	1	1	2	3	3	4	5	5	6	7	7	8	8	8	9	9	9	9	9
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	1	1	1	1	2	3	3	4	5	5	6	7	7	8	8
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0																		

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	47	59	73	87	101	115	127	137	146	153	158	162	166	168
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	59
6151	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	7	9	12	16	22	28	37	46	57	68	79	89	99	107	114	119	123	127	129	131
6152	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	0	0	0	0	0	0	7	9	12	16	22	28	37	46	57	68	79	89	99	107
6153	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	9
6154	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	20	26	31	38	44	50	55	60	63	66	69	70	72	73	73	73	73	73	73	73
6155	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	20	26	31	38	44	50	55	60	63	66	69	70	72	73
6156	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	26
6157	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	2	3	4	6	8	10	13	16	20	24	28	31	35	38	40	42	43	44	45	46
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	0	0	0	0	0	0	2	3	4	6	8	10	13	16	20	24	28	31	35	38
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	1	1	1	2	2	3	3	4	5	6	6	7	8	8	8	9	9	9	9	9
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	1	1	1	2	2	3	3	4	5	6	6	7	8	8
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	115	130	144	155	165	173	179	184	187	190	190	190	190	190	190	190	190	190	190	190
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	115	130	144	155	165	173	179	184	187	190	190	190	190	190
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	130
6166	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6167	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6168	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6169	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6170	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6171	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6172	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	12	15	18	21	25	28	31	34	36	38	39	40	41	41	41	41	41	41	41	41
6173	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	12	15	18	21	25	28	31	34	36	38	39	40	41	41
6174	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	15
6175	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	1	2	2	3	4	5	7	8	10	12	14	16	18	19	21	22	22	23	23	24
6176	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	0	0	0	0	0	0	1	2	2	3	4	5	7	8	10	12	14	16	18	19
6177	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
6178	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	26	33	42	51	61	72	81	90	97	103	108	112	115	117	119	119	119	119	119	119
6179	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	26	33	42	51	61	72	81	90	97	103	108	112	115	117
6180	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	33
6181	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	39	50	61	73	85	96	107	115	123	129	133	136	139	141	141	141	141	141	141	141
6182	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	39	50	61	73	85	96	107	115	123	129	133	136	139	141
6183	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	50
6184	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	17	22	27	32	37	42	47	51	54	56	58	60	61	62	62	62	62	62	62	62
6185	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	17	22	27	32	37	42	47	51	54	56	58	60	61	62
6186	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	22
6187	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	115	130	144	155	165	173	179	184	187	190	190	190	190	190	190	190	190	190	190	190
6188	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	115	130	144	155	165	173	179	184	187	190	190	190	190	190
6189	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	130
6190	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6191	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6192	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6193	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13	17	21	25	29	32	36	39	41	43	45	46	47	47	47	47	47	47	47	47
6194	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	13	17	21	25	29	32	36	39	41	43	45	46	47	47
6195	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	17
6196	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	37	47	57	69	80	90	100	108	115	121	125	128	130	132	132	132	132	132	132	132
6197	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	37	47	57	69	80	90	100	108	115	121	125	128	130	132
6198	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	47
6199	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	16	20	25	30	35	40	44	48	51	53	55	56	57	58	58	58	58	58	58	58
6200	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	16	20	25	30	35	40	44	48	51	53	55	56	57	58
6201	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	20
6202	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	115	130	144	155	165	173	179	184	187	190	190	190	190	190	190	190	190	190	190	190
6203	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	115	130	144	155	165	173	179	184	187	190	190	190	190	190
6204	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	130
6205	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6206	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6207	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6208	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	13	17	21	25	29	32	36	39	41	43	45	46	47	47	47	47	47	47	47	47
6209	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	13	17	21	25	29	32	36	39	41	43	45	46	47	47
6210	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	17
6211	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	34	43	53	64	74	84	93	101	107	112	116									

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6223	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	34	43	53	63	73	83	92	100	106	111	115	118	120	122	122	122	122	122	122	122	
6224	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	34	43	53	63	73	83	92	100	106	111	115	118	120	122	
6225	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	43	
6226	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	15	19	24	28	33	38	42	45	48	50	52	53	54	55	55	55	55	55	55	55	55
6227	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	15	19	24	28	33	38	42	45	48	50	52	53	54	55	
6228	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	19	
6229	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6230	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6231	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6232	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	26	33	42	51	61	72	81	90	97	103	108	112	115	117	119	119	119	119	119	119	
6233	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	26	33	42	51	61	72	81	90	97	103	108	112	115	117	
6234	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	33	
6235	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	31	39	48	58	67	76	84	91	97	102	105	108	110	112	112	112	112	112	112	112	
6236	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	31	39	48	58	67	76	84	91	97	102	105	108	110	112	
6237	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	39	
6238	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	14	17	21	25	29	33	37	40	42	44	46	47	48	49	49	49	49	49	49	49	
6239	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	0	0	0	0	0	0	14	17	21	25	29	33	37	40	42	44	46	47	48	49	
6240	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	17	
6241	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6242	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6243	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6244	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	26	33	42	51	61	72	81	90	97	103	108	112	115	117	119	119	119	119	119	119	
6245	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	0	0	0	0	0	0	26	33	42	51	61	72	81	90	97	103	108	112	115	117	
6246	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	33	
6247	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	74	94	115	138	160	182	201	218	231	242	251	257	262	266	248	243	238	233	227	222	
6248	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	34	43	53	63	74	83	92	100	106	111	115	118	120	122	114	112	109	107	104	102	
6249	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	NC	8	11	13	15	17	20	23	26	27	27	25	25	24	22	22	21	22	46	56	59	
6250	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6251	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	114	147	186	228	273	318	360	399	431	459	480	497	510	520	527	527	527	527	527	527	
6252	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	NC	SF	5	7	8	10	11	13	15	17	17	17	16	16	15	14	14	14	14	30	36	37	
6253	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	81	102	126	151	175	199	220	238	253	265	274	281	287	291	271	266	260	254	248	243	
6254	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	37	47	58	69	80	91	101	109	116	122	126	129	132	134	122	119	117	114	111	111	
6255	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	NC	9	12	14	16	19	22	25	28	29	29	27	27	26	24	23	24	51	62	64	64	
6256	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	127	144	160	173	184	192	199	204	208	211	203	202	201	201	200	199	199	199	198	198	
6257	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	15	19	23	27	32	36	40	43	46	48	50	51	52	53	49	48	47	46	45	44	
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	5	7	9	10	12	14	16	18	18	18	17	17	16	15	15	14	15	31	38	40	
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66	83	102	122	142	161	179	193	205	215	223	229	233	236	220	216	211	207	202	197	
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	30	38	47	56	65	74	82	89	94	99	102	105	107	108	101	99	97	95	93	90	
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	7	10	12	13	15	18	21	23	24	24	22	22	21	19	19	19	41	50	52	52	
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	64	72	80	86	92	96	100	102	104	105	102	101	101	100	100	99	99	99	99	99	
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	114	147	186	228	273	318	360	399	431	459	480	497	510	520	527	527	527	527	527	527	
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	NC	SF	5	7	8	9	11	13	15	16	17	17	16	16	15	14	14	13	14	29	36	37	
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65	81	100	120	139	158	175	189	201	211	218	224	228	231	216	212	207	202	198	193	
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	30	37	46	55	64	73	80	87	92	97	100	103	105	106	99	97	95	93	91	89	
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	7	9	11	13	15	18	20	23	23	23	22	21	21	19	19	19	19	40	49	51	
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	56	63	70	75	80	84	87	89	91	92	89	88	88	88	87	87	87	87	87	87	
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	95	123	154	190	227	264	300	331	359	381	399	413	424	432	438	438	438	438	438	438	
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	5	7	8	9	10	12	14	16	16	16	15	15	14	13	13	13	13	28	34	35	
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	60	75	93	111	129	147	162	175	186	195	202	207	211	214	200	196	192	187	183	179	
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	28	35	43	51	59	67	74	81	86	90	93	95	97	98	92	90	88	86	84	82	
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	6	9	11	12	14	16	19	21	22	21	20	20	19	17	18	17	18	37	45	47	
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	15	19	23	27	32	36	40	43	46	48	50	51	52	53	49	48	47	46	45	44	
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	4	6	7	8	9	11	13	14	15	15	14	13	13	12	12	12	12	25	31	32	
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	55	69	84	101	118	133	147	160	170	178	184	189	192	195	182	178	175	171	167	163	
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	25	32	39	46	54	61	68	73	78	82	84	87	88	89	83	82	80	78	76	75	
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	6	8	10	11	13	15	17	19	20	20	18	18	17	16	16	16	16	34	41	43	
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	37	47	59	73	87	102	115	127	138	147	153	159	163	166	168	168	168	168	168	168	
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	4	6																			



Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6371	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6372	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	18	19	19	20	21	21	21	21	21	21	21	21	21	21
6373	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	19
6374	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER1	207	211	214	214	214	214	214	214	214	214	214	214	214	214	214	214	214	214	214	214
6375	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER2	0	0	0	0	0	0	207	211	214	214	214	214	214	214	214	214	214	214	214	214
6376	HVAC	Central AC 17 SEER ER	Multifamily Market Rate	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207	211
6374	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	49	50	52	53	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
6375	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	49	50	52	53	54	54	54	54	54	54	54	54	54	54
6376	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	50
6377	HVAC	Central AC 18 SEER ER	HVAC	SF	ER1	237	241	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245	245
6378	HVAC	Central AC 18 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	237	241	245	245	245	245	245	245	245	245	245	245	245	245
6379	HVAC	Central AC 18 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	237	241
6380	HVAC	Central AC 18 SEER ER	HVAC	SF	ER1	95	97	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6381	HVAC	Central AC 18 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	95	97	99	100	100	100	100	100	100	100	100	100	100	100
6382	HVAC	Central AC 18 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	97
6383	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER1	28	32	36	40	44	46	48	50	51	52	53	53	53	53	53	53	53	53	53	53
6384	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	28	32	36	40	44	46	48	50	51	52	53	53	53	53
6385	HVAC	Central AC 18 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32
6386	HVAC	Central AC 18 SEER ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6387	HVAC	Central AC 18 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	18	19	19	20	21	21	21	21	21	21	21	21	21	21
6388	HVAC	Central AC 18 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	19
6389	HVAC	Central AC 18 SEER ER	HVAC	MF	ER1	56	58	60	62	63	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
6390	HVAC	Central AC 18 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	56	58	60	62	63	64	64	64	64	64	64	64	64	64
6391	HVAC	Central AC 18 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	58
6392	HVAC	Central AC 19 SEER ER	HVAC	SF	ER1	118	121	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122
6393	HVAC	Central AC 19 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	118	121	122	122	122	122	122	122	122	122	122	122	122	122
6394	HVAC	Central AC 19 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	121
6395	HVAC	Central AC 19 SEER ER	HVAC	SF	ER1	81	83	85	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
6396	HVAC	Central AC 19 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	81	83	85	86	86	86	86	86	86	86	86	86	86	86
6397	HVAC	Central AC 19 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	83
6398	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER1	28	32	36	40	44	46	48	50	51	52	53	53	53	53	53	53	53	53	53	53
6399	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	28	32	36	40	44	46	48	50	51	52	53	53	53	53
6400	HVAC	Central AC 19 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32
6401	HVAC	Central AC 19 SEER ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6402	HVAC	Central AC 19 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	18	19	19	20	21	21	21	21	21	21	21	21	21	21
6403	HVAC	Central AC 19 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	19
6404	HVAC	Central AC 19 SEER ER	HVAC	MF	ER1	54	57	59	60	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
6405	HVAC	Central AC 19 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	54	57	59	60	62	62	62	62	62	62	62	62	62	62
6406	HVAC	Central AC 19 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	57
6407	HVAC	Central AC 20 SEER ER	HVAC	SF	ER1	118	121	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122
6408	HVAC	Central AC 20 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	118	121	122	122	122	122	122	122	122	122	122	122	122	122
6409	HVAC	Central AC 20 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	121
6410	HVAC	Central AC 20 SEER ER	HVAC	SF	ER1	95	97	99	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
6411	HVAC	Central AC 20 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	95	97	99	100	100	100	100	100	100	100	100	100	100	100
6412	HVAC	Central AC 20 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	97
6413	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER1	28	32	36	40	44	46	48	50	51	52	53	53	53	53	53	53	53	53	53	53
6414	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	28	32	36	40	44	46	48	50	51	52	53	53	53	53
6415	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32
6416	HVAC	Central AC 20 SEER ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6417	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	18	19	19	20	21	21	21	21	21	21	21	21	21	21
6418	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	19
6419	HVAC	Central AC 20 SEER ER	HVAC	MF	ER1	53	56	58	59	60	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
6420	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	0	0	0	0	0	0	53	56	58	59	60	61	61	61	61	61	61	61	61	61
6421	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	56
6422	HVAC	Central AC 21 SEER ER	HVAC	SF	ER1	118	121	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122
6423	HVAC	Central AC 21 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	118	121	122	122	122	122	122	122	122	122	122	122	122	122
6424	HVAC	Central AC 21 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118	121
6425	HVAC	Central AC 21 SEER ER	HVAC	SF	ER1	81	83	85	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
6426	HVAC	Central AC 21 SEER ER	HVAC	SF	ER2	0	0	0	0	0	0	81	83	85	86	86	86	86	86	86	86	86	86	86	86
6427	HVAC	Central AC 21 SEER ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	83
6428	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER1	28	32	36	40	44	46	48	50	51	52	53	53	53	53	53	53	53	53	53	53
6429	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER2	0	0	0	0	0	0	28	32	36	40	44	46	48	50	51	52	53	53	53	53
6430	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32
6431	HVAC	Central AC 21 SEER ER																							

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6442	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	73	78	81	84	86	88	89	89	89	89	89	89	89	89	89	89	89	89	89	89
6443	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	82	88	94	98	102	104	106	108	108	108	108	108	108	108	108	108	108	108	108	108
6444	HVAC	Central AC 15 SEER MO	HVAC	MF	NC	27	36	43	49	56	67	77	86	89	88	82	81	79	71	72	70	72	153	187	194
6445	HVAC	Central AC 16 SEER MO	HVAC	SF	MO	210	216	220	223	223	223	223	223	223	223	223	223	223	223	223	223	223	223	223	223
6446	HVAC	Central AC 16 SEER MO	HVAC	SF	MO	51	54	56	57	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
6447	HVAC	Central AC 16 SEER MO	Single Family Income Eligible	SF	MO	31	36	40	45	48	51	54	56	57	58	59	59	59	59	59	59	59	59	59	59
6448	HVAC	Central AC 16 SEER MO	HVAC	SF	NC	98	133	160	183	209	247	286	319	331	327	305	301	291	264	269	261	269	569	692	718
6449	HVAC	Central AC 16 SEER MO	Multifamily Market Rate	MF	MO	230	234	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
6450	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	39	41	43	45	46	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48
6451	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	82	88	94	98	102	104	106	108	108	108	108	108	108	108	108	108	108	108	108	108
6452	HVAC	Central AC 16 SEER MO	HVAC	MF	NC	27	36	43	49	56	67	77	86	89	88	82	81	79	71	72	70	72	153	187	194
6453	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	132	134	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
6454	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	45	47	48	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
6455	HVAC	Central AC 17 SEER MO	Single Family Income Eligible	SF	MO	29	34	38	42	46	48	51	53	54	55	56	56	56	56	56	56	56	56	56	56
6456	HVAC	Central AC 17 SEER MO	HVAC	SF	NC	37	50	60	68	78	92	107	119	124	122	114	113	109	99	100	98	100	213	259	268
6457	HVAC	Central AC 17 SEER MO	Multifamily Market Rate	MF	MO	288	294	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298
6458	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	39	41	43	45	46	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48
6459	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	72	77	81	83	86	87	88	88	88	88	88	88	88	88	88	88	88	88	88	88
6460	HVAC	Central AC 17 SEER MO	HVAC	MF	NC	9	13	15	17	20	23	27	30	31	31	29	29	28	25	26	25	26	54	66	68
6461	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	130	133	136	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138
6462	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	23	24	25	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
6463	HVAC	Central AC 18 SEER MO	Single Family Income Eligible	SF	MO	15	18	19	21	22	23	24	25	25	26	26	26	26	26	26	26	26	26	26	26
6464	HVAC	Central AC 18 SEER MO	HVAC	SF	NC	19	25	30	35	40	47	54	61	63	62	58	57	55	50	51	50	51	108	131	136
6465	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	39	41	43	45	46	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48
6466	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	76	80	84	87	89	91	92	92	92	92	92	92	92	92	92	92	92	92	92	92
6467	HVAC	Central AC 18 SEER MO	HVAC	MF	NC	10	13	16	18	20	24	28	31	32	32	30	29	28	26	26	25	26	55	67	70
6468	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	132	134	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
6469	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	18	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
6470	HVAC	Central AC 19 SEER MO	Single Family Income Eligible	SF	MO	15	17	18	19	20	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22
6471	HVAC	Central AC 19 SEER MO	HVAC	SF	NC	16	21	26	29	34	40	46	51	53	52	49	48	47	42	43	42	43	91	111	115
6472	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	49	52	54	56	58	59	60	60	60	60	60	60	60	60	60	60	60	60	60	60
6473	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6474	HVAC	Central AC 19 SEER MO	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6475	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	132	134	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
6476	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	21	21	22	22	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
6477	HVAC	Central AC 20 SEER MO	Single Family Income Eligible	SF	MO	14	16	17	19	20	21	21	22	22	22	23	23	23	23	23	23	23	23	23	23
6478	HVAC	Central AC 20 SEER MO	HVAC	SF	NC	18	24	29	33	38	45	52	58	60	59	55	55	53	48	49	47	49	103	126	130
6479	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	49	52	54	56	58	59	60	60	60	60	60	60	60	60	60	60	60	60	60	60
6480	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	73	77	81	84	86	87	89	89	89	89	89	89	89	89	89	89	89	89	89	89
6481	HVAC	Central AC 20 SEER MO	HVAC	MF	NC	4	6	7	8	9	11	13	14	15	15	14	14	13	12	12	12	12	26	31	32
6482	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	132	134	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
6483	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	20	21	21	21	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
6484	HVAC	Central AC 21 SEER MO	Single Family Income Eligible	SF	MO	13	15	16	18	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6485	HVAC	Central AC 21 SEER MO	HVAC	SF	NC	18	24	29	33	37	44	51	57	59	58	54	54	52	47	48	47	48	101	124	128
6486	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	39	41	43	45	46	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48
6487	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	68	71	73	75	77	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78
6488	HVAC	Central AC 21 SEER MO	HVAC	MF	NC	4	6	7	8	9	11	12	14	14	14	13	13	13	12	12	11	12	25	30	31
6489	HVAC	ECM Fan	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6490	HVAC	ECM Fan	HVAC	SF	Retrofit	599	457	343	254	0	0	599	457	343	254	0	0	599	457	343	254	0	0	599	457
6491	HVAC	ECM Fan	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6492	HVAC	ECM Fan	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6493	HVAC	ECM Fan	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6494	HVAC	ECM Fan	HVAC	MF	Retrofit	602	498	398	309	236	177	734	498	398	309	236	177	734	498	398	309	236	177	734	498
6495	HVAC	ECM Fan	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6496	HVAC	Ductless AC ER	HVAC	SF	ER1	1,447	1,484	1,512	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	
6497	HVAC	Ductless AC ER	HVAC	SF	ER2	0	0	0	0	0	0	1,447	1,484	1,512	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533	1,533
6498	HVAC	Ductless AC ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,447	1,484
6499	HVAC	Ductless AC ER	HVAC	SF	ER1	325	333	340	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344	344
6500	HVAC	Ductless AC ER	HVAC	SF	ER2	0	0	0	0	0	0	325	333	340	344	344	344	344	344	344	344	344	344	344	344
6501	HVAC	Ductless AC ER	HVAC	SF	ER3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325	333
6502	HVAC	Ductless AC ER	HVAC	MF	ER1	18	19	19	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
6503	HVAC	Ductless AC ER	HVAC	MF	ER2	0	0	0	0	0</															







Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6664	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	196	258	331	417	513	614	715	810	896	970	1,031	1,080	1,118	1,147	1,169	1,185	1,185	1,185	1,185	1,185	
6665	HVAC	ENERGY STAR Room AC	Multifamily Income Eligible	MF	MO	41	49	57	64	71	77	82	86	89	91	93	94	94	94	94	94	94	94	94	94	94
6666	HVAC	ENERGY STAR Room AC	Efficient Products	MF	NC	3	4	6	7	9	13	17	23	27	61	70	77	81	82	90	96	102	151	171	171	
6667	HVAC	AC Tune-Up	HVAC	SF	Retrofit	98	114	224	247	357	373	470	470	551	535	601	573	630	594	630	594	630	594	630	594	
6668	HVAC	AC Tune-Up	Single Family Income Eligible	SF	Retrofit	15	16	33	36	57	65	91	104	131	144	170	178	199	203	219	218	230	226	237	226	
6669	HVAC	AC Tune-Up	Multifamily Market Rate	MF	Retrofit	38	36	70	64	93	82	107	93	115	99	115	99	115	99	115	99	115	99	115	99	
6670	HVAC	AC Tune-Up	Multifamily Income Eligible	MF	Retrofit	14	16	33	38	55	60	76	79	93	93	104	101	110	106	114	106	114	106	114	106	
6671	HVAC	Dirty Filter Alarm	Energy Efficiency Kits	SF	Retrofit	8,299	7,132	5,890	4,706	3,662	2,791	2,094	1,552	0	0	0	0	0	0	0	8,299	7,132	5,890	4,706	3,662	2,791
6672	HVAC	Dirty Filter Alarm	Single Family Income Eligible	SF	Retrofit	3,007	2,339	1,783	1,338	992	0	0	0	0	0	0	0	0	0	0	3,007	2,339	1,783	1,338	992	0
6673	HVAC	Dirty Filter Alarm	Multifamily Market Rate	MF	Retrofit	1,111	1,052	947	814	672	537	418	319	239	177	0	0	0	0	1,111	1,052	947	814	672	537	
6674	HVAC	Dirty Filter Alarm	Multifamily Income Eligible	MF	Retrofit	1,445	1,242	1,026	820	638	486	365	270	0	0	0	0	0	0	1,445	1,242	1,026	820	638	486	
6675	HVAC	HP Tune-Up	HVAC	SF	Retrofit	5	5	10	12	17	17	22	22	26	25	28	27	29	28	29	28	29	28	29	28	29
6676	HVAC	HP Tune-Up	Single Family Income Eligible	SF	Retrofit	1	1	3	3	5	5	7	9	11	12	14	15	16	17	18	18	19	19	19	19	
6677	HVAC	HP Tune-Up	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6678	HVAC	HP Tune-Up	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6679	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	Retrofit	326	380	422	445	445	422	380	326	269	215	494	507	517	516	445	422	380	326	269	215	
6680	HVAC	Setback Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	84	93	100	110	138	167	194	215	227	227	299	287	267	248	248	252	259	264	264	227	
6681	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	NC	1	1	1	2	2	3	4	5	6	7	14	17	18	18	19	20	22	33	25	25	
6682	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	1,120	895	697	531	398	295	0	0	0	0	1,120	895	697	531	398	295	0	0	0	0	
6683	HVAC	Setback Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	252	305	355	395	417	417	395	355	305	252	454	462	475	484	483	417	395	355	305	252	
6684	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	NC	17	21	23	24	25	27	29	31	31	29	55	56	54	50	50	51	53	78	59	57	
6685	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	1,622	1,887	2,097	2,213	2,213	2,097	1,887	1,622	1,339	1,070	2,455	2,522	2,573	2,566	2,213	2,097	1,887	1,622	1,339	1,070	
6686	HVAC	Setback Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	470	522	559	616	770	933	1,085	1,206	1,273	1,273	1,676	1,607	1,492	1,386	1,386	1,412	1,451	1,480	1,476	1,273	
6687	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	3	5	6	8	10	14	19	24	29	33	72	83	89	89	95	100	108	164	125	123	
6688	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	2,333	1,864	1,450	1,105	829	615	0	0	0	2,333	1,864	1,450	1,105	829	615	0	0	0	0	0	
6689	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	2,675	3,240	3,770	4,188	4,420	4,420	4,188	3,770	3,240	2,675	4,813	4,903	5,037	5,139	5,126	4,420	4,188	3,770	3,240	2,675	
6690	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	NC	81	99	107	111	116	126	137	145	144	137	259	264	255	236	236	239	248	368	276	268	
6691	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	Retrofit	5,248	6,106	6,784	7,161	7,161	6,784	6,106	5,248	4,334	3,463	7,942	8,160	8,325	8,303	7,161	6,784	6,106	5,248	4,334	3,463	
6692	HVAC	Setback Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	627	697	746	822	1,029	1,246	1,450	1,610	1,700	1,700	2,238	2,146	1,992	1,851	1,851	1,885	1,937	1,976	1,971	1,700	
6693	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	NC	8	11	15	19	25	34	45	59	70	80	174	202	215	216	230	243	261	397	304	299	
6694	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6695	HVAC	Setback Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6696	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6697	HVAC	Room AC recycling - Primary	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6698	HVAC	Room AC recycling - Primary	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6699	HVAC	Room AC recycling - Secondary	Appliance Recycling	SF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6700	HVAC	Room AC recycling - Secondary	Appliance Recycling	MF	Recycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6701	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6702	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6703	HVAC	Energy Recovery Ventilator	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6704	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6705	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6706	HVAC	Energy Recovery Ventilator	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6707	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6708	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6709	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6710	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6711	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6712	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6713	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6714	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6715	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6716	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6717	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6718	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6719	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6720	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6721	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6722	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6723	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6724	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6727	HVAC	ENERGY STAR Bath Vent																								

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Participants)

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	18,828	18,828	18,828	18,828	18,828	18,828	18,828	18,828	18,828	0	0	0	0	0	0	0	0	0	0	18,828	18,828	
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	4,185	4,265	4,323	4,323	4,323	4,323	4,323	4,323	4,323	138	59	0	0	0	0	0	0	0	0	0	4,185	4,323
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	26,626	26,626	26,626	26,626	26,626	26,626	26,626	26,626	26,626	0	0	0	0	0	0	0	0	0	0	0	26,626	26,626
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	9,414	9,414	9,414	9,414	9,414	9,414	9,414	9,414	9,414	0	0	0	0	0	0	0	0	0	0	0	9,414	9,414
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	2,888	0	0	0	0	0	0	0	0	0	0	0	2,888	2,888
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	2,093	2,132	2,162	2,162	2,162	2,162	2,162	2,162	2,162	69	29	0	0	0	0	0	0	0	0	0	2,093	2,162
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	11,259	11,259	11,259	11,259	11,259	11,259	11,259	11,259	11,259	0	0	0	0	0	0	0	0	0	0	0	11,259	11,259
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	4,976	4,976	4,976	4,976	4,976	4,976	4,976	4,976	4,976	0	0	0	0	0	0	0	0	0	0	0	4,976	4,976
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	1,522	1,522	1,522	1,522	1,522	1,522	1,522	1,522	1,522	0	0	0	0	0	0	0	0	0	0	0	1,522	1,522
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	1,103	1,124	1,140	1,140	1,140	1,140	1,140	1,140	1,140	36	15	0	0	0	0	0	0	0	0	0	1,103	1,140
7021	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	11,259	11,259	11,259	11,259	11,259	11,259	11,259	11,259	11,259	0	0	0	0	0	0	0	0	0	0	0	11,259	11,259
7022	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	4,976	4,976	4,976	4,976	4,976	4,976	4,976	4,976	4,976	0	0	0	0	0	0	0	0	0	0	0	4,976	4,976
7023	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	1,522	1,522	1,522	1,522	1,522	1,522	1,522	1,522	1,522	0	0	0	0	0	0	0	0	0	0	0	1,522	1,522
7024	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	1,103	1,124	1,140	1,140	1,140	1,140	1,140	1,140	1,140	36	15	0	0	0	0	0	0	0	0	0	1,103	1,140
7025	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	5,630	5,630	5,630	5,630	5,630	5,630	5,630	5,630	5,630	0	0	0	0	0	0	0	0	0	0	0	5,630	5,630
7026	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7027	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7028	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7029	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7030	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7031	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7032	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7033	Lighting	LED - 4W Candelabra (CFL baseline)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7034	Lighting	LED - 4W Candelabra (CFL baseline)	Single Family Income Eligible	SF	MO	6,940	6,940	6,940	6,940	6,940	6,940	6,940	6,940	6,940	0	0	0	0	0	0	0	0	0	0	0	6,940	6,940
7035	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7036	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Income Eligible	MF	MO	926	926	926	926	926	926	926	926	926	0	0	0	0	0	0	0	0	0	0	0	926	926
7037	Lighting	LED - 6W Uplight Light 6-24 (replacing CFL)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7038	Lighting	LED - 6W Uplight Light 6-24 (replacing CFL)	Single Family Income Eligible	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7039	Lighting	LED - 6W Uplight Light 6-24 (replacing CFL)	Multifamily Market Rate	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7040	Lighting	LED - 6W Uplight Light 6-24 (replacing CFL)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7041	Lighting	LED - 12W Uplight Light 6-24 (replacing CFL)	PAYS	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7042	Lighting	LED - 12W Uplight Light 6-24 (replacing CFL)	Single Family Income Eligible	SF	MO	6,940	6,940	6,940	6,940	6,940	6,940	6,940	6,940	6,940	0	0	0	0	0	0	0	0	0	0	0	6,940	6,940
7043	Lighting	LED - 12W Uplight Light 6-24 (replacing CFL)	Multifamily Market Rate	MF	MO	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	3,481	0	0	0	0	0	0	0	0	0	0	0	3,481	3,481
7044	Lighting	LED - 12W Uplight Light 6-24 (replacing CFL)	Multifamily Income Eligible	MF	MO	1,261	1,285	1,303	1,303	1,303	1,303	1,303	1,303	1,303	42	18	0	0	0	0	0	0	0	0	0	1,261	1,303
7045	Lighting	LED Nightlights	Energy Efficiency Kits	SF	MO	1,072	1,072	1,072	1,072	1,072	1,072	1,072	1,072	1,072	0	0	0	0	0	0	0	0	0	0	0	1,072	1,072
7046	Lighting	LED Nightlights	Single Family Income Eligible	SF	MO	3,789	3,789	3,789	3,789	3,789	3,789	3,789	3,789	3,789	0	0	0	0	0	0	0	0	0	0	0	3,789	3,789
7047	Lighting	LED Nightlights	Multifamily Market Rate	MF	MO	1,558	1,558	1,558	1,558	1,558	1,558	1,558	1,558	1,558	0	0	0	0	0	0	0	0	0	0	0	1,558	1,558
7048	Lighting	LED Nightlights	Multifamily Income Eligible	MF	MO	998	1,012	1,012	1,012	1,012	1,012	1,012	1,012	1,012	14	0	0	0	0	0	0	0	0	0	0	998	1,012
7049	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	3,817	5,726	6,362	6,816	7,506	9,394	11,375	13,236	14,705	15,521	19,339	20,431	19,598	18,192	16,900	16,900	17,215	17,687	18,045	17,997	17,997	
7050	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	2,092	3,138	3,486	3,735	4,113	5,148	6,234	7,253	8,058	8,506	10,597	11,196	10,739	9,969	9,261	9,261	9,434	9,692	9,888	9,888	9,862	
7051	Lighting	Occupancy Sensor	Efficient Products	SF	NC	91	134	178	229	299	408	549	714	855	965	2,116	2,450	2,615	2,625	2,786	2,951	3,171	4,824	3,693	3,631	3,631	
7052	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	382	573	636	682	751	939	1,138	1,324	1,471	1,552	1,934	2,043	1,960	1,819	1,690	1,690	1,722	1,769	1,805	1,800	1,800	
7053	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	624	936	1,040	1,115	1,227	1,536	1,860	2,164	2,405	2,538	3,162	3,341	3,205	2,975	2,763	2,763	2,815	2,892	2,951	2,943	2,943	
7054	Lighting	Occupancy Sensor	Efficient Products	MF	NC	16	23	30	39	51	70	94	122	146	164	360	417	445	447	474	502	540	821	629	618	618	
7055	Lighting	Linear LED	Efficient Products	SF	MO	29,569	38,059	47,937	58,912	70,495	82,079	93,054	102,932	111,421	118,432	124,034	128,392	131,714	134,207	136,055	136,055	136,055	136,055	136,055	136,055	136,055	
7056	Lighting	Linear LED	Single Family Income Eligible	SF	MO	21,752	27,398	33,671	40,291	46,912	53,185	58,831	63,683	67,690	70,891	73,382	75,281	76,706	77,762	77,762	77,762	77,762	77,762	77,762	77,762	77,762	77,762
7057	Lighting	Linear LED	Efficient Products	SF	NC	362	532	707	907	1,188	1,622	2,181	2,836	3,397	3,832	4,020	4,397	10,105	10,845	11,473	11,553	11,992	18,589	14,616	15,069	15,069	
7058	Lighting	Linear LED	Efficient Products	MF	MO	2,943	3,788	4,771	5,863	7,016	8,169	9,261	10,245	11,089	11,787	12,345	12,779	13,109	13,357	13,541	13,541	13,541	13,541	13,541	13,541	13,541	13,541
7059	Lighting	Linear LED	Multifamily Income Eligible	MF	MO	8,982	9,722	10,334	10,823	11,203	11,493	11,711	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872	11,872
7060	Lighting	Linear LED	Efficient Products	MF	NC	61	90	120	154	201	275	369	480	575	649	681	745	1,712	1,837	1,944	1,957	2,032	3,149	2,476	2,553	2,553	
7061	Lighting	Custom Lighting LED	PAYS	SF	Retrofit	52	78	87	93	102	128	155	180	200	211	211	200	180	155	128	102	80	61				

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
8022	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8023	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8024	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8025	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8026	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8027	Pool	Pool Heater (COP 5.5-5.9)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8028	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8029	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8030	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8031	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8032	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8033	Pool	Pool Heater (COP >= 6.0)	Multifamily Income Eligible	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8034	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9001	Water Heating	Kitchen Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	559	462	369	287	219	164	122	0	0	559	462	369	287	219	164	122	0	0	0	0
9002	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	46	69	76	82	90	112	136	158	176	186	232	245	235	218	202	202	206	212	216	215
9003	Water Heating	Kitchen Faucet Aerator	Single Family Income Eligible	SF	Retrofit	605	672	709	709	672	605	520	429	343	267	808	824	822	709	672	605	520	429	343	267
9004	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	20	30	33	36	39	49	59	69	77	81	101	107	102	95	88	88	90	92	94	94
9005	Water Heating	Kitchen Faucet Aerator	Multifamily Market Rate	MF	Retrofit	444	333	247	0	0	0	0	0	0	444	333	247	0	0	0	0	0	0	0	0
9006	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	1	1	1	1	1	2	2	2	3	3	4	4	3	3	3	3	3	3	3	3
9007	Water Heating	Kitchen Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	781	703	604	499	398	310	236	177	131	0	781	703	604	499	398	310	236	177	131	0
9008	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	5	7	8	9	10	12	14	17	19	20	25	26	25	23	22	22	23	23	23	23
9009	Water Heating	Bathroom Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9010	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9011	Water Heating	Bathroom Faucet Aerator	Single Family Income Eligible	SF	Retrofit	1,742	1,839	1,839	1,742	1,568	1,348	1,113	889	692	527	2,138	2,132	1,839	1,742	1,568	1,348	1,113	889	692	527
9012	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	137	206	229	245	270	338	409	476	529	559	696	735	705	655	608	608	620	637	650	648
9013	Water Heating	Bathroom Faucet Aerator	Multifamily Market Rate	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9014	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9015	Water Heating	Bathroom Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	874	787	676	558	446	347	265	199	147	0	874	787	676	558	446	347	265	199	147	0
9016	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	5	8	9	10	11	13	16	19	21	22	28	29	28	26	24	24	25	25	26	26
9017	Water Heating	Low Flow Showerhead	Energy Efficiency Kits	SF	Retrofit	3,359	3,546	3,546	3,359	3,024	2,599	2,146	1,715	1,334	1,017	4,122	4,111	3,546	3,359	3,024	2,599	2,146	1,715	1,334	1,017
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	565	847	941	1,009	1,111	1,390	1,683	1,958	2,176	2,296	2,861	3,023	2,900	2,692	2,500	2,500	2,547	2,617	2,670	2,663
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	1,136	1,262	1,332	1,332	1,262	1,136	976	806	644	501	1,518	1,549	1,544	1,332	1,262	1,136	976	806	644	501
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	321	482	535	574	632	790	957	1,114	1,237	1,306	1,627	1,719	1,649	1,531	1,422	1,422	1,449	1,488	1,518	1,514
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	616	0	0	0	0	0	0	0	0	0	616	0	0	0	0	0	0	0	0	0
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	1	2	2	2	2	3	4	4	5	5	6	7	6	6	5	6	6	6	6	6
9023	Water Heating	Low Flow Showerhead	Multifamily Income Eligible	MF	Retrofit	727	654	562	464	371	289	220	165	122	0	727	654	562	464	371	289	220	165	122	0
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	8	12	14	15	16	20	25	29	32	34	42	45	43	40	37	37	38	39	39	39
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9031	Water Heating	Pipe Insulation	PAYS	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9032	Water Heating	Pipe Insulation	Multifamily Income Eligible	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9033	Water Heating	Water Heater Wrap	Energy Efficiency Kits	SF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9034	Water Heating	Water Heater Wrap	Single Family Income Eligible	SF	Retrofit	298	361	421	467	493	493	467	421	361	298	238	186	440	467	499	467	493	493	467	421
9035	Water Heating	Water Heater Wrap	Energy Efficiency Kits	MF	Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9036	Water Heating	Water Heater Wrap	Multifamily Income Eligible	MF	Retrofit	399	483	562	624	659	659	624	562	483	399	319	248	588	625	667	624	659	659	624	562
9037	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	194	265	360	484	644	845	1,087	1,369	1,683	2,014	2,345	2,658	2,941	3,183	3,383	3,543	3,668	3,763	3,834	3,887
9038	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	69	94	128	172	229	300	387	487	598	716	834	945	1,045	1,132	1,203	1,260	1,304	1,338	1,363	1,382
9039	Water Heating	Heat Pump Hot Water Heater	Single Family Income Eligible	SF	MO	94	128	172	229	300	387	487	598	716	834	945	1,045	1,132	1,203	1,260	1,304	1,338	1,363	1,382	1,382
9040	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	NC	9	13	17	22	29	40	53	69	83	94	99	108	113	255	285	291	297	448	350	363
9041	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	19	27	36	49	65	85	109	138	169	202	235	267	295	320	340	356	368	378	385	390
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	9	12	16	22	29	38	49	61	75	90	105	119	132	143	152	159	164	169	172	174
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	277	357	450	552	661	770	873	965	1,045	1,111	1,163	1,204	1,235	1,258	1,276	1,276	1,276	1,276	1,276	1,276
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	1	2	3	4	5	7	9	12	14	16	17	18	19	43	48	49	50	75	59	61
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products</																						

Appendix B: Residential Incremental Annual Program Realistic Achievable Potential (Participants)

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Unit Descriptor	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	17	24	30	37	44	55	67	79	85	86	83	84	82	75	78	77	79	167	100	100
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	115	162	204	245	296	369	449	525	567	578	554	560	549	503	522	515	529	1,121	670	670
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	37	52	66	79	95	119	144	169	182	186	178	180	176	162	168	166	170	360	216	216



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1073	Appliances	Heat Pump Dryer	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2001	Behavior	Home Energy Report	No program	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2002	Behavior	Home Energy Report	No program	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2003	Behavior	Home Energy Report	No program	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2004	Behavior	Home Energy Report	No program	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2005	Behavior	Home Energy Report	No program	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2006	Behavior	Home Energy Report	No program	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2013	Behavior	AMI Data Portal	No program	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2014	Behavior	AMI Data Portal	No program	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2015	Behavior	AMI Data Portal	No program	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
2016	Behavior	AMI Data Portal	No program	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2017	Behavior	AMI Data Portal	No program	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%	
2018	Behavior	AMI Data Portal	No program	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	60%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	60%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	60%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	







Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3134	Building Shell	Floor Insulation (R13 base) - electric furnace base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3135	Building Shell	Floor Insulation (R13 base) - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3136	Building Shell	Floor Insulation (R13 base) - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3137	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3138	Building Shell	Floor Insulation (R13 base) - heat pump base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3141	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	60%	5%	6%	7%	8%	9%	10%	10%	9%	8%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	81%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3149	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3150	Building Shell	Basement Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3151	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3152	Building Shell	Basement Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3157	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3158	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3159	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3160	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3161	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3162	Building Shell	Foundation Sidewall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3163	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3164	Building Shell	Foundation Sidewall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3165	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3166	Building Shell	Foundation Sidewall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3167	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3168	Building Shell	Foundation Sidewall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3169	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3170	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3171	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3172	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3173	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3174	Building Shell	Insulated Cellular Shades - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3175	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3176	Building Shell	Insulated Cellular Shades - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3181	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%

Appendix B: Residential MAP Annual Penetration %

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3182	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3183	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3184	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	81%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	81%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3193	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3194	Building Shell	Storm Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3195	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3196	Building Shell	Storm Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	81%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3197	Building Shell	Wall Insulation - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3198	Building Shell	Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3199	Building Shell	Wall Insulation - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3200	Building Shell	Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	0%
3201	Building Shell	Wall Insulation - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3202	Building Shell	Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3203	Building Shell	Wall Insulation - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3204	Building Shell	Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	0%
3205	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3206	Building Shell	Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3207	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3208	Building Shell	Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	0%
3209	Building Shell	Thin Triple Windows - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3217	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3218	Building Shell	Thin Triple Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3219	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3220	Building Shell	Thin Triple Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3228	Building Shell	Advanced Walls - heat pump base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	
3229	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3230	Building Shell	Advanced Walls - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	67%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
3231	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3232	Building Shell	Advanced Walls - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	
3233	Building Shell	Cool Roof	PAYS	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3234	Building Shell	Cool Roof	Single Family Income Eligible	SF	Retrofit	67%	4%	5%	6%	7%	8%	9%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%	0%	0%	0%
3235	Building Shell	Cool Roof	PAYS	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
3236	Building Shell	Cool Roof	Multifamily Income Eligible	MF	Retrofit	67%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	3%	2%	1%	0%	0%	0%	0%	0%	0%	0%
3237	Building Shell	Shade Trees	No program	SF	Retrofit	67%	4%	4%	4%	5%	7%	8%	9%	9%	9%	9%	8%	7%	5%	4%	3%	3%	2%	1%	0%	0%	0%
3238	Building Shell	Shade Trees	No program	SF	Retrofit	67%	4%	4%	4%	5%	7%																





Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6116	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	MO	63%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6117	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	66%
6118	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6119	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	MO	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6120	HVAC	ASHP 20 SEER - hp baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%
6121	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	66%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	57%
6122	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	MO	63%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6123	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	66%
6124	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6125	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	MO	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6126	HVAC	ASHP 21 SEER - hp baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%
6127	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6128	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6129	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6137	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6138	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6139	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6140	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6141	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6142	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%	81%
6143	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%	81%
6144	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%	81%
6145	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6146	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6147	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6148	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	66%
6151	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	66%	3%	5%	6%	8%	11%	14%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%
6152	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	66%	3%	5%	6%	8%	11%	14%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%
6153	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	66%	3%	5%	6%	8%	11%	14%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%
6154	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6155	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6156	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	63%
6157	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	63%	3%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	63%	3%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	63%	3%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	63%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%







Appendix B: Residential MAP Annual Penetration %

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6284	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6285	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6286	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6287	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6288	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6289	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6290	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	67%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6291	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	67%	49%	50%	52%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
6292	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6293	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6294	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	81%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
6295	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6296	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	67%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6297	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	67%	49%	50%	52%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
6298	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6299	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6300	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	63%	65%	67%	72%	74%	76%	78%
6301	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6302	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	67%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6303	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	67%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6304	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6305	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	62%	51%	54%	57%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6306	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	63%	65%	67%	72%	74%	76%	78%
6307	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6308	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6309	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6310	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	66%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6311	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6312	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	63%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6313	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	63%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6314	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER1	63%	32%	37%	42%	46%	50%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6315	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER2	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6316	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER3	63%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6317	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6318	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6319	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6320	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER1	62%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	56%
6321	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER2	62%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	58%	60%	61%
6322	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER3	62%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	58%	60%	61%
6323	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	81%	70%	73%	76%	77%	79%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
6324	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	81%	32%	33%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%
6325	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6326	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER1	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6327	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER2	81%	31%	32%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%
6328	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER3	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6329	HVAC	Central AC 16 SEER ER	HVAC	SF	ER1	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	56%
6330	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	56%
6331	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	66%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	55%	56%
6332	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	66%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	55%	56%	57%
6333	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	66%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	55%	56%	57%
6334	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	66%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	55%	56%	57%
6335	HVAC	Central AC 16 SEER ER	HVAC	SF	ER1	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%
6336	HVAC	Central AC 16 SEER ER	HVAC	SF	ER2	63%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	42%	46%	50%	53%	55%	57%	59%
6337	HVAC	Central AC 16 SEER ER	HVAC	SF	ER3	63%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6338	HVAC	Central AC 16 SEER ER	PAYS	SF	ER1	63%	3%	4%	6%	8%	10%	13%	17%	21%	26%	32%	37%	42%	46%	50%	53%	55%	57%	59%	60%	61%
6339	HVAC	Central AC 16 SEER ER	PAYS	SF	ER2	63%	3%	4%	5%	7%	10%	13%	17%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%
6340	HVAC	Central AC 16 SEER ER	PAYS	SF	ER3	63%	3%	4%	5%	7%	10%	13%	17%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%
6341	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER1	63%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6342	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER2	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6343	HVAC	Central AC 16 SEER ER	Single Family Income Eligible	SF	ER3	63%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6344	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6345	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6346	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6347	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER1	62%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	
6348	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER2	62%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	
6349	HVAC	Central AC 16 SEER ER	Multifamily Market Rate	MF	ER3	62%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	
6350	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	62%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	34%	39%	43%	47%	50%	52%	54%	55%	56%	
6351	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	
6352	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	
6353	HVAC	Central AC 16 SEER ER	HVAC	MF	ER1	81%	70%	73%	76%	77%	79%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
6354	HVAC	Central AC 16 SEER ER	HVAC	MF	ER2	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6355	HVAC	Central AC 16 SEER ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6356	HVAC	Central AC 16 SEER ER	PAYS	MF	ER1	81%	4%	5%	7%	10%	13%	17%	22%	28%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6357	HVAC	Central AC 16 SEER ER	PAYS	MF	ER2	81%	4%	5%	7%	10%	13%	17%	22%	28%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6358	HVAC	Central AC 16 SEER ER	PAYS	MF	ER3	81%	4%	5%	7%	10%	13%	17%	22%	28%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6359	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER1	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6360	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER2	81%	31%	32%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6361	HVAC	Central AC 16 SEER ER	Multifamily Income Eligible	MF	ER3	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6362	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	56%	
6363	HVAC	Central AC 17 SEER ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	
6364	HVAC	Central AC 17 SEER ER	HVAC	SF	ER3	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	52%	54%	55%	
6365	HVAC	Central AC 17 SEER ER	HVAC	SF	ER1	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6366	HVAC	Central AC 17 SEER ER	HVAC	SF	ER2	63%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	42%	46%	50%	53%	55%	57%	59%	60%	
6367	HVAC	Central AC 17 SEER ER	HVAC	SF	ER3	63%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6368	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER1	63%	32%	37%	42%	46%	50%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6369	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER2	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6370	HVAC	Central AC 17 SEER ER	Single Family Income Eligible	SF	ER3	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6371	HVAC	Central AC 17 SEER ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6372	HVAC	Central AC 17 SEER ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6373	HVAC	Central AC 17 SEER ER	HVAC	MF	ER3	62%	47%	50																		



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6462	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	63%	41%	42%	43%	44%	45%	45%	45%	45%	45%	45%	45%	45%	45%	48%	51%	53%	55%	57%	58%	59%	
6463	HVAC	Central AC 18 SEER MO	Single Family Income Eligible	SF	MO	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	
6464	HVAC	Central AC 18 SEER MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	
6465	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6466	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	81%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	
6467	HVAC	Central AC 18 SEER MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	
6468	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6469	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6470	HVAC	Central AC 19 SEER MO	Single Family Income Eligible	SF	MO	63%	42%	46%	50%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	
6471	HVAC	Central AC 19 SEER MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	
6472	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	62%	51%	54%	57%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	
6473	HVAC	Central AC 19 SEER MO	HVAC	MF	MO	81%	39%	40%	41%	42%	43%	43%	43%	43%	43%	43%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%	
6474	HVAC	Central AC 19 SEER MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	
6475	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6476	HVAC	Central AC 20 SEER MO	HVAC	SF	MO	63%	36%	37%	38%	39%	39%	39%	39%	39%	39%	39%	40%	44%	48%	51%	53%	54%	55%	56%	57%	58%	
6477	HVAC	Central AC 20 SEER MO	Single Family Income Eligible	SF	MO	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	
6478	HVAC	Central AC 20 SEER MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	
6479	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	62%	51%	54%	57%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	
6480	HVAC	Central AC 20 SEER MO	HVAC	MF	MO	81%	66%	70%	73%	76%	77%	79%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
6481	HVAC	Central AC 20 SEER MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	
6482	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6483	HVAC	Central AC 21 SEER MO	HVAC	SF	MO	63%	35%	36%	37%	37%	38%	38%	38%	38%	38%	38%	38%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6484	HVAC	Central AC 21 SEER MO	Single Family Income Eligible	SF	MO	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	
6485	HVAC	Central AC 21 SEER MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	
6486	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6487	HVAC	Central AC 21 SEER MO	HVAC	MF	MO	81%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	
6488	HVAC	Central AC 21 SEER MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	
6489	HVAC	ECM Fan	HVAC	SF	Retrofit	66%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	
6490	HVAC	ECM Fan	HVAC	SF	Retrofit	63%	36%	28%	21%	15%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
6491	HVAC	ECM Fan	Single Family Income Eligible	SF	Retrofit	63%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
6492	HVAC	ECM Fan	HVAC	MF	Retrofit	62%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%	
6493	HVAC	ECM Fan	Multifamily Market Rate	MF	Retrofit	62%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
6494	HVAC	ECM Fan	HVAC	MF	Retrofit	81%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
6495	HVAC	ECM Fan	Multifamily Income Eligible	MF	Retrofit	81%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
6496	HVAC	Ductless AC ER	HVAC	SF	ER1	66%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	59%	60%	61%	62%	
6497	HVAC	Ductless AC ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6498	HVAC	Ductless AC ER	HVAC	SF	ER3	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6499	HVAC	Ductless AC ER	HVAC	SF	ER1	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6500	HVAC	Ductless AC ER	HVAC	SF	ER2	63%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6501	HVAC	Ductless AC ER	HVAC	SF	ER3	63%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	
6502	HVAC	Ductless AC ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6503	HVAC	Ductless AC ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6504	HVAC	Ductless AC ER	HVAC	MF	ER3	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6505	HVAC	Ductless AC ER	HVAC	MF	ER1	81%	32%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	
6506	HVAC	Ductless AC ER	HVAC	MF	ER2	81%	32%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	
6507	HVAC	Ductless AC ER	HVAC	MF	ER3	81%	43%	45%	46%	47%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	
6508	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER1	81%	31%	32%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	
6509	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER2	81%	31%	32%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	
6510	HVAC	Ductless AC ER	Multifamily Income Eligible	MF	ER3	81%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	
6511	HVAC	Ductless AC ROB	HVAC	SF	MO	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%		
6512	HVAC	Ductless AC ROB	HVAC	SF	MO	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%		
6513	HVAC	Ductless AC ROB	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%	
6514	HVAC	Ductless AC ROB	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%		
6515	HVAC	Ductless AC ROB	HVAC	MF	MO	81%	43%	45%	46%	47%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	
6516	HVAC	Ductless AC ROB	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	
6517	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	
6518	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	
6519	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%	
6520	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	
6521	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER2	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	
6522	HVAC	Ductless ASHP - Resistance ER	HVAC	SF	ER3	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%	
6523																											

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6538	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6539	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6540	HVAC	Ductless ASHP - Resistance MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6541	HVAC	Ductless ASHP - Resistance MO	Multifamily Market Rate	MF	MO	62%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%
6542	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6543	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6544	HVAC	Ductless ASHP - Resistance MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	62%	61%	62%	62%	62%	62%	62%	62%
6545	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6546	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6547	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	66%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6548	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER1	63%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6549	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER2	63%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
6550	HVAC	Ductless ASHP - ASHP ER	HVAC	SF	ER3	63%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6551	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER1	63%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6552	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER2	63%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6553	HVAC	Ductless ASHP - ASHP ER	Single Family Income Eligible	SF	ER3	63%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6554	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6555	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6556	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6557	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER1	81%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	41%	48%	55%	61%	66%	70%	73%	76%	77%	79%
6558	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER2	81%	32%	33%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%
6559	HVAC	Ductless ASHP - ASHP ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6560	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	66%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6561	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	MO	63%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6562	HVAC	Ductless ASHP - ASHP MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	66%
6563	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6564	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	MO	81%	61%	66%	70%	73%	76%	77%	79%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
6565	HVAC	Ductless ASHP - ASHP MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6566	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6567	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6568	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	66%
6569	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6570	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6571	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6572	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6573	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6574	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6575	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6576	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6577	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6578	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	66%	19%	23%	29%	34%	40%	45%	50%	54%	58%	61%	63%	64%	66%	66%	66%	66%	66%	66%	66%	
6579	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	
6580	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	NC	66%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	66%	66%	
6581	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	
6582	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	
6583	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	NC	62%	17%	22%	27%	32%	37%	42%	47%	50%	54%	56%	58%	60%	61%	62%	62%	62%	62%	62%	62%	
6584	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	66%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6585	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6586	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	66%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6587	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	63%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	42%	46%	50%	53%	55%	57%	59%	60%	61%	
6588	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	63%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	
6589	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	63%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	35%	40%	44%	48%	51%	53%	55%	57%	58%	
6590	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6591	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	62%	47%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6592	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	62%	51%	54%	57%	58%	60%	61%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	62%	
6593	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6594	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6595	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	81%	32%	33%	33%	33%	33%	33%	33%	33%	34%	41%	48%	54%	60%	65%	69%	72%	74%	76%	78%	
6596	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	66%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6597	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	63%	51%	52%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	
6598	HVAC	GSHP 23 EER - ASHP MO	HVAC	S																						

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6614	HVAC	Learning Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	68%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6615	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	65%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6616	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	65%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	1%	0%	0%	0%	0%	0%	0%
6617	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6618	HVAC	Learning Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6619	HVAC	Learning Thermostat - ASHP	New Construction	MF	NC	68%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	
6620	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	NC	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6621	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	66%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6622	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	66%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6623	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6624	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	63%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6625	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	63%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6626	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	63%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6627	HVAC	Learning Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	63%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6628	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	SF	NC	66%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	
6629	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%
6630	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	68%	20%	18%	16%	13%	10%	8%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6631	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	68%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6632	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	68%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6633	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	68%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6634	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	MF	Retrofit	65%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6635	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	Retrofit	65%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6636	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6637	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6638	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	MF	NC	68%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	68%
6639	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	NC	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6640	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	66%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6641	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	66%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6642	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6643	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	63%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6644	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	63%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6645	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	63%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6646	HVAC	Learning Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	63%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6647	HVAC	Learning Thermostat - Gas Heated	New Construction	SF	NC	66%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%	66%	66%	66%	
6648	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	NC	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%
6649	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	68%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6650	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	68%	4%	5%	6%	7%	8%	9%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%	0%	0%
6651	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	68%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6652	HVAC	Learning Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	68%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6653	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6654	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	65%	5%	6%	7%	8%	9%	10%	10%	9%	8%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%
6655	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	65%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6656	HVAC	Learning Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	65%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6657	HVAC	Learning Thermostat - Gas Heated	New Construction	MF	NC	68%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	68%
6658	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	NC	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6659	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	66%	32%	38%	45%	50%	56%	60%	64%	67%	70%	71%	73%	74%	74%	74%	74%	74%	74%	74%	74%	74%
6660	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	63%	19%	24%	30%	36%	42%	47%	52%	56%	60%	63%	65%	67%	68%	69%	69%	69%	69%	69%	69%	69%
6661	HVAC	ENERGY STAR Room AC	Single Family Income Eligible	SF	MO	63%	26%	32%	38%	45%	50%	56%	60%	64%	67%	70%	71%	73%	74%	74%	74%	74%	74%	74%	74%	74%
6662	HVAC	ENERGY STAR Room AC	Efficient Products	SF	NC	66%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
6663	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	68%	45%	50%	56%	60%	64%	67%	70%	71%	73%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%
6664	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	65%	11%	15%	19%	24%	30%	36%	42%	47%	52%	56%	60%	63%	65%	67%	68%	69%	69%	69%	69%	69%
6665	HVAC	ENERGY STAR Room AC	Multifamily Income Eligible	MF	MO	65%	32%	38%	45%	50%	56%	60%	64%	67%	70%	71%	73%	74%	74%	74%	74%	74%	74%	74%	74%	74%
6666	HVAC	ENERGY STAR Room AC	Efficient Products	MF	NC	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6667	HVAC	AC Tune-Up	HVAC	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6668	HVAC	AC Tune-Up	Single Family Income Eligible	SF	Retrofit	63%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6669	HVAC	AC Tune-Up	Multifamily Market Rate	MF	Retrofit	68%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6670	HVAC	AC Tune-Up	Multifamily Income Eligible	MF	Retrofit	65%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6671	HVAC	Dirty Filter Alarm	Energy Efficiency Kits	SF	Retrofit	66%	23%	20%	16%	13%	10%	8%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6672	HVAC	Dirty Filter Alarm	Single Family Income Eligible	SF	Retrofit	66%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6673	HVAC	Dirty Filter Alarm	Multifamily Market Rate	MF	Retrofit	68%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6674	HVAC	Dirty Filter Alarm	Multifamily Income Eligible	MF	Retrofit	65%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6675	HVAC	HP Tune-Up	HVAC	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6676	HVAC	HP Tune-Up	Single Family Income Eligible	SF	Retrofit	63%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6677	HVAC	HP Tune-Up	Multifamily Market Rate	MF	Retrofit	68%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6678	HVAC	HP Tune-Up	Multifamily Income Eligible	MF	Retrofit	65%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6679	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6680	HVAC	Setback Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	63%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6681	HVAC	Setback Thermostat - ASHP	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
6682	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	68%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6683	HVAC	Setback Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	65%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6684	HVAC	Setback Thermostat - ASHP	Multifamily Market Rate	MF	NC	68%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
6685	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6686	HVAC	Setback Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	63%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6687	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
6688	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	68%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6689	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	65%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6690	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	NC	68%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
6691	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6692	HVAC	Setback Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	63%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6693	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
6694	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	68%	32%	25%	19%	14%	10%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6695	HVAC	Setback Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	65%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6696	HVAC	Setback Thermostat - Gas Heated	Multifamily Market Rate	MF	NC	68%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
6697	HVAC	Room AC recycling - Primary	Appliance Recycling	SF	Recycle	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%
6698	HVAC	Room AC recycling - Primary	Appliance Recycling	MF	Recycle	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6699	HVAC	Room AC recycling - Secondary	Appliance Recycling	SF	Recycle	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%
6700	HVAC	Room AC recycling - Secondary	Appliance Recycling	MF	Recycle	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
6701	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6702	HVAC	Energy Recovery Ventilator	HVAC	SF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6703	HVAC	Energy Recovery Ventilator	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6704	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6705	HVAC	Energy Recovery Ventilator	HVAC	MF	Retrofit	67%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6706	HVAC	Energy Recovery Ventilator	HVAC	MF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6707	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6708	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6709	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6710	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6711	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6712	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6713	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6714	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6715	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6716	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6717	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6718	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6719	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6720	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6721	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6722	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6723	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	67%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6724	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	NC	67%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%	67%	67%	67%	67%	67%	67%
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	66%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	34%	40%	45%	50%	54%	57%	60%	62%	64%	65%	66%
6727	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	Retrofit	68%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6728	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	NC	68%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	56%	59%	62%	64%	66%	67%	68%
7001	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7002	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	24%	24%	24%	
7003	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7004	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	24%	24%	
7005	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7006	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	24%	24%	24%	
7007	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7008	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	24%	24%	

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
7009	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7021	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7022	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7023	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7024	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7025	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7026	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7027	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7028	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7029	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7030	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7031	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7032	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7033	Lighting	LED - 4W Candelabra (CFL baseline)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7034	Lighting	LED - 4W Candelabra (CFL baseline)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7035	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7036	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Income Eligible	MF	MO	57%	9%	9%	9%	10%	12%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%	24%	24%	24%	24%	24%
7037	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7038	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7039	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7040	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7041	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	PAYS	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7042	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7043	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7044	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL) IEDI	Multifamily Income Eligible	MF	MO	57%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	14%	16%	18%	20%	21%	22%	23%	23%	24%	24%
7045	Lighting	LED Nightlights	Energy Efficiency Kits	SF	MO	65%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7046	Lighting	LED Nightlights	Single Family Income Eligible	SF	MO	62%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	18%	20%	21%	22%	23%	23%	24%	24%	24%
7047	Lighting	LED Nightlights	Multifamily Market Rate	MF	MO	66%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7048	Lighting	LED Nightlights	Multifamily Income Eligible	MF	MO	57%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	12%	14%	16%	18%	20%	21%	22%	23%	23%	24%
7049	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
7050	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
7051	Lighting	Occupancy Sensor	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	58%	63%	65%	66%	67%	67%	67%
7052	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
7053	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
7054	Lighting	Occupancy Sensor	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
7055	Lighting	Linear LED	Efficient Products	SF	MO	67%	14%	18%	22%	27%	32%	38%	43%	47%	51%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%
7056	Lighting	Linear LED	Single Family Income Eligible	SF	MO	67%	18%	22%	27%	32%	38%	43%	47%	51%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
7057	Lighting	Linear LED	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
7058	Lighting	Linear LED	Efficient Products	MF	MO	67%	14%	18%	22%	27%	32%	38%	43%	47%	51%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%
7059	Lighting	Linear LED	Multifamily Income Eligible	MF	MO	57%	39%	42%	44%	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
7060	Lighting	Linear LED	Efficient Products	MF	NC	67%	3%																			



Appendix B: Residential MAP Annual Penetration %

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
8002	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	65%	45%	49%	52%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
8003	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	65%	45%	49%	52%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
8004	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER1	62%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8005	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	62%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8006	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	62%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8007	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	66%	46%	49%	53%	55%	57%	58%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
8008	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	66%	46%	49%	53%	55%	57%	58%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
8009	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	66%	41%	46%	49%	53%	55%	57%	58%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
8010	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER1	62%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	39%	43%	46%	49%	51%	53%	55%	56%	56%
8011	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER2	62%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	39%	43%	46%	49%	51%	53%	55%	56%	56%
8012	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER3	62%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	43%	46%	49%	51%	53%	55%	56%	56%
8013	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	62%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8014	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	62%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8015	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	62%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8016	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	65%	45%	49%	52%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
8017	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	62%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8018	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	NC	65%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	59%	61%	62%	63%	64%	64%
8019	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	66%	41%	46%	49%	53%	55%	57%	58%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
8020	Pool	Variable Speed Pool Pump - MO	Multifamily Market Rate	MF	MO	62%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	43%	46%	49%	51%	53%	55%	56%	56%
8021	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	62%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
8022	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	NC	66%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	45%	49%	53%	57%	59%	61%	63%	64%	65%
8023	Pool	Pool Heater (COP >= 5.5-9)	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8024	Pool	Pool Heater (COP >= 5.5-9)	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8025	Pool	Pool Heater (COP >= 5.5-9)	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
8026	Pool	Pool Heater (COP >= 5.5-9)	Efficient Products	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8027	Pool	Pool Heater (COP >= 5.5-9)	Multifamily Income Eligible	MF	MO	62%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	61%	62%	62%	62%	62%	62%	62%
8028	Pool	Pool Heater (COP >= 5.5-9)	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
8029	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8030	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8031	Pool	Pool Heater (COP >= 6.0)	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
8032	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
8033	Pool	Pool Heater (COP >= 6.0)	Multifamily Income Eligible	MF	MO	62%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	61%	62%	62%	62%	62%	62%	62%
8034	Pool	Pool Heater (COP >= 6.0)	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
9001	Water Heating	Kitchen Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	60%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9002	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9003	Water Heating	Kitchen Faucet Aerator	Single Family Income Eligible	SF	Retrofit	53%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9004	Water Heating	Kitchen Faucet Aerator	PAYS	SF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9005	Water Heating	Kitchen Faucet Aerator	Multifamily Market Rate	MF	Retrofit	60%	43%	33%	24%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9006	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9007	Water Heating	Kitchen Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	53%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9008	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9009	Water Heating	Bathroom Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	60%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9010	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9011	Water Heating	Bathroom Faucet Aerator	Single Family Income Eligible	SF	Retrofit	53%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9012	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9013	Water Heating	Bathroom Faucet Aerator	Multifamily Market Rate	MF	Retrofit	60%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9014	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9015	Water Heating	Bathroom Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	53%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9016	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9017	Water Heating	Low Flow Showerhead	Energy Efficiency Kits	SF	Retrofit	60%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	53%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	60%	100%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9023	Water Heating	Low Flow Showerhead	Multifamily Income Eligible	MF	Retrofit	53%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	53%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	67%	6%	7%	9%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	53%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	67%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	53%	43%	33%	24%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	53%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%</			

Appendix B: Residential MAP Annual Penetration %

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	57%	3%	4%	5%	7%	10%	13%	16%	20%	25%	30%	35%	39%	44%	47%	50%	52%	54%	56%	57%	58%
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	57%	13%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	53%	3%	4%	5%	7%	9%	11%	15%	18%	23%	27%	32%	36%	40%	43%	46%	48%	49%	51%	52%	52%
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	63%	65%	66%	67%
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	62%	64%	65%	67%	67%
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	66%	67%
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9052	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9053	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
9054	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9055	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9056	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	NC	67%	3%	5%	6%	8%	11%	15%	19%	24%	29%	35%	40%	46%	51%	55%	58%	61%	63%	65%	66%	67%
9057	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9058	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9059	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9060	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	67%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
10001	New Construction	Zero Energy Ready Home	New Construction	SF	NC	65%	11%	14%	18%	22%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	37%	40%	44%	47%	49%	50%	52%	53%	53%	53%	53%	53%	53%
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	65%	11%	14%	18%	22%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	37%	40%	44%	47%	49%	50%	52%	53%	53%	53%	53%	53%	53%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1001	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	MO	62%	25%	30%	35%	40%	44%	47%	50%	53%	55%	56%	57%	58%	58%	58%	58%	58%	58%	58%	58%	58%
1002	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	MO	49%	24%	28%	32%	35%	38%	40%	42%	44%	45%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
1003	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER1	49%	24%	28%	31%	35%	38%	40%	42%	43%	45%	45%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
1004	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER2	29%	22%	25%	27%	30%	32%	33%	34%	35%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
1005	Appliances	ENERGY STAR Refrigerator	Single Family Income Eligible	SF	ER3	49%	24%	28%	32%	35%	38%	40%	42%	44%	45%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%
1006	Appliances	ENERGY STAR Refrigerator	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1007	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	62%	25%	30%	35%	40%	44%	47%	50%	53%	55%	56%	57%	58%	58%	58%	58%	58%	58%	58%	58%	58%
1008	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER1	39%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
1009	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER2	40%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
1010	Appliances	ENERGY STAR Refrigerator	Multifamily Market Rate	MF	ER3	53%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%
1011	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	MO	62%	25%	30%	35%	40%	44%	47%	50%	53%	55%	56%	57%	58%	58%	58%	58%	58%	58%	58%	58%	58%
1012	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER1	20%	25%	27%	30%	32%	33%	34%	35%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
1013	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER2	21%	25%	27%	30%	32%	33%	34%	35%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
1014	Appliances	ENERGY STAR Refrigerator	Multifamily Income Eligible	MF	ER3	39%	25%	27%	30%	32%	33%	34%	35%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%
1015	Appliances	ENERGY STAR Refrigerator	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1016	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	16%	1%	1%	1%	2%	2%	3%	4%	5%	6%	7%	9%	10%	11%	12%	12%	13%	13%	14%	14%	14%
1017	Appliances	Dehumidifier Recycling	Appliance Recycling	SF	Recycle	21%	1%	1%	2%	2%	3%	4%	5%	7%	8%	10%	11%	13%	14%	16%	17%	17%	18%	18%	19%	19%
1018	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	32%	2%	2%	3%	4%	5%	7%	9%	11%	13%	16%	18%	21%	23%	25%	27%	28%	29%	29%	30%	30%
1019	Appliances	Dehumidifier Recycling	Appliance Recycling	MF	Recycle	13%	1%	1%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	9%	9%	10%	10%	10%	10%	11%	11%
1020	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	18%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	10%	11%	12%	13%	14%	15%	15%	16%	16%	16%
1021	Appliances	Freezer Recycling	Appliance Recycling	SF	Recycle	23%	1%	1%	2%	3%	4%	5%	6%	8%	9%	11%	13%	15%	16%	17%	19%	19%	20%	21%	21%	21%
1022	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	34%	2%	2%	3%	4%	5%	7%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	31%	32%	32%
1023	Appliances	Freezer Recycling	Appliance Recycling	MF	Recycle	15%	1%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	11%	12%	12%	13%	13%	13%
1024	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	18%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	10%	11%	12%	13%	14%	15%	15%	16%	16%	16%
1025	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	SF	Recycle	23%	1%	1%	2%	3%	4%	5%	6%	8%	9%	11%	13%	15%	16%	17%	19%	19%	20%	21%	21%	21%
1026	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	34%	2%	2%	3%	4%	5%	7%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	31%	32%	32%
1027	Appliances	Refrigerator recycling (pre-1990)	Appliance Recycling	MF	Recycle	15%	1%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	11%	12%	12%	13%	13%	13%
1028	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	18%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	10%	11%	12%	13%	14%	15%	15%	16%	16%	16%
1029	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	SF	Recycle	23%	1%	1%	2%	3%	4%	5%	6%	8%	9%	11%	13%	15%	16%	17%	19%	19%	20%	21%	21%	21%
1030	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	34%	2%	2%	3%	4%	5%	7%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	31%	32%	32%
1031	Appliances	Refrigerator recycling (post-1990)	Appliance Recycling	MF	Recycle	15%	1%	1%	1%	2%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	11%	12%	12%	13%	13%	13%
1032	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	39%	14%	17%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
1033	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	MO	38%	17%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
1034	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	SF	NC	39%	2%	3%	3%	5%	6%	8%	10%	13%	16%	19%	23%	26%	28%	31%	32%	34%	35%	36%	37%	37%
1035	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	49%	26%	29%	33%	35%	38%	39%	41%	42%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%
1036	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	MO	30%	9%	12%	14%	17%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%
1037	Appliances	ENERGY STAR Air Purifier/Cleaner	Efficient Products	MF	NC	49%	2%	3%	4%	6%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	44%	45%	46%	47%	48%
1038	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	62%	8%	10%	13%	17%	21%	26%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%
1039	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	MO	62%	8%	10%	13%	17%	21%	26%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%
1040	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1041	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	62%	8%	10%	13%	17%	21%	26%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%
1042	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	MO	62%	8%	10%	13%	17%	21%	26%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%
1043	Appliances	ENERGY STAR Clothes Dryer	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1044	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	62%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1045	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	MO	62%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1046	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1047	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	62%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1048	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	MO	62%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1049	Appliances	ENERGY STAR Clothes Washer (CEE Tier 2)	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1050	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	60%	14%	18%	23%	29%	35%	42%	49%	56%	62%	67%	71%	74%	77%	79%	81%	82%	82%	82%	82%	82%
1051	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	MO	49%	18%	23%	29%	35%	42%	49%	56%	62%	67%	71%	74%	77%	79%	81%	82%	82%	82%	82%	82%	82%
1052	Appliances	ENERGY STAR Dehumidifier	Efficient Products	SF	NC	60%	3%	4%	5%	7%	10%	13%	16%	21%	25%	30%	35%	40%	44%	48%	51%	54%	55%	57%	58%	59%
1053	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	58%	29%	35%	42%	49%	56%	62%	67%	71%	74%	77%	79%	81%	82%	82%	82%	82%	82%	82%	82%	82%
1054	Appliances	ENERGY STAR Dehumidifier	Efficient Products	MF	MO	39%	10%	14%	18%	23%	29%	35%	42%	49%	56%	62%	67%	71%	74%	77%	79%	81%	82%	82%	82%	82%
1055	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	NC	58%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	34%	39%	43%	47%	50%	52%	54%	55%	56%	57%
1056	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	MO	62%	36%	42%	48%	53%	58%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1057	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	MO	62%	36%	42%	48%	53%	58%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1058	Appliances	ENERGY STAR Dishwasher	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
1059	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	MO	62%	36%	42%	48%	53%	58%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1060	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	MO	62%	36%	42%	48%	53%	58%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
1061	Appliances	ENERGY STAR Dishwasher	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37									

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2002	Behavior	Home Energy Report	No program	SF	MO	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	26%	30%	34%	38%	41%	43%	45%	47%	48%	49%	50%
2003	Behavior	Home Energy Report	No program	SF	NC	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	25%	29%	33%	37%	40%	42%	44%	46%	47%	48%	49%
2004	Behavior	Home Energy Report	No program	MF	MO	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	26%	30%	34%	38%	41%	43%	45%	47%	48%	49%	50%
2005	Behavior	Home Energy Report	No program	MF	MO	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	26%	30%	34%	38%	41%	43%	45%	47%	48%	49%	50%
2006	Behavior	Home Energy Report	No program	MF	NC	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	25%	29%	33%	37%	40%	42%	44%	46%	47%	48%	49%
2007	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
2008	Behavior	Home Energy Management System	Efficient Products	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
2009	Behavior	Home Energy Management System	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
2010	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
2011	Behavior	Home Energy Management System	Efficient Products	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
2012	Behavior	Home Energy Management System	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
2013	Behavior	AMI Data Portal	No program	SF	MO	64%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	63%	64%
2014	Behavior	AMI Data Portal	No program	SF	MO	64%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	63%	64%
2015	Behavior	AMI Data Portal	No program	SF	NC	64%	3%	4%	6%	8%	11%	14%	18%	22%	28%	33%	38%	43%	48%	52%	55%	58%	60%	62%	63%	64%
2016	Behavior	AMI Data Portal	No program	MF	MO	64%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	63%	64%
2017	Behavior	AMI Data Portal	No program	MF	MO	64%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	63%	64%
2018	Behavior	AMI Data Portal	No program	MF	NC	64%	3%	4%	6%	8%	11%	14%	18%	22%	28%	33%	38%	43%	48%	52%	55%	58%	60%	62%	63%	64%
3001	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3002	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3003	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3004	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3005	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3006	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3007	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3008	Building Shell	Air Sealing - Tier 2 (fair condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3009	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3010	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Single Family Income Eligible	SF	Retrofit	29%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3011	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3012	Building Shell	Air Sealing - Tier 3 (poor condition) - Elec/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3013	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3014	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3015	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3016	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3017	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3018	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3019	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3020	Building Shell	Air Sealing - Tier 2 (fair condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3021	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3022	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Single Family Income Eligible	SF	Retrofit	29%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3023	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3024	Building Shell	Air Sealing - Tier 3 (poor condition) - HP/HP	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3025	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3026	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3027	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3028	Building Shell	Air Sealing - Tier 1 (not good/excellent condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3029	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3030	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	29%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3031	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3032	Building Shell	Air Sealing - Tier 2 (fair condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3033	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3034	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Single Family Income Eligible	SF	Retrofit	29%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3035	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3036	Building Shell	Air Sealing - Tier 3 (poor condition) - Gas/AC	Multifamily Income Eligible	MF	Retrofit	34%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3037	Building Shell	Ceiling Insulation R11-R49 electric furnace base	PAYS	SF	Retrofit	21%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%





Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3139	Building Shell	Floor Insulation (R13 base) - heat pump base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3140	Building Shell	Floor Insulation (R13 base) - heat pump base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3141	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3142	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	52%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3143	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3144	Building Shell	Floor Insulation (R13 base) - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3145	Building Shell	Window Insulation	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3146	Building Shell	Window Insulation	Single Family Income Eligible	SF	Retrofit	52%	5%	6%	7%	8%	9%	10%	10%	9%	8%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%
3147	Building Shell	Window Insulation	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3148	Building Shell	Window Insulation	Multifamily Income Eligible	MF	Retrofit	81%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3149	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3150	Building Shell	Basement Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3151	Building Shell	Basement Wall Insulation - electric furnace base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3152	Building Shell	Basement Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3153	Building Shell	Basement Wall Insulation - heat pump base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3154	Building Shell	Basement Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3155	Building Shell	Basement Wall Insulation - heat pump base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3156	Building Shell	Basement Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3157	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3158	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3159	Building Shell	Basement Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3160	Building Shell	Basement Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3161	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3162	Building Shell	Foundation Sidewall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3163	Building Shell	Foundation Sidewall Insulation - electric furnace base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3164	Building Shell	Foundation Sidewall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3165	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3166	Building Shell	Foundation Sidewall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3167	Building Shell	Foundation Sidewall Insulation - heat pump base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3168	Building Shell	Foundation Sidewall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3169	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3170	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3171	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3172	Building Shell	Foundation Sidewall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3173	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3174	Building Shell	Insulated Cellular Shades - electric furnace base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3175	Building Shell	Insulated Cellular Shades - electric furnace base	PAYS	MF	Retrofit	42%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3176	Building Shell	Insulated Cellular Shades - electric furnace base	Multifamily Income Eligible	MF	Retrofit	42%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3177	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3178	Building Shell	Insulated Cellular Shades - heat pump base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3179	Building Shell	Insulated Cellular Shades - heat pump base	PAYS	MF	Retrofit	42%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3180	Building Shell	Insulated Cellular Shades - heat pump base	Multifamily Income Eligible	MF	Retrofit	42%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3181	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3182	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3183	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	PAYS	MF	Retrofit	42%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3184	Building Shell	Insulated Cellular Shades - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	42%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3185	Building Shell	Storm Windows - electric furnace base	PAYS	SF	Retrofit	48%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3186	Building Shell	Storm Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	18%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3187	Building Shell	Storm Windows - electric furnace base	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3188	Building Shell	Storm Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	59%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3189	Building Shell	Storm Windows - heat pump base	PAYS	SF	Retrofit	48%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3190	Building Shell	Storm Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	18%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3191	Building Shell	Storm Windows - heat pump base	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3192	Building Shell	Storm Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	59%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3193	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	SF	Retrofit	48%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3194	Building Shell	Storm Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	18%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
3195	Building Shell	Storm Windows - gas heat and electric cool base	PAYS	MF	Retrofit	54%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3196	Building Shell	Storm Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	59%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3197	Building Shell	Wall Insulation - electric furnace base	PAYS	SF	Retrofit	66%	2%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3198	Building Shell	Wall Insulation - electric furnace base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	4%	5%	6%	7%	8%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3199	Building Shell	Wall Insulation - electric furnace base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3200	Building Shell	Wall Insulation - electric furnace base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3201	Building Shell	Wall Insulation - heat pump base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3202	Building Shell	Wall Insulation - heat pump base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	0%
3203	Building Shell	Wall Insulation - heat pump base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3204	Building Shell	Wall Insulation - heat pump base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3205	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3206	Building Shell	Wall Insulation - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3207	Building Shell	Wall Insulation - gas heat and electric cool base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3208	Building Shell	Wall Insulation - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3209	Building Shell	Thin Triple Windows - electric furnace base	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3210	Building Shell	Thin Triple Windows - electric furnace base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3211	Building Shell	Thin Triple Windows - electric furnace base	PAYS	MF	Retrofit	38%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3212	Building Shell	Thin Triple Windows - electric furnace base	Multifamily Income Eligible	MF	Retrofit	40%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3213	Building Shell	Thin Triple Windows - heat pump base	PAYS	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3214	Building Shell	Thin Triple Windows - heat pump base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3215	Building Shell	Thin Triple Windows - heat pump base	PAYS	MF	Retrofit	38%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3216	Building Shell	Thin Triple Windows - heat pump base	Multifamily Income Eligible	MF	Retrofit	40%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3217	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	SF	Retrofit	37%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3218	Building Shell	Thin Triple Windows - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	37%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3219	Building Shell	Thin Triple Windows - gas heat and electric cool base	PAYS	MF	Retrofit	38%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3220	Building Shell	Thin Triple Windows - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	40%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3221	Building Shell	Advanced Walls - electric furnace base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3222	Building Shell	Advanced Walls - electric furnace base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	0%
3223	Building Shell	Advanced Walls - electric furnace base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3224	Building Shell	Advanced Walls - electric furnace base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3225	Building Shell	Advanced Walls - heat pump base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3226	Building Shell	Advanced Walls - heat pump base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	0%
3227	Building Shell	Advanced Walls - heat pump base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3228	Building Shell	Advanced Walls - heat pump base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3229	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	SF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3230	Building Shell	Advanced Walls - gas heat and electric cool base	Single Family Income Eligible	SF	Retrofit	66%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
3231	Building Shell	Advanced Walls - gas heat and electric cool base	PAYS	MF	Retrofit	66%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3232	Building Shell	Advanced Walls - gas heat and electric cool base	Multifamily Income Eligible	MF	Retrofit	66%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
3233	Building Shell	Cool Roof	PAYS	SF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3234	Building Shell	Cool Roof	Single Family Income Eligible	SF	Retrofit	64%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%	0%	0%	0%
3235	Building Shell	Cool Roof	PAYS	MF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
3236	Building Shell	Cool Roof	Multifamily Income Eligible	MF	Retrofit	64%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	3%	2%	0%	0%	0%	0%	0%	0%	0%
3237	Building Shell	Shade Trees	No program	SF	Retrofit	64%	4%	4%	4%	5%	7%	8%	9%	9%	9%	9%	8%	7%	5%	4%	3%	3%	2%	1%	0%	0%
3238	Building Shell	Shade Trees	No program	SF	Retrofit	64%	4%	4%	4%	5%	7%	8%	9%	9%	9%	9%	8%	7%	5%	4%	3%	3%	2%	1%	0%	0%
3239	Building Shell	Shade Trees	No program	MF	Retrofit	64%	4%	4%	4%	5%	7%	8%	9%	9%	9%	9%	8%	7%	5%	4%	3%	3%	2%	1%	0%	0%
3240	Building Shell	Shade Trees	No program	MF	Retrofit	64%	4%	4%	4%	5%	7%	8%	9%	9%	9%	9%	8%	7%	5%	4%	3%	3%	2%	1%	0%	0%
4001	Custom	MFMR Custom	Multifamily Market Rate	MF	Retrofit	59%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4002	Custom	MFU Custom	Multifamily Income Eligible	MF	Retrofit	81%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
5001	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	60%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
5002	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	Retrofit	49%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5003	Electronics	Advanced Tier 2 Power Strips	Single Family Income Eligible	SF	Retrofit	49%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5004	Electronics	Advanced Tier 2 Power Strips	Efficient Products	SF	NC	60%	3%	4%	5%	7%	10%	13%	16%	21%	25%	30%	35%	40%	44%	48%	51%	54%	55%	57%	58%	59%
5005	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	58%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5006	Electronics	Advanced Tier 2 Power Strips	Multifamily Market Rate	MF	Retrofit	58%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5007	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	Retrofit	39%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5008	Electronics	Advanced Tier 2 Power Strips	Multifamily Income Eligible	MF	Retrofit	39%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5009	Electronics	Advanced Tier 2 Power Strips	Efficient Products	MF	NC	58%	3%	4%	5%	7%	9%	12%	16%	20%	25%	30%	34%	39%	43%	47%	50%	52%	54%	55%	56%	57%
5010	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	42%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5011	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	42%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
5012	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	42%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
5013	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	Retrofit	41%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5014	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	SF	Retrofit	41%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5015	Electronics	Advanced Tier 1 Power Strips	PAYS	SF	Retrofit	41%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5016	Electronics	Advanced Tier 1 Power Strips	Single Family Income Eligible	SF	Retrofit	34%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%	
5017	Electronics	Advanced Tier 1 Power Strips	Efficient Products	SF	NC	42%	2%	3%	4%	5%	7%	9%	12%	15%	18%	21%	25%	28%	31%	34%	36%	38%	39%	40%	41%	41%	
5018	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	52%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5019	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	52%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5020	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	52%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5021	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	Retrofit	33%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5022	Electronics	Advanced Tier 1 Power Strips	Energy Efficiency Kits	MF	Retrofit	33%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5023	Electronics	Advanced Tier 1 Power Strips	PAYS	MF	Retrofit	33%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5024	Electronics	Advanced Tier 1 Power Strips	Multifamily Income Eligible	MF	Retrofit	26%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
5025	Electronics	Advanced Tier 1 Power Strips	Efficient Products	MF	NC	52%	3%	3%	5%	6%	8%	11%	14%	18%	22%	26%	31%	35%	39%	42%	44%	46%	48%	49%	50%	51%	
5026	Electronics	ENERGY STAR TV	No program	SF	MO	50%	3%	5%	6%	9%	12%	15%	19%	25%	30%	36%	42%	48%	53%	57%	61%	63%	66%	67%	69%	70%	
5027	Electronics	ENERGY STAR TV	No program	SF	MO	50%	3%	5%	6%	9%	12%	15%	19%	25%	30%	36%	42%	48%	53%	57%	61%	63%	66%	67%	69%	70%	
5028	Electronics	ENERGY STAR TV	No program	SF	NC	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	25%	29%	33%	37%	40%	42%	44%	46%	47%	48%	49%	
5029	Electronics	ENERGY STAR TV	No program	MF	MO	50%	3%	5%	6%	9%	12%	15%	19%	25%	30%	36%	42%	48%	53%	57%	61%	63%	66%	67%	69%	70%	
5030	Electronics	ENERGY STAR TV	No program	MF	MO	50%	3%	5%	6%	9%	12%	15%	19%	25%	30%	36%	42%	48%	53%	57%	61%	63%	66%	67%	69%	70%	
5031	Electronics	ENERGY STAR TV	No program	MF	NC	50%	2%	3%	5%	6%	8%	11%	14%	17%	21%	25%	29%	33%	37%	40%	42%	44%	46%	47%	48%	49%	
5032	Electronics	Smart Plug	No program	SF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5033	Electronics	Smart Plug	No program	SF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5034	Electronics	Smart Plug	No program	SF	NC	64%	3%	4%	6%	8%	11%	14%	18%	22%	28%	33%	38%	43%	48%	52%	55%	58%	60%	62%	63%	64%	
5035	Electronics	Smart Plug	No program	MF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5036	Electronics	Smart Plug	No program	MF	Retrofit	64%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
5037	Electronics	Smart Plug	No program	MF	NC	64%	3%	4%	6%	8%	11%	14%	18%	22%	28%	33%	38%	43%	48%	52%	55%	58%	60%	62%	63%	64%	
6001	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	60%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6002	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6003	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	64%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6004	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER1	47%	37%	38%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
6005	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER2	28%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6006	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	SF	ER3	50%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
6007	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	51%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6008	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6009	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	56%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6010	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER1	65%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
6011	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6012	HVAC	ASHP 15 SEER - hp baseline ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6013	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	57%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6014	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6015	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	64%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6016	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER1	41%	33%	33%	34%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%	35%
6017	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER2	28%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6018	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	SF	ER3	50%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
6019	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	45%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6020	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6021	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	56%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6022	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER1	56%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6023	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6024	HVAC	ASHP 16 SEER - hp baseline ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6025	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	59%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6026	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6027	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	64%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6028	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER1	45%	35%	36%	37%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%
6029	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER2	28%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6030	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	SF	ER3	50%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
6031	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	54%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6032	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6033	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER3	56%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6034	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER1	72%	56%	60%	62%	65%	66%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
6035	HVAC	ASHP 17 SEER - hp baseline ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6036	HVAC	ASHP 17 SEER - hp baseline ER	H																								



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6130	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6131	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6132	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6133	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	56%	4%	5%	7%	9%	12%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%
6134	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	28%	2%	3%	3%	5%	6%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%
6135	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	50%	3%	5%	6%	8%	11%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%
6136	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	58%	16%	20%	25%	30%	35%	39%	44%	47%	50%	53%	54%	56%	57%	58%	58%	58%	58%	58%	58%	58%
6137	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6138	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6139	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6140	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	34%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%
6141	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	56%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6142	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	78%	22%	28%	34%	40%	47%	53%	59%	64%	68%	71%	74%	76%	77%	78%	78%	78%	78%	78%	78%	78%
6143	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	40%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%	40%
6144	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6145	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6146	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	40%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%
6147	HVAC	ASHP 15 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6148	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	61%	62%	62%	62%	62%	62%	62%	62%
6149	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6150	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6151	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	49%	2%	3%	4%	6%	8%	11%	14%	17%	21%	25%	29%	33%	37%	40%	42%	44%	46%	47%	48%	49%
6152	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	47%	2%	3%	4%	6%	8%	10%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%
6153	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	64%	3%	4%	6%	8%	11%	14%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%
6154	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	51%	14%	18%	22%	26%	31%	35%	39%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%
6155	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6156	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6157	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER1	32%	2%	2%	3%	4%	5%	7%	9%	11%	14%	17%	19%	22%	24%	26%	28%	29%	30%	31%	32%	32%
6158	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER2	28%	1%	2%	3%	3%	5%	6%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%
6159	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	SF	ER3	50%	2%	3%	5%	6%	8%	11%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%
6160	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER1	56%	4%	5%	7%	9%	12%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%
6161	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER2	28%	2%	3%	3%	5%	6%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%
6162	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Single Family Income Eligible	SF	ER3	50%	3%	5%	6%	8%	11%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%
6163	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6164	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	34%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%
6165	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	56%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6166	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	54%	15%	19%	23%	28%	32%	37%	41%	44%	47%	49%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%
6167	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6168	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6169	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	36%	2%	2%	3%	4%	6%	8%	10%	13%	16%	19%	22%	25%	27%	30%	31%	33%	34%	35%	36%	36%
6170	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	34%	2%	2%	3%	4%	6%	7%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%
6171	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	56%	3%	4%	5%	7%	9%	12%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%
6172	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	71%	20%	25%	31%	37%	43%	48%	53%	58%	61%	64%	67%	68%	70%	71%	71%	71%	71%	71%	71%	71%
6173	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	40%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%	40%
6174	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6175	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER1	40%	2%	3%	4%	5%	7%	9%	11%	14%	17%	21%	24%	28%	31%	33%	35%	37%	38%	39%	40%	40%
6176	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER2	40%	2%	3%	4%	5%	7%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6177	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	PAYS	MF	ER3	81%	4%	6%	8%	10%	13%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%
6178	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6179	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	40%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%
6180	HVAC	ASHP 16 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6181	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6182	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6183	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6184	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	52%	15%	18%	23%	27%	31%	36%	39%	43%	45%	48%	49%	50%	51%	52%	52%	52%	52%	52%	52%	52%
6185	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6186	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6187	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6188	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	34%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%
6189	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	56%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6190	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6191	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6192	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6193	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6194	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	40%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%	40%
6195	HVAC	ASHP 17 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6196	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	63%	18%	22%	27%	33%	38%	43%	48%	52%	55%	57%	59%	61%	62%	63%	63%	63%	63%	63%	63%	63%
6197	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6198	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6199	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	52%	15%	18%	23%	27%	31%	36%	39%	43%	45%	48%	49%	50%	51%	52%	52%	52%	52%	52%	52%	52%
6200	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6201	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6202	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER1	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6203	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER2	34%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%
6204	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	Multifamily Market Rate	MF	ER3	49%	30%	34%	37%	40%	43%	45%	46%	48%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%
6205	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6206	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6207	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6208	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6209	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	40%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%	40%
6210	HVAC	ASHP 18 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6211	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	61%	17%	21%	26%	31%	37%	42%	46%	50%	53%	55%	57%	59%	60%	61%	61%	61%	61%	61%	61%	61%
6212	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6213	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6214	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	48%	13%	17%	21%	25%	29%	33%	36%	39%	42%	44%	45%	46%	47%	48%	48%	48%	48%	48%	48%	48%
6215	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6216	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6217	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6218	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6219	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6220	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6221	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	40%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%
6222	HVAC	ASHP 19 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	58%	13%	16%	20%	25%	30%	35%	39%	44%	47%	50%	53%	54%	56%	57%	58%	58%	58%	58%	58%	58%
6223	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	64%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	63%	64%	64%	64%	64%	64%	64%	64%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6224	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6225	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6226	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	55%	15%	19%	24%	28%	33%	37%	41%	45%	48%	50%	52%	53%	54%	55%	55%	55%	55%	55%	55%	55%
6227	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6228	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6229	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6230	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6231	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6232	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6233	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	40%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%
6234	HVAC	ASHP 20 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	52%	11%	14%	18%	22%	27%	31%	35%	39%	42%	45%	47%	49%	50%	51%	52%	52%	52%	52%	52%	52%
6235	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	62%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%	62%	62%	62%	62%	62%	62%
6236	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	47%	13%	17%	20%	24%	28%	32%	35%	38%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%
6237	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	64%	18%	23%	28%	33%	39%	44%	48%	52%	56%	58%	60%	62%	63%	64%	64%	64%	64%	64%	64%	64%
6238	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER1	51%	14%	18%	22%	27%	31%	35%	39%	42%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%
6239	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	27%	28%	28%	28%	28%	28%	28%	28%
6240	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	SF	ER3	50%	14%	18%	22%	26%	30%	34%	38%	41%	43%	46%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%
6241	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER1	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6242	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6243	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	HVAC	MF	ER3	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6244	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER1	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6245	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER2	40%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%
6246	HVAC	ASHP 21 SEER - elec resis furnace baseline ER	Multifamily Income Eligible	MF	ER3	47%	10%	13%	16%	20%	24%	28%	32%	35%	38%	41%	42%	44%	45%	46%	47%	47%	47%	47%	47%	47%
6247	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6248	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6249	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6250	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	MO	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6251	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6252	HVAC	ASHP 15 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6253	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6254	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6255	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6256	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6257	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6258	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6259	HVAC	ASHP 16 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6260	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6261	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6262	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6263	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	59%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%
6264	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	81%	18%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%
6265	HVAC	ASHP 17 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6266	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6267	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6268	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6269	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Market Rate	MF	MO	52%	31%	35%	39%	42%	45%	47%	49%	50%	51%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%
6270	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	67%	15%	19%	24%	29%	35%	41%	46%	51%	55%	59%	61%	64%	65%	67%	67%	67%	67%	67%	67%	67%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6271	HVAC	ASHP 18 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6272	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6273	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6274	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6275	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6276	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6277	HVAC	ASHP 19 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6278	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6279	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6280	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6281	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	MO	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6282	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	Multifamily Income Eligible	MF	MO	52%	11%	14%	18%	22%	27%	31%	35%	39%	42%	45%	47%	49%	50%	51%	52%	52%	52%	52%	52%	52%
6283	HVAC	ASHP 20 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6284	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	65%	18%	23%	28%	34%	39%	45%	49%	53%	57%	59%	62%	63%	64%	65%	65%	65%	65%	65%	65%	65%
6285	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	MO	56%	16%	20%	24%	29%	34%	39%	43%	46%	49%	51%	53%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6286	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%
6287	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	59%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%
6288	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	MO	81%	23%	29%	35%	42%	49%	55%	61%	66%	71%	74%	77%	79%	80%	81%	81%	81%	81%	81%	81%	81%
6289	HVAC	ASHP 21 SEER - elec resis furnace baseline MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%
6290	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	58%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6291	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	MO	58%	49%	50%	52%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
6292	HVAC	Dual Fuel HP - 19 SEER	HVAC	SF	NC	58%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	56%	57%	57%	57%	57%	57%	57%	57%	57%
6293	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6294	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	MO	37%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
6295	HVAC	Dual Fuel HP - 19 SEER	HVAC	MF	NC	34%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%
6296	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	58%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6297	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	MO	58%	49%	50%	52%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%	53%
6298	HVAC	Dual Fuel HP - 20 SEER	HVAC	SF	NC	58%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	56%	57%	57%	57%	57%	57%	57%	57%	57%
6299	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6300	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	MO	38%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6301	HVAC	Dual Fuel HP - 20 SEER	HVAC	MF	NC	34%	9%	12%	14%	17%	20%	23%	25%	27%	29%	30%	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%
6302	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	58%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6303	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	MO	58%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%
6304	HVAC	Dual Fuel HP - 21 SEER	HVAC	SF	NC	58%	16%	20%	25%	30%	35%	39%	43%	47%	50%	52%	54%	56%	57%	57%	57%	57%	57%	57%	57%	57%
6305	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	34%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6306	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	MO	37%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6307	HVAC	Dual Fuel HP - 21 SEER	HVAC	MF	NC	34%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	31%	32%	32%	32%	32%	32%	32%	32%	32%
6308	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	54%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6309	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6310	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	64%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6311	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	38%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6312	HVAC	Central AC 15 SEER ER	HVAC	SF	ER2	28%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
6313	HVAC	Central AC 15 SEER ER	HVAC	SF	ER3	50%	41%	43%	44%	45%	46%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%	47%
6314	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER1	56%	28%	33%	37%	41%	44%	47%	49%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%
6315	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER2	28%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6316	HVAC	Central AC 15 SEER ER	Single Family Income Eligible	SF	ER3	50%	23%	27%	30%	33%	36%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%
6317	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	43%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6318	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6319	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	56%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6320	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER1	43%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6321	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER2	34%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6322	HVAC	Central AC 15 SEER ER	Multifamily Market Rate	MF	ER3	56%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6323	HVAC	Central AC 15 SEER ER	HVAC	MF	ER1	52%	42%	44%	46%	47%	48%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%
6324	HVAC	Central AC 15 SEER ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6325	HVAC	Central AC 15 SEER ER	HVAC	MF	ER3	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6326	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER1	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6327	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER2	40%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6328	HVAC	Central AC 15 SEER ER	Multifamily Income Eligible	MF	ER3	81%	54%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
6329	HVAC	Central AC 15 SEER ER	HVAC	SF	ER1	52%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6330	HVAC	Central AC 16 SEER ER	HVAC																							



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6412	HVAC	Central AC 20 SEER ER	HVAC	SF	ER3	40%	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6413	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER1	56%	27%	31%	35%	39%	42%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6414	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER2	28%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6415	HVAC	Central AC 20 SEER ER	Single Family Income Eligible	SF	ER3	40%	20%	23%	25%	27%	29%	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6416	HVAC	Central AC 20 SEER ER	HVAC	MF	SF1	45%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6417	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	34%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6418	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	47%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6419	HVAC	Central AC 20 SEER ER	HVAC	MF	ER1	55%	43%	45%	47%	48%	49%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	
6420	HVAC	Central AC 20 SEER ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6421	HVAC	Central AC 20 SEER ER	HVAC	MF	ER3	64%	52%	54%	56%	57%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	59%	
6422	HVAC	Central AC 21 SEER ER	HVAC	SF	ER1	54%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6423	HVAC	Central AC 21 SEER ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6424	HVAC	Central AC 21 SEER ER	HVAC	SF	ER3	57%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6425	HVAC	Central AC 21 SEER ER	HVAC	SF	ER1	38%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6426	HVAC	Central AC 21 SEER ER	HVAC	SF	ER2	28%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6427	HVAC	Central AC 21 SEER ER	HVAC	SF	ER3	39%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6428	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER1	56%	27%	31%	35%	39%	42%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6429	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER2	28%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6430	HVAC	Central AC 21 SEER ER	Single Family Income Eligible	SF	ER3	39%	20%	23%	25%	27%	29%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6431	HVAC	Central AC 21 SEER ER	HVAC	MF	ER1	45%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6432	HVAC	Central AC 21 SEER ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6433	HVAC	Central AC 21 SEER ER	HVAC	MF	ER3	46%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6434	HVAC	Central AC 21 SEER ER	HVAC	MF	ER1	54%	43%	45%	46%	47%	48%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	49%	
6435	HVAC	Central AC 21 SEER ER	HVAC	MF	ER2	40%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6436	HVAC	Central AC 21 SEER ER	HVAC	MF	ER3	61%	50%	52%	54%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6437	HVAC	Central AC 15 SEER MO	HVAC	SF	MO	65%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	
6438	HVAC	Central AC 15 SEER MO	HVAC	SF	MO	56%	47%	49%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	54%	
6439	HVAC	Central AC 15 SEER MO	Single Family Income Eligible	SF	MO	56%	27%	31%	35%	39%	42%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6440	HVAC	Central AC 15 SEER MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%	
6441	HVAC	Central AC 15 SEER MO	Multifamily Market Rate	MF	MO	59%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%		
6442	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	59%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6443	HVAC	Central AC 15 SEER MO	HVAC	MF	MO	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	
6444	HVAC	Central AC 15 SEER MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	
6445	HVAC	Central AC 16 SEER MO	HVAC	SF	MO	65%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	56%	
6446	HVAC	Central AC 16 SEER MO	HVAC	SF	MO	56%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6447	HVAC	Central AC 16 SEER MO	Single Family Income Eligible	SF	MO	56%	27%	31%	35%	39%	42%	45%	47%	48%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6448	HVAC	Central AC 16 SEER MO	HVAC	SF	NC	65%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	65%	65%	65%	65%	65%	65%	65%	
6449	HVAC	Central AC 16 SEER MO	Multifamily Market Rate	MF	MO	59%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%		
6450	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	59%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6451	HVAC	Central AC 16 SEER MO	HVAC	MF	MO	81%	60%	65%	69%	72%	74%	76%	78%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	
6452	HVAC	Central AC 16 SEER MO	HVAC	MF	NC	59%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%	59%	59%	59%	59%	59%	59%	
6453	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	61%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6454	HVAC	Central AC 17 SEER MO	HVAC	SF	MO	49%	39%	40%	41%	42%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	
6455	HVAC	Central AC 17 SEER MO	Single Family Income Eligible	SF	MO	49%	24%	28%	31%	35%	38%	40%	42%	43%	44%	45%	46%	46%	46%	46%	46%	46%	46%	46%	46%	46%	
6456	HVAC	Central AC 17 SEER MO	HVAC	SF	NC	61%	17%	21%	26%	31%	36%	41%	46%	49%	53%	55%	57%	58%	60%	60%	60%	60%	60%	60%	60%	60%	
6457	HVAC	Central AC 17 SEER MO	Multifamily Market Rate	MF	MO	52%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	
6458	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	52%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6459	HVAC	Central AC 17 SEER MO	HVAC	MF	MO	69%	53%	56%	59%	61%	63%	64%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	
6460	HVAC	Central AC 17 SEER MO	HVAC	MF	NC	52%	14%	18%	22%	27%	31%	35%	39%	42%	45%	47%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	
6461	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	62%	49%	50%	51%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	52%	
6462	HVAC	Central AC 18 SEER MO	HVAC	SF	MO	50%	41%	42%	43%	44%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	
6463	HVAC	Central AC 18 SEER MO	Single Family Income Eligible	SF	MO	50%	27%	30%	34%	36%	39%	41%	42%	43%	44%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	45%	
6464	HVAC	Central AC 18 SEER MO	HVAC	SF	NC	62%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%	61%	61%	61%	61%	61%	
6465	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	54%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6466	HVAC	Central AC 18 SEER MO	HVAC	MF	MO	51%	55%	59%	62%	64%	65%	67%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	
6467	HVAC	Central AC 18 SEER MO	HVAC	MF	NC	54%	15%	19%	23%	27%	32%	36%	40%	43%	46%	48%	50%	51%	52%	53%	53%	53%	53%	53%	53%	53%	
6468	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	53%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	
6469	HVAC	Central AC 19 SEER MO	HVAC	SF	MO	36%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	
6470	HVAC	Central AC 19 SEER MO	Single Family Income Eligible	SF	MO	36%	25%	28%	30%	32%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	
6471	HVAC	Central AC 19 SEER MO	HVAC	SF	NC	53%	14%	18%	22%	27%	31%	35%	39%	42%	45%	47%	49%	50%	51%	52%							





Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6568	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	54%	15%	19%	23%	28%	33%	37%	41%	44%	47%	49%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%
6569	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER1	31%	9%	11%	14%	16%	19%	21%	24%	26%	27%	28%	29%	30%	31%	31%	31%	31%	31%	31%	31%	31%
6570	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER2	28%	8%	10%	12%	14%	17%	19%	21%	23%	24%	25%	26%	27%	28%	28%	28%	28%	28%	28%	28%	28%
6571	HVAC	GSHP 23 EER - Resistance ER	HVAC	SF	ER3	35%	10%	12%	15%	18%	21%	24%	26%	29%	30%	32%	33%	34%	34%	35%	35%	35%	35%	35%	35%	35%
6572	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	35%	10%	12%	15%	18%	21%	24%	27%	29%	31%	32%	33%	34%	35%	35%	35%	35%	35%	35%	35%	35%
6573	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	34%	9%	12%	15%	18%	20%	23%	26%	28%	29%	31%	32%	33%	33%	34%	34%	34%	34%	34%	34%	34%
6574	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	42%	12%	15%	18%	22%	25%	29%	32%	34%	36%	38%	40%	41%	42%	42%	42%	42%	42%	42%	42%	42%
6575	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER1	39%	11%	14%	17%	20%	24%	27%	30%	32%	34%	36%	37%	38%	39%	39%	39%	39%	39%	39%	39%	39%
6576	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER2	40%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	38%	39%	40%	40%	40%	40%	40%	40%	40%
6577	HVAC	GSHP 23 EER - Resistance ER	HVAC	MF	ER3	54%	15%	19%	23%	28%	32%	37%	41%	44%	47%	49%	51%	52%	53%	54%	54%	54%	54%	54%	54%	54%
6578	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	49%	14%	17%	21%	25%	30%	34%	37%	40%	43%	45%	46%	47%	48%	49%	49%	49%	49%	49%	49%	
6579	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	MO	33%	9%	11%	14%	17%	20%	22%	25%	27%	28%	30%	31%	32%	32%	33%	33%	33%	33%	33%	33%	33%
6580	HVAC	GSHP 23 EER - Resistance MO	HVAC	SF	NC	49%	13%	17%	21%	25%	29%	33%	36%	39%	42%	44%	45%	46%	47%	48%	48%	48%	48%	48%	48%	48%
6581	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	37%	10%	13%	16%	19%	22%	25%	28%	30%	32%	34%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%
6582	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	MO	42%	12%	15%	18%	22%	25%	29%	32%	34%	36%	38%	39%	40%	41%	42%	42%	42%	42%	42%	42%	42%
6583	HVAC	GSHP 23 EER - Resistance MO	HVAC	MF	NC	37%	10%	13%	15%	18%	22%	24%	27%	29%	31%	33%	34%	35%	35%	36%	36%	36%	36%	36%	36%	36%
6584	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	37%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6585	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	47%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6586	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	41%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6587	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER1	24%	35%	36%	36%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
6588	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER2	28%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6589	HVAC	GSHP 23 EER - ASHP ER	HVAC	SF	ER3	24%	30%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6590	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	24%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6591	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	34%	42%	44%	46%	48%	49%	50%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
6592	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	28%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6593	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER1	27%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6594	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER2	40%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6595	HVAC	GSHP 23 EER - ASHP ER	HVAC	MF	ER3	32%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6596	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	42%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6597	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	MO	27%	31%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6598	HVAC	GSHP 23 EER - ASHP MO	HVAC	SF	NC	42%	11%	14%	18%	21%	25%	28%	31%	34%	36%	37%	39%	40%	41%	41%	41%	41%	41%	41%	41%	41%
6599	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	29%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%	57%
6600	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	MO	32%	32%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
6601	HVAC	GSHP 23 EER - ASHP MO	HVAC	MF	NC	29%	8%	10%	12%	15%	17%	19%	21%	23%	24%	26%	26%	27%	28%	28%	28%	28%	28%	28%	28%	28%
6602	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	60%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6603	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	59%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6604	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6605	HVAC	Learning Thermostat - ASHP	HVAC	SF	Retrofit	43%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6606	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	Retrofit	42%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6607	HVAC	Learning Thermostat - ASHP	PAYS	SF	Retrofit	43%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6608	HVAC	Learning Thermostat - ASHP	Single Family Income Eligible	SF	Retrofit	50%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6609	HVAC	Learning Thermostat - ASHP	New Construction	SF	NC	49%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	43%	45%	46%	47%	48%	48%	48%	48%	48%
6610	HVAC	Learning Thermostat - ASHP	Efficient Products	SF	NC	59%	3%	4%	5%	7%	10%	13%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%
6611	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	63%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6612	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	63%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6613	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	63%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6614	HVAC	Learning Thermostat - ASHP	Multifamily Market Rate	MF	Retrofit	63%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6615	HVAC	Learning Thermostat - ASHP	HVAC	MF	Retrofit	47%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6616	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	Retrofit	46%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6617	HVAC	Learning Thermostat - ASHP	PAYS	MF	Retrofit	47%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6618	HVAC	Learning Thermostat - ASHP	Multifamily Income Eligible	MF	Retrofit	55%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6619	HVAC	Learning Thermostat - ASHP	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	36%	40%	44%	46%	48%	50%	51%	52%	53%	53%	53%	53%	53%
6620	HVAC	Learning Thermostat - ASHP	Efficient Products	MF	NC	63%	3%	4%	6%	8%	10%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%
6621	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	60%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6622	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	59%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6623	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6624	HVAC	Learning Thermostat - Electric Furnace Heating	HVAC	SF	Retrofit	43%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6625	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	42%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6626	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	SF	Retrofit	43%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6627	HVAC	Learning Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	50%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6628	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	SF	NC	49%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	43%	45%	46%	47%	48%	48%	48%	48%	48%
6629	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	59%	3%	4%	5%	7%	10%	13%	16%	21%	25%	30%										

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6636	HVAC	Learning Thermostat - Electric Furnace Heating	PAYS	MF	Retrofit	47%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6637	HVAC	Learning Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	55%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6638	HVAC	Learning Thermostat - Electric Furnace Heating	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	36%	40%	44%	46%	48%	50%	51%	52%	53%	53%	53%	53%	53%
6639	HVAC	Learning Thermostat - Electric Furnace Heating	Efficient Products	MF	NC	63%	3%	4%	6%	8%	10%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%
6640	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	60%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6641	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	59%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6642	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	60%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	8%	9%	8%	7%	6%	5%	4%	3%	2%	1%
6643	HVAC	Learning Thermostat - Gas Heated	HVAC	SF	Retrofit	43%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6644	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	Retrofit	42%	12%	13%	13%	12%	11%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6645	HVAC	Learning Thermostat - Gas Heated	PAYS	SF	Retrofit	43%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
6646	HVAC	Learning Thermostat - Gas Heated	Single Family Income Eligible	SF	Retrofit	50%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
6647	HVAC	Learning Thermostat - Gas Heated	New Construction	SF	NC	49%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	43%	45%	46%	47%	48%	48%	48%	48%	48%
6648	HVAC	Learning Thermostat - Gas Heated	Efficient Products	SF	NC	59%	3%	4%	5%	7%	10%	13%	16%	21%	25%	30%	35%	40%	44%	48%	51%	53%	55%	57%	58%	59%
6649	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	63%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6650	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	63%	4%	5%	6%	7%	8%	9%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%	0%	0%
6651	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	63%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6652	HVAC	Learning Thermostat - Gas Heated	Multifamily Market Rate	MF	Retrofit	63%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6653	HVAC	Learning Thermostat - Gas Heated	HVAC	MF	Retrofit	47%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6654	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	Retrofit	46%	5%	6%	7%	8%	9%	10%	9%	8%	7%	6%	5%	4%	3%	2%	2%	2%	2%	2%	2%	2%
6655	HVAC	Learning Thermostat - Gas Heated	PAYS	MF	Retrofit	47%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%
6656	HVAC	Learning Thermostat - Gas Heated	Multifamily Income Eligible	MF	Retrofit	42%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6657	HVAC	Learning Thermostat - Gas Heated	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	36%	40%	44%	46%	48%	50%	51%	52%	53%	53%	53%	53%	53%
6658	HVAC	Learning Thermostat - Gas Heated	Efficient Products	MF	NC	63%	3%	4%	6%	8%	10%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	62%	62%
6659	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	64%	30%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%
6660	HVAC	ENERGY STAR Room AC	Efficient Products	SF	MO	50%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	64%	64%	64%	64%	64%	64%	64%
6661	HVAC	ENERGY STAR Room AC	Single Family Income Eligible	SF	MO	50%	25%	30%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%
6662	HVAC	ENERGY STAR Room AC	Efficient Products	SF	NC	64%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
6663	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	65%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
6664	HVAC	ENERGY STAR Room AC	Efficient Products	MF	MO	55%	11%	14%	18%	23%	28%	33%	39%	44%	49%	53%	56%	59%	61%	62%	64%	64%	64%	64%	64%	64%
6665	HVAC	ENERGY STAR Room AC	Multifamily Income Eligible	MF	MO	55%	30%	36%	42%	48%	53%	57%	61%	64%	66%	68%	69%	70%	70%	70%	70%	70%	70%	70%	70%	70%
6666	HVAC	ENERGY STAR Room AC	Efficient Products	MF	NC	65%	3%	4%	6%	8%	11%	14%	18%	22%	28%	33%	38%	44%	48%	52%	56%	58%	60%	62%	63%	64%
6667	HVAC	AC Tune-Up	HVAC	SF	Retrofit	57%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6668	HVAC	AC Tune-Up	Single Family Income Eligible	SF	Retrofit	50%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%
6669	HVAC	AC Tune-Up	Multifamily Market Rate	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6670	HVAC	AC Tune-Up	Multifamily Income Eligible	MF	Retrofit	55%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6671	HVAC	Dirty Filter Alarm	Energy Efficiency Kits	SF	Retrofit	64%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6672	HVAC	Dirty Filter Alarm	Single Family Income Eligible	SF	Retrofit	50%	32%	25%	19%	14%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6673	HVAC	Dirty Filter Alarm	Multifamily Market Rate	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6674	HVAC	Dirty Filter Alarm	Multifamily Income Eligible	MF	Retrofit	55%	23%	20%	16%	13%	10%	8%	6%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6675	HVAC	HP Tune-Up	HVAC	SF	Retrofit	57%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6676	HVAC	HP Tune-Up	Single Family Income Eligible	SF	Retrofit	50%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%
6677	HVAC	HP Tune-Up	Multifamily Market Rate	MF	Retrofit	65%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6678	HVAC	HP Tune-Up	Multifamily Income Eligible	MF	Retrofit	55%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6679	HVAC	Setback Thermostat - ASHP Heating	Efficient Products	SF	Retrofit	62%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
6680	HVAC	Setback Thermostat - ASHP Heating	Single Family Income Eligible	SF	Retrofit	50%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%
6681	HVAC	Setback Thermostat - ASHP Heating	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
6682	HVAC	Setback Thermostat - ASHP Heating	Multifamily Market Rate	MF	Retrofit	42%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6683	HVAC	Setback Thermostat - ASHP Heating	Multifamily Income Eligible	MF	Retrofit	55%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6684	HVAC	Setback Thermostat - ASHP Heating	Multifamily Market Rate	MF	NC	42%	25%	28%	31%	33%	36%	37%	39%	40%	40%	41%	41%	41%	41%	41%	41%	41%	41%	41%	41%	41%
6685	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	Retrofit	62%	8%	9%	10%	11%	11%	10%	9%	8%	7%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%
6686	HVAC	Setback Thermostat - Electric Furnace Heating	Single Family Income Eligible	SF	Retrofit	50%	3%	4%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	0%
6687	HVAC	Setback Thermostat - Electric Furnace Heating	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%
6688	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	Retrofit	45%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6689	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Income Eligible	MF	Retrofit	55%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%
6690	HVAC	Setback Thermostat - Electric Furnace Heating	Multifamily Market Rate	MF	NC	45%	26%	30%	33%	36%	38%	40%	41%	42%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%
6691	HVAC	Setback Thermostat - Gas Heated	Efficient Products	SF	Retrofit	62%	8%	9%																		

Appendix B: Residential Program RAP Annual Penetration %

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
6707	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6708	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6709	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	SF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6710	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6711	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6712	HVAC	Smart Vents/Sensors - elec furnace / central AC	HVAC	MF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6713	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6714	HVAC	Smart Vents/Sensors - HP	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6715	HVAC	Smart Vents/Sensors - HP	HVAC	SF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6716	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6717	HVAC	Smart Vents/Sensors - HP	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6718	HVAC	Smart Vents/Sensors - HP	HVAC	MF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6719	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6720	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6721	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	SF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6722	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6723	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	Retrofit	57%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6724	HVAC	Smart Vents/Sensors - gas furnace / central AC	HVAC	MF	NC	57%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	56%	56%
6725	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	Retrofit	62%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6726	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	60%	61%	61%
6727	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	Retrofit	64%	15%	15%	14%	13%	11%	9%	7%	6%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
6728	HVAC	ENERGY STAR Bath Vent Fan	Efficient Products	MF	NC	64%	3%	4%	6%	8%	10%	14%	18%	22%	27%	33%	38%	43%	48%	52%	55%	58%	60%	61%	62%	63%	63%
7001	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	PAYS	SF	MO	52%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7002	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Single Family Income Eligible	SF	MO	31%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7003	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Market Rate	MF	MO	40%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7004	Lighting	LED - 6W (CFL baseline) (310-749 lumens)	Multifamily Income Eligible	MF	MO	23%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7005	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	PAYS	SF	MO	52%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7006	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Single Family Income Eligible	SF	MO	34%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7007	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Market Rate	MF	MO	42%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7008	Lighting	LED - 10W (CFL baseline) (750-1049 lumens)	Multifamily Income Eligible	MF	MO	39%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7009	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	PAYS	SF	MO	33%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7010	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Single Family Income Eligible	SF	MO	44%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7011	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Market Rate	MF	MO	58%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7012	Lighting	LED - 15W (CFL baseline) (1050-1489 lumens)	Multifamily Income Eligible	MF	MO	35%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7013	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	PAYS	SF	MO	30%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7014	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Single Family Income Eligible	SF	MO	37%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7015	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Market Rate	MF	MO	33%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7016	Lighting	LED - 20W (CFL baseline) (1490-2600 lumens)	Multifamily Income Eligible	MF	MO	29%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7017	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	PAYS	SF	MO	36%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7018	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Single Family Income Eligible	SF	MO	29%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7019	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Market Rate	MF	MO	48%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7020	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	Multifamily Income Eligible	MF	MO	21%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7021	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	PAYS	SF	MO	43%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7022	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	32%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7023	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	48%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7024	Lighting	LED - 11W Flood Light BR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	39%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7025	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	PAYS	SF	MO	52%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
7026	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	49%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
7027	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	58%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%
7028	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	39%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
7029	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	PAYS	SF	MO	47%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
7030	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Single Family Income Eligible	SF	MO	43%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
7031	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Market Rate	MF	MO	53%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
7032	Lighting	LED - 18W Flood Light PAR38 Bulb (CFL baseline)	Multifamily Income Eligible	MF	MO	34%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	
7033	Lighting	LED - 4W Candelabra (CFL baseline)	PAYS	SF	MO	34%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	
7034	Lighting	LED - 4W Candelabra (CFL baseline)	Single Family Income Eligible	SF	MO	28%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
7035	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Market Rate	MF	MO	33%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
7036	Lighting	LED - 4W Candelabra (CFL baseline)	Multifamily Income Eligible	MF	MO	14%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	
7037	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	PAYS	SF	MO	52%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	
7038	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Single Family Income Eligible	SF	MO	49%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
7039	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Market Rate	MF	MO	58%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
7040	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	Multifamily Income Eligible	MF	MO	39%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	
7041	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL IED)	PAYS	SF	MO	36%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	
7042	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL IED)	Single Family Income Eligible	SF	MO	49%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
7043	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL IED)	Multifamily Market Rate	MF	MO	58%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
7044	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL IED)	Multifamily Income Eligible	MF	MO	21%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	
7045	Lighting	LED Nightlights	Energy Efficiency Kits	SF	MO	50%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	
7046	Lighting	LED Nightlights	Single Family Income Eligible	SF	MO	26%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%	
7047	Lighting	LED Nightlights	Multifamily Market Rate	MF	MO	56%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	28%	
7048	Lighting	LED Nightlights	Multifamily Income Eligible	MF	MO	18%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	
7049	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	49%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
7050	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	49%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
7051	Lighting	Occupancy Sensor	Efficient Products	SF	NC	49%	2%	3%	4%	6%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	44%	45%	46%	47%	48%	
7052	Lighting	Occupancy Sensor	Efficient Products	SF	Retrofit	49%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
7053	Lighting	Occupancy Sensor	Efficient Products	MF	Retrofit	49%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
7054	Lighting	Occupancy Sensor	Efficient Products	MF	NC	49%	2%	3%	4%	6%	8%	10%	13%	17%	21%	25%	29%	33%	36%	39%	42%	44%	45%	46%	47%	48%	
7055	Lighting	Linear LED	Efficient Products	SF	MO	62%	12%	16%	20%	24%	29%	34%	39%	43%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	
7056	Lighting	Linear LED	Single Family Income Eligible	SF	MO	64%	16%	21%	26%	31%	36%	40%	45%	48%	51%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%	59%	
7057	Lighting	Linear LED	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	
7058	Lighting	Linear LED	Efficient Products	MF	MO	62%	12%	16%	20%	24%	29%	34%	39%	43%	46%	49%	52%	53%	55%	56%	57%	57%	57%	57%	57%	57%	
7059	Lighting	Linear LED	Multifamily Income Eligible	MF	MO	39%	23%	25%	26%	28%	29%	29%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
7060	Lighting	Linear LED	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	
7061	Lighting	Custom Lighting LED	PAYS	SF	Retrofit	52%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
7062	Lighting	Custom Lighting LED	PAYS	MF	Retrofit	58%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	
8001	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER1	36%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8002	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	35%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8003	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	46%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8004	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER1	30%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8005	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER2	29%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8006	Pool	Variable Speed Pool Pump - ER	Efficient Products	SF	ER3	41%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8007	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	41%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8008	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	40%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8009	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	52%	30%	33%	36%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	
8010	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER1	35%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8011	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER2	34%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8012	Pool	Variable Speed Pool Pump - ER	Multifamily Market Rate	MF	ER3	48%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
8013	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER1	35%	17%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8014	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER2	34%	17%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8015	Pool	Variable Speed Pool Pump - ER	Efficient Products	MF	ER3	48%	17%	21%	24%	27%	30%	32%	34%	36%	37%	38%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
8016	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	46%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8017	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	MO	41%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	
8018	Pool	Variable Speed Pool Pump - MO	Efficient Products	SF	NC	46%	2%	3%	4%	6%	7%	10%	13%	16%	19%	23%	27%	31%	34%	37%	39%	41%	42%	44%	44%	45%	
8019	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	52%	30%	33%	36%	38%	40%	42%	43%	43%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	44%	
8020	Pool	Variable Speed Pool Pump - MO	Multifamily Market Rate	MF	MO	48%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
8021	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	MO	48%	17%	21%	24%	27%	30%	32%	34%	36%	37%	38%	39%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
8022	Pool	Variable Speed Pool Pump - MO	Efficient Products	MF	NC	52%	3%	3%	5%	6%	8%	11%	14%	18%	22%	26%	31%	35%	38%	42%	44%	46%	48%	49%	50%	51%	
8023	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	62%	
8024	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	62%	
8025	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	62%	
8026	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	58%	60%	61%	62%	
8027	Pool	Pool Heater (COP 5.5-5.9)	Multifamily Income Eligible	MF	MO	56%	12%	16%	20%	24%	29%	34%	38%	42%	46%	49%	51%	53%	54%	55%	56%	56%	56%	56%	56%	56%	
8028	Pool	Pool Heater (COP 5.5-5.9)	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%												

Appendix B: Residential Program RAP Annual Penetration %

Ameren Missouri 2023 DSM Market Potential Study

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Ultimate Adoption Rate	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
9005	Water Heating	Kitchen Faucet Aerator	Multifamily Market Rate	MF	Retrofit	13%	43%	33%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
9006	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	7%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	8%	7%	6%	5%	4%	3%	2%	2%	1%
9007	Water Heating	Kitchen Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	28%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9008	Water Heating	Kitchen Faucet Aerator	PAYS	MF	Retrofit	13%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9009	Water Heating	Bathroom Faucet Aerator	Energy Efficiency Kits	SF	Retrofit	13%	28%	23%	18%	13%	10%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9010	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	13%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9011	Water Heating	Bathroom Faucet Aerator	Single Family Income Eligible	SF	Retrofit	17%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9012	Water Heating	Bathroom Faucet Aerator	PAYS	SF	Retrofit	10%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9013	Water Heating	Bathroom Faucet Aerator	Multifamily Market Rate	MF	Retrofit	9%	18%	17%	15%	13%	11%	9%	7%	5%	4%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9014	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	7%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9015	Water Heating	Bathroom Faucet Aerator	Multifamily Income Eligible	MF	Retrofit	23%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9016	Water Heating	Bathroom Faucet Aerator	PAYS	MF	Retrofit	13%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9017	Water Heating	Low Flow Showerhead	Energy Efficiency Kits	SF	Retrofit	24%	12%	13%	13%	12%	11%	10%	8%	6%	5%	4%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9018	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	24%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9019	Water Heating	Low Flow Showerhead	Single Family Income Eligible	SF	Retrofit	28%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9020	Water Heating	Low Flow Showerhead	PAYS	SF	Retrofit	26%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9021	Water Heating	Low Flow Showerhead	Multifamily Market Rate	MF	Retrofit	13%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
9022	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	12%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9023	Water Heating	Low Flow Showerhead	Multifamily Income Eligible	MF	Retrofit	28%	20%	18%	16%	13%	10%	8%	6%	5%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9024	Water Heating	Low Flow Showerhead	PAYS	MF	Retrofit	26%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9025	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	SF	Retrofit	43%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9026	Water Heating	Shower Start 1.5 gpm electric water heater	Single Family Income Eligible	SF	Retrofit	8%	26%	21%	17%	13%	10%	8%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9027	Water Heating	Shower Start 1.5 gpm electric water heater	Energy Efficiency Kits	MF	Retrofit	43%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9028	Water Heating	Shower Start 1.5 gpm electric water heater	Multifamily Income Eligible	MF	Retrofit	8%	43%	33%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9029	Water Heating	Pipe Insulation	PAYS	SF	Retrofit	9%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9030	Water Heating	Pipe Insulation	Single Family Income Eligible	SF	Retrofit	20%	10%	11%	12%	12%	11%	10%	9%	7%	6%	4%	3%	3%	2%	0%	0%	0%	0%	0%	0%	0%	0%
9031	Water Heating	Pipe Insulation	PAYS	MF	Retrofit	5%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9032	Water Heating	Pipe Insulation	Multifamily Income Eligible	MF	Retrofit	8%	43%	33%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9033	Water Heating	Water Heater Wrap	Energy Efficiency Kits	SF	Retrofit	62%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9034	Water Heating	Water Heater Wrap	Single Family Income Eligible	SF	Retrofit	26%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9035	Water Heating	Water Heater Wrap	Energy Efficiency Kits	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9036	Water Heating	Water Heater Wrap	Multifamily Income Eligible	MF	Retrofit	20%	6%	7%	9%	10%	10%	10%	10%	9%	7%	6%	5%	4%	3%	2%	2%	0%	0%	0%	0%	0%	0%
9037	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	41%	2%	3%	4%	5%	7%	9%	11%	14%	18%	21%	24%	28%	31%	33%	35%	37%	38%	39%	40%	41%	41%
9038	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	MO	38%	2%	3%	4%	5%	6%	8%	11%	13%	16%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%
9039	Water Heating	Heat Pump Hot Water Heater	Single Family Income Eligible	SF	MO	38%	3%	4%	5%	6%	8%	11%	13%	16%	20%	23%	26%	29%	31%	33%	35%	36%	37%	38%	38%	38%	38%
9040	Water Heating	Heat Pump Hot Water Heater	Efficient Products	SF	NC	41%	2%	3%	4%	5%	7%	9%	11%	14%	17%	21%	24%	27%	30%	33%	35%	36%	38%	39%	39%	40%	40%
9041	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	42%	2%	3%	4%	5%	7%	9%	12%	15%	18%	22%	25%	29%	32%	35%	37%	38%	40%	41%	42%	42%	42%
9042	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	MO	58%	3%	4%	5%	7%	10%	13%	16%	20%	25%	30%	35%	39%	44%	47%	50%	52%	54%	56%	57%	58%	58%
9043	Water Heating	Heat Pump Hot Water Heater	Multifamily Income Eligible	MF	MO	59%	13%	17%	21%	26%	31%	36%	41%	45%	49%	52%	54%	56%	57%	58%	59%	59%	59%	59%	59%	59%	59%
9044	Water Heating	Heat Pump Hot Water Heater	Efficient Products	MF	NC	42%	2%	3%	4%	5%	7%	9%	11%	14%	18%	21%	25%	28%	31%	34%	36%	37%	39%	40%	40%	41%	41%
9045	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	56%	58%	60%	61%	62%	62%
9046	Water Heating	Tankless Water Heater	Efficient Products	SF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	59%	60%	61%	62%	62%
9047	Water Heating	Tankless Water Heater	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	61%
9048	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	62%	3%	4%	6%	8%	10%	14%	17%	22%	27%	32%	38%	43%	47%	51%	54%	57%	59%	60%	61%	62%	62%
9049	Water Heating	Tankless Water Heater	Efficient Products	MF	MO	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	47%	51%	54%	57%	59%	60%	61%	62%	62%
9050	Water Heating	Tankless Water Heater	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	61%
9051	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9052	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9053	Water Heating	Gravity Film Heat Exchanger	Efficient Products	SF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	61%
9054	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9055	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9056	Water Heating	Gravity Film Heat Exchanger	Efficient Products	MF	NC	62%	3%	4%	6%	8%	10%	13%	17%	22%	27%	32%	37%	42%	46%	50%	53%	56%	58%	59%	61%	61%	61%
9057	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9058	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	SF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9059	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
9060	Water Heating	Water Heater Timer/Setback	Energy Efficiency Kits	MF	Retrofit	62%	2%	3%	3%	4%	4%	5%	6%	7%	8%	9%	9%	8%	7%	6%	5%	4%	3%	2%	2%	1%	1%
10001	New Construction	Zero Energy Ready Home	New Construction	SF	NC	59%	10%	13%	16%	20%	25%	30%	35%	40%	44%	48%	51%	53%	55%	56%	57%	58%	58%	58%	58%	58%	58%
10002	New Construction	Zero Energy Ready Home	New Construction	MF	NC	54%	9%	12%	15%	19%	23%	28%	32%	36%	40%	44%	46%	49%	50%	52%	53%	53%	53%	53%	53%	53%	53%
10003	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	SF	NC	53%	9%	11%	15%	18%	23%	27%	31%	36%	39%	43%	45%	47%	49%	50%	51%	52%	52%	52%	52%	52%	52%
10004	New Construction	ENERGY STAR® Townhomes and Duplexes	New Construction	MF	NC	50%	8%	11%	14%	17%	21%	25%	30%	34%	37%	40%	43%	45%	46%	48%	48%	49%	49%	49%	49%	49%	49%

## APPENDIX C: BUSINESS SECTOR ENERGY EFFICIENCY DETAILS

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
1	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Assembly	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
2	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Assembly	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
3	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Assembly	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
4	CompressedAir	AODD Pump Controls	Biz-Custom	Assembly	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
5	CompressedAir	No Loss Condensate Drain	Biz-Standard	Assembly	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
6	CompressedAir	Efficient Air Nozzles	Biz-Standard	Assembly	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
7	CompressedAir	Compressed Air - Custom	Biz-Custom	Assembly	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
8	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Assembly	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
9	Cooking	Commercial Electric Convection Oven	Biz-Custom	Assembly	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
10	Cooking	Commercial Electric Griddle	Biz-Custom	Assembly	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
11	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Assembly	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
12	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Assembly	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
13	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Custom	Assembly	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
14	Cooking	Energy efficient electric fryer	Biz-Custom	Assembly	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
15	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Assembly	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
16	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Assembly	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
17	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Assembly	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
18	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Assembly	ROB	871	15%	128	0.00	15	\$191	100%	44%	1	21%	10%	per ton	1.3	2.9	1.0
19	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Assembly	ROB	871	19%	169	0.00	15	\$254	100%	46%	1	21%	10%	per ton	1.3	2.7	1.0
20	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Assembly	ROB	871	31%	270	0.00	15	\$445	100%	49%	1	21%	10%	per ton	1.1	2.3	1.0
21	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Assembly	ROB	957	8%	74	0.00	15	\$59	100%	53%	2	21%	10%	per ton	2.3	4.4	1.6
22	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Assembly	ROB	957	12%	115	0.00	15	\$97	100%	53%	2	21%	10%	per ton	2.2	4.2	1.5
23	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Assembly	ROB	957	22%	214	0.00	15	\$204	100%	53%	2	21%	10%	per ton	2.0	3.7	1.4
24	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Assembly	Retro	0	7%	74	0.00	3	\$5	100%	50%	3	42%	50%	per ton	6.4	12.8	3.1
25	Cooling	Air Side Economizer	Biz-Custom	Assembly	Retro	871	20%	174	0.00	10	\$84	100%	46%	4	42%	25%	per ton	2.8	6.2	1.7
26	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Assembly	Retro	6,773	56%	3,779	0.00	15	\$2,950	100%	4%	5	42%	20%	per measure	2.4	54.5	1.1
27	Cooling	HVAC Occupancy Controls	Biz-Custom	Assembly	ROB	893	20%	179	0.00	15	\$537	100%	7%	6	42%	20%	per ton	0.6	8.5	0.4
28	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Assembly	ROB	903	13%	113	0.00	15	\$115	100%	52%	7	23%	10%	per ton	1.8	3.6	1.4
29	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Assembly	ROB	903	18%	159	0.00	15	\$514	100%	17%	7	23%	10%	per ton	0.6	3.4	0.4
30	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Standard/SBDI	Assembly	ROB	903	22%	201	0.00	15	\$514	100%	23%	7	23%	10%	per ton	0.7	3.2	0.6
31	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Standard/SBDI	Assembly	ROB	903	33%	301	0.00	15	\$514	100%	40%	7	23%	10%	per ton	1.1	2.7	0.9
32	Cooling	Smart Thermostat	Biz-Standard/SBDI	Assembly	ROB	3,610	14%	502	0.00	10	\$224	100%	79%	8	23%	63%	per measure	3.1	3.9	2.2
33	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Assembly	ROB	1,062	8%	90	0.00	8	\$84	100%	24%	9	0%	20%	per ton	1.2	5.2	0.8
34	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Assembly	ROB	1,165	7%	85	0.00	8	\$84	100%	22%	10	0%	20%	per ton	1.1	5.2	0.7
35	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Assembly	ROB	1,330	10%	127	0.00	8	\$84	100%	33%	11	0%	20%	per ton	1.7	5.2	1.1
36	Cooling	Air Cooled Chiller	Biz-Standard	Assembly	ROB	922	9%	83	0.00	20	\$106	100%	16%	12	31%	10%	per ton	1.8	10.9	1.0
37	Cooling	Water Cooled Chiller	Biz-Standard	Assembly	ROB	463	23%	105	0.00	20	\$106	100%	21%	13	3%	10%	per ton	2.3	10.9	1.2
38	Cooling	Chiller Tune-up	Biz-Custom	Assembly	Retro	0	7%	74	0.00	3	\$8	100%	50%	14	35%	50%	per ton	4.3	8.5	2.2
39	Cooling	Window Film	Biz-Custom	Assembly	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
40	Cooling	Triple Pane Windows	Biz-Custom	Assembly	ROB	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
41	Cooling	Energy Recovery Ventilator	Biz-Custom	Assembly	Retro	899	7%	64	0.01	15	\$1,050	100%	1%	16	100%	2%	per ton	0.9	65.3	0.1
42	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
43	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
44	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
45	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7
46	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
47	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Assembly	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
48	ExteriorLighting	Bi-Level Lighting Fixture -- Garages	Biz-Custom	Assembly	Retro	181	69%	125	0.00	10	\$274	100%	5%	7	14%	35%	per measure	0.1	2.8	0.3
49	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Assembly	ROB	2,288	4%	85	0.00	15	\$135	100%	17%	1	30%	10%	per ton	0.8	4.9	0.7
50	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Assembly	ROB	2,288	8%	191	0.00	15	\$421	100%	11%	1	30%	10%	per ton	0.5	4.9	0.5
51	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Standard	Assembly	ROB	2,288	12%	275	0.00	15	\$446	100%	15%	1	30%	10%	per ton	0.7	4.7	0.7
52	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Standard	Assembly	ROB	2,288	18%	414	0.00	15	\$446	100%	30%	1	30%	10%	per ton	1.2	3.8	1.1
53	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Assembly	ROB	2,288	18%	414	0.00	16	\$224	100%	28%	1	30%	10%	per ton	2.4	8.7	1.9
54	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,553	6%	158	0.00	15	\$100	100%	31%	2	19%	10%	per ton	1.6	5.2	1.7
55	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,553	11%	292	0.00	15	\$171	100%	35%	2	19%	10%	per ton	1.7	4.9	1.8
56	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,644	7%	175	0.00	15	\$100	100%	34%	3	18%	10%	per ton	1.9	5.5	1.8
57	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,644	12%	318	0.00	15	\$182	100%	34%	3	18%	10%	per ton	1.8	5.2	1.8
58	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,774	7%	194	0.00	15	\$100	100%	34%	4	18%	10%	per ton	2.1	6.2	2.0
59	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Assembly	ROB	2,774	13%	350	0.00	15	\$202	100%	31%	4	18%	10%	per ton	1.8	5.9	1.8
60	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Assembly	ROB	1,815	4%	65	0.00	25	\$108	100%	9%	5	6%	20%	per ton	1.0	11.3	0.8
61	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Assembly	ROB	1,815	8%	143	0.00	25	\$108	100%	20%	5	6%	20%	per ton	2.9	14.4	1.8
62	Heating	PTHP - <7,000 Btuh - lodging</																		



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
64	Heating	PTHP - >15,000 Btuh - Lodging	Biz-Custom	Assembly	ROB	3,140	17%	537	0.00	8	\$84	100%	96%	8	0%	20%	per ton	5.8	6.1	4.2
65	HotWater	Res-Sized Heat Pump Water Heater	Biz-Standard	Assembly	ROB	3,027	67%	2,027	0.00	15	\$1,115	100%	45%	1	80%	0%	per measure	1.2	2.7	2.0
66	HotWater	Commercial-Sized HPWH	Biz-Standard	Assembly	ROB	116,224	77%	89,384	0.00	15	\$7,450	100%	88%	2	20%	0%	per measure	7.8	8.9	11.1
67	HotWater	Hot Water Pipe Insulation	Biz-Custom	Assembly	Retro	3,027	2%	61	0.00	20	\$60	100%	11%	3	100%	80%	per measure	0.9	7.9	1.2
68	HotWater	Faucet Aerator	Biz-Custom	Assembly	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
69	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Assembly	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
70	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Assembly	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
71	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Assembly	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	1%	40%	per measure	4.3	24.8	5.2
72	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Assembly	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	1%	40%	per measure	3.3	23.8	4.0
73	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Assembly	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	1%	40%	per measure	4.4	19.2	5.3
74	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Assembly	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	7%	40%	per measure	1.6	11.5	2.0
75	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Assembly	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	7%	40%	per measure	1.5	8.0	1.9
76	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Assembly	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	7%	40%	per measure	1.4	15.1	1.7
77	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Assembly	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	18%	40%	per measure	2.5	12.6	3.2
78	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Assembly	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	18%	40%	per measure	2.6	8.7	3.3
79	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Assembly	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	18%	40%	per measure	2.1	7.9	2.8
80	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Assembly	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	12%	40%	per measure	2.1	5.9	2.8
81	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Assembly	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	9%	40%	per measure	6.2	11.8	7.8
82	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Assembly	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	9%	40%	per measure	8.0	8.0	10.4
83	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Assembly	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	9%	40%	per measure	6.6	6.6	8.8
84	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Assembly	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	9%	40%	per measure	2.3	7.2	3.0
85	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Assembly	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	34%	40%	per measure	3.7	11.3	4.6
86	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Assembly	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	34%	40%	per measure	5.1	6.9	6.7
87	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Assembly	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	34%	40%	per measure	5.0	10.0	6.4
88	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Assembly	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	34%	40%	per measure	0.9	6.4	1.2
89	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Assembly	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	19%	40%	per measure	4.0	10.0	5.0
90	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Assembly	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	19%	40%	per measure	5.5	5.5	7.5
91	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Assembly	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	19%	40%	per measure	3.4	4.8	4.6
92	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Assembly	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	19%	40%	per measure	1.0	4.3	1.5
93	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Assembly	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	27%	per measure	1.4	6.6	1.8
94	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Assembly	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	27%	per measure	1.5	6.6	1.9
95	InteriorLighting	Lighting Power Density	Biz-Custom	Assembly	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
96	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Assembly	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
97	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Assembly	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
98	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Assembly	Retro	385	61%	237	0.00	5	\$233	100%	9%	1	5%	30%	per measure	0.23	1.8	0.4
99	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Assembly	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	8%	10%	per HP	3.2	13.6	4.6
100	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Assembly	Retro	262	83%	217	0.00	10	\$483	100%	4%	3	2%	10%	per measure	0.2	5.1	0.3
101	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Assembly	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
102	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Assembly	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	0%	70%	per measure	1.0	7.8	1.4
103	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Assembly	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	0%	20%	per measure	3.6	5.7	5.0
104	Miscellaneous	Pool Pump Timer	Biz-Custom	Assembly	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	5%	20%	per measure	3.1	5.7	4.2
105	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Assembly	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	0%	20%	per measure	24.6	24.6	31.1
106	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Assembly	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	0%	20%	per measure	4.3	7.8	5.9
107	Miscellaneous	High Efficiency Dryer	Biz-Custom	Assembly	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	2%	20%	per measure	2.5	6.7	3.8
108	Miscellaneous	Miscellaneous Custom	Biz-Custom	Assembly	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	29%	10%	per kWh	0.5	2.2	0.5
109	Motors	Cogged V-Belt	Biz-Custom	Assembly	Retro	17,237	3%	534	0.00	15	\$384	100%	13%	1	50%	10%	per measure	1.0	8.0	1.3
110	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Standard	Assembly	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2
111	Motors	Power Drive Systems	Biz-Custom	Assembly	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	5.5	11.0	7.0
112	Motors	Switch Reluctance Motors	Biz-Custom	Assembly	Retro	33,406	31%	10,222	0.00	15	\$528	100%	50%	2	100%	1%	per measure	10.1	20.2	17.0
113	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Assembly	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
114	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Assembly	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	30%	90%	per measure	n/a	0.0	n/a
115	Office_NonPC	Smart Power Strip - Commercial Use	Biz-Custom	Assembly	Retro	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	15%	per measure	0.7	3.8	1.2
116	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Assembly	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	15%	per measure	0.9	4.3	1.4
117	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Assembly	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
118	Office_PC	Energy Star Server	Biz-Custom	Assembly	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
119	Office_PC	Server Virtualization	Biz-Custom	Assembly	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
120	Office_PC	High Efficiency CRAC unit	Biz-Custom	Assembly	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
121	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Assembly	Retro	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
122	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Assembly	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
123	Office_PC	Energy Star Laptop	Biz-Custom	Assembly	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
124	Office_PC	Energy Star Monitor	Biz-Custom	Assembly	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
125	Refrigeration	Strip Curtains	Biz-Custom	Assembly	Retro	0	0%	0	0.00	4	\$0	100%	0%	1	11%	30%	per sq ft	n/a	0.0	n/a

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
126	Refrigeration	Bare Suction Line	Biz-Custom	Assembly	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	0%	50%	per measure	3.1	6.6	4.9
127	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Assembly	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	7%	25%	per HP	0.3	4.7	0.6
128	Refrigeration	Saturated Suction Controls	Biz-Custom	Assembly	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
129	Refrigeration	Compressor Retrofit	Biz-Custom	Assembly	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	25%	25%	per measure	0.4	12.0	0.3
130	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	7%	80%	per measure	3.1	9.9	4.8
131	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Assembly	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	7%	25%	per measure	1.9	4.7	4.4
132	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Assembly	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	9%	25%	per HP	0.5	4.7	1.2
133	Refrigeration	Refrigeration Economizer	Biz-Custom	Assembly	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	34%	10%	per kWh	1.7	3.4	1.1
134	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Assembly	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	12%	25%	per door	1.0	2.7	1.7
135	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Assembly	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	3%	25%	per door	0.5	6.2	0.7
136	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Assembly	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	2%	80%	per measure	3.1	9.9	4.8
137	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Assembly	Retro	441	34%	149	0.00	10	\$90	100%	15%	13	2%	2%	per measure	0.8	5.1	1.2
138	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Assembly	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	11%	54%	per door	0.3	2.9	0.5
139	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Assembly	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	11%	54%	per door	0.1	1.3	0.3
140	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Assembly	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	4%	25%	per door	4.1	8.1	6.0
141	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Assembly	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	4%	25%	per door	1.2	6.2	1.7
142	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Assembly	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	4%	54%	per door	0.4	5.5	0.6
143	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Assembly	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	4%	54%	per door	0.1	1.3	0.2
144	Refrigeration	Refrigeration - Custom	Biz-Custom	Assembly	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
145	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Assembly	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
146	Refrigeration	Energy Star Ice Machine	Biz-Custom	Assembly	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	7%	44%	per measure	3.2	4.8	5.2
147	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Custom	Assembly	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	2%	30%	per measure	0.2	6.6	0.3
148	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Assembly	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	2%	30%	per measure	0.1	1.7	0.4
149	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Assembly	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	7%	35%	per linear ft	3.9	7.8	4.8
150	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Assembly	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	7%	18%	per measure	1.4	6.2	1.8
151	Ventilation	Demand Controlled Ventilation	Biz-Standard	Assembly	Retro	1,698	20%	340	0.00	15	\$227	100%	63%	1	100%	13%	per measure	1.7	1.7	1.9
152	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Assembly	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	13%	per HP	6.1	10.0	5.4
153	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Assembly	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6
154	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Assembly	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
155	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Assembly	Retro	23,903	82%	19,579	0.00	15	\$4,230	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
156	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Assembly	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	100%	20%	per kWh	2.8	8.3	2.5
157	WholeBldg_HVAC	Cool Roof	Biz-Custom	Assembly	Retro	5	20%	1	0.00	25	\$1	100%	20%	2	73%	33%	per kWh	2.2	11.5	1.9
158	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Assembly	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
159	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Assembly	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
160	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Assembly	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
161	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Assembly	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
162	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Assembly	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
163	Behavioral	COM Competitions	Biz-Custom	Assembly	Retro	53	2%	1	0.00	2	\$0	100%	48%	1	100%	0%	per kWh	1.6	3.2	3.5
164	Behavioral	Business Energy Reports	Biz-Custom	Assembly	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
165	Behavioral	Building Benchmarking	Biz-Custom	Assembly	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
166	Behavioral	Strategic Energy Management	Biz-Custom SEM	Assembly	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
167	Behavioral	BEIMS	Biz-Custom	Assembly	Retro	50	2%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
168	Behavioral	Building Operator Certification	Biz-Custom	Assembly	Retro	10	3%	0	0.00	3	\$0	100%	11%	1	100%	2%	per kWh	0.2	1.7	0.4
169	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Education	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
170	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Education	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
171	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Education	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
172	CompressedAir	AODD Pump Controls	Biz-Custom	Education	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
173	CompressedAir	No Loss Condensate Drain	Biz-Standard	Education	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
174	CompressedAir	Efficient Air Nozzles	Biz-Standard	Education	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
175	CompressedAir	Compressed Air - Custom	Biz-Custom	Education	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
176	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Education	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
177	Cooking	Commercial Electric Convection Oven	Biz-Custom	Education	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
178	Cooking	Commercial Electric Griddle	Biz-Custom	Education	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
179	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Education	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
180	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Education	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
181	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Custom	Education	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
182	Cooking	Energy efficient electric fryer	Biz-Custom	Education	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
183	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Education	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
184	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Education	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
185	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Education	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
186	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Education	ROB	856	15%	126	0.00	15	\$191	100%	44%	1	24%	10%	per ton	1.2	2.8	1.0
187	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Education	ROB	856	19%	166	0.00	15	\$254	100%	46%	1	24%	10%	per ton	1.2	2.7	1.0
188	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Education	ROB	856	31%	265	0.00	15	\$445	100%	49%	1	24%	10%	per ton	1.1	2.3	1.0
189	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Education	ROB	940	8%	72	0.00	15	\$59	100%	53%	2	24%	10%	per ton	2.3	4.3	1.6
190	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Education	ROB	940	12%	113	0.00	15	\$97	100%	53%	2	24%	10%	per ton	2.2	4.1	1.5
191	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Education	ROB	940	22%	210	0.00	15	\$204	100%	53%	2	24%	10%	per ton	1.9	3.6	1.4
192	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Education	Retro	0	7%	72	0.00	3	\$5	100%	50%	3	49%	50%	per ton	6.3	12.6	3.1

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
193	Cooling	Air Side Economizer	Biz-Custom	Education	Retro	856	20%	171	0.00	10	\$84	100%	45%	4	49%	25%	per ton	2.8	6.2	1.7
194	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Education	Retro	6,304	56%	3,518	0.00	15	\$2,950	100%	4%	5	49%	20%	per measure	2.2	50.8	1.1
195	Cooling	HVAC Occupancy Controls	Biz-Custom	Education	ROB	829	20%	166	0.00	15	\$537	100%	7%	6	49%	20%	per ton	0.2	2.2	0.3
196	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Education	ROB	886	13%	111	0.00	15	\$515	100%	52%	7	0%	10%	per ton	1.8	3.5	1.3
197	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Education	ROB	886	18%	156	0.00	15	\$514	100%	17%	7	0%	10%	per ton	0.6	3.3	0.4
198	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Standard/SBDI	Education	ROB	886	22%	197	0.00	15	\$514	100%	23%	7	0%	10%	per ton	0.7	3.1	0.6
199	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Standard/SBDI	Education	ROB	886	33%	295	0.00	15	\$514	100%	40%	7	0%	10%	per ton	1.1	2.7	0.9
200	Cooling	Smart Thermostat	Biz-Standard/SBDI	Education	ROB	3,545	14%	493	0.00	10	\$224	100%	79%	8	0%	63%	per measure	3.0	3.8	2.1
201	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Education	ROB	1,043	8%	88	0.00	8	\$84	100%	23%	9	0%	20%	per ton	1.2	5.2	0.8
202	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Education	ROB	1,144	7%	83	0.00	8	\$84	100%	22%	10	0%	20%	per ton	1.1	5.2	0.7
203	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Education	ROB	1,306	10%	124	0.00	8	\$84	100%	33%	11	0%	20%	per ton	1.7	5.2	1.1
204	Cooling	Air Cooled Chiller	Biz-Standard	Education	ROB	906	9%	82	0.00	20	\$106	100%	16%	12	46%	10%	per ton	1.8	10.7	1.0
205	Cooling	Water Cooled Chiller	Biz-Standard	Education	ROB	455	23%	103	0.00	20	\$106	100%	21%	13	5%	10%	per ton	2.2	10.7	1.2
206	Cooling	Chiller Tune-up	Biz-Custom	Education	Retro	0	7%	72	0.00	3	\$8	100%	50%	14	51%	50%	per ton	4.2	8.4	2.2
207	Cooling	Window Film	Biz-Custom	Education	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
208	Cooling	Triple Pane Windows	Biz-Custom	Education	ROB	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
209	Cooling	Energy Recovery Ventilator	Biz-Custom	Education	Retro	883	12%	103	0.01	15	\$1,050	100%	2%	16	100%	2%	per ton	1.3	59.9	0.1
210	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Education	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
211	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Education	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
212	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Education	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
213	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Education	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7
214	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Education	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
215	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Education	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
216	ExteriorLighting	Bi-Level Lighting Fixture - Garages	Biz-Custom	Education	Retro	262	69%	181	0.00	10	\$274	100%	7%	7	14%	35%	per measure	0.2	2.8	0.5
217	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Education	ROB	1,848	4%	74	0.00	15	\$135	100%	17%	1	0%	10%	per ton	0.8	4.6	0.6
218	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Education	ROB	1,848	9%	162	0.00	15	\$421	100%	11%	1	0%	10%	per ton	0.5	4.6	0.4
219	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Standard	Education	ROB	1,848	13%	233	0.00	15	\$446	100%	15%	1	0%	10%	per ton	0.7	4.4	0.6
220	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Standard	Education	ROB	1,848	19%	359	0.00	15	\$520	100%	26%	1	0%	10%	per ton	0.9	3.6	0.8
221	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Education	ROB	1,848	19%	359	0.00	16	\$224	100%	24%	1	0%	10%	per ton	2.3	9.5	1.7
222	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Education	ROB	2,054	6%	130	0.00	15	\$100	100%	31%	2	29%	10%	per ton	1.5	4.7	1.4
223	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Education	ROB	2,054	12%	239	0.00	15	\$171	100%	35%	2	29%	10%	per ton	1.6	4.5	1.5
224	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Education	ROB	2,129	7%	146	0.00	15	\$100	100%	34%	3	28%	10%	per ton	1.7	5.0	1.6
225	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Education	ROB	2,129	12%	262	0.00	15	\$182	100%	34%	3	28%	10%	per ton	1.6	4.8	1.6
226	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Education	ROB	2,242	7%	162	0.00	15	\$100	100%	34%	4	28%	10%	per ton	2.0	5.7	1.7
227	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Education	ROB	2,242	13%	290	0.00	15	\$202	100%	31%	4	28%	10%	per ton	1.7	5.4	1.5
228	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Education	ROB	1,497	4%	56	0.00	25	\$108	100%	8%	5	6%	20%	per ton	1.0	12.3	0.7
229	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Education	ROB	1,497	9%	133	0.00	25	\$108	100%	18%	5	6%	20%	per ton	2.8	15.0	1.6
230	Heating	PTHP - <7,000 Btuh - lodging	Biz-Custom	Education	ROB	2,067	6%	120	0.00	8	\$84	100%	21%	6	0%	20%	per ton	1.2	5.7	0.9
231	Heating	PTHP - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Education	ROB	2,247	10%	228	0.00	8	\$84	100%	41%	7	0%	20%	per ton	2.8	7.0	1.8
232	Heating	PTHP - >15,000 Btuh - lodging	Biz-Custom	Education	ROB	2,552	19%	493	0.00	8	\$84	100%	88%	8	0%	20%	per ton	5.6	6.4	3.8
233	HotWater	Res- Sized Heat Pump Water Heater	Biz-Standard	Education	ROB	5,042	67%	3,377	0.00	15	\$1,115	100%	45%	1	50%	23%	per measure	2.0	4.4	3.0
234	HotWater	Commercial- Sized HPWH	Biz-Standard	Education	ROB	116,224	77%	89,384	0.00	15	\$7,450	100%	88%	2	50%	23%	per measure	7.8	8.9	11.1
235	HotWater	Hot Water Pipe Insulation	Biz-Custom	Education	Retro	5,042	2%	101	0.00	20	\$60	100%	18%	3	100%	80%	per measure	1.5	7.9	1.9
236	HotWater	Faucet Aerator	Biz-Custom	Education	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
237	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Education	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
238	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Education	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
239	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Education	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	0%	40%	per measure	4.3	24.8	5.2
240	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Education	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	0%	40%	per measure	3.3	23.8	4.0
241	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Education	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	0%	40%	per measure	4.4	19.2	5.3
242	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Education	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	3%	40%	per measure	1.6	11.5	2.0
243	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Education	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	3%	40%	per measure	1.5	8.0	1.9
244	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Education	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	3%	40%	per measure	1.4	15.1	1.7
245	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Education	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	7%	40%	per measure	2.5	12.6	3.2
246	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Education	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	7%	40%	per measure	2.6	8.7	3.3
247	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Education	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	7%	40%	per measure	2.1	7.9	2.8
248	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Education	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	5%	40%	per measure	2.1	5.9	2.8
249	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Education	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	13%	40%	per measure	6.2	11.8	7.8
250	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Education	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	13%	40%	per measure	8.0	8.0	10.4
251	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Education	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	13%	40%	per measure	6.6	6.6	8.8

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
252	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Education	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	13%	40%	per measure	2.3	7.2	3.0
253	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Education	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	46%	40%	per measure	3.7	11.3	4.6
254	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Education	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	46%	40%	per measure	5.1	6.9	6.7
255	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Education	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	46%	40%	per measure	5.0	10.0	6.4
256	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Education	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	46%	40%	per measure	0.9	6.4	1.2
257	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Education	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	25%	40%	per measure	4.0	10.0	5.0
258	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Education	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	25%	40%	per measure	5.5	5.5	7.5
259	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Education	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	25%	40%	per measure	3.4	4.8	4.6
260	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Education	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	25%	40%	per measure	1.0	4.3	1.5
261	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Education	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	27%	per measure	1.4	6.6	1.8
262	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Education	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	27%	per measure	1.5	6.6	1.9
263	InteriorLighting	Lighting Power Density	Biz-Custom	Education	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
264	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Education	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
265	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Education	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
266	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Education	Retro	1,278	12%	153	0.00	5	\$233	100%	6%	1	5%	30%	per measure	0.1	1.8	0.3
267	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Education	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	8%	10%	per HP	3.2	13.6	4.6
268	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Education	Retro	2,093	83%	1,737	0.00	10	\$483	100%	32%	3	2%	10%	per measure	1.7	5.1	2.5
269	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Education	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
270	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Education	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	0%	70%	per measure	1.0	7.8	1.4
271	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Education	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	5%	20%	per measure	3.6	5.7	5.0
272	Miscellaneous	Pool Pump Timer	Biz-Custom	Education	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	2%	20%	per measure	3.1	5.7	4.2
273	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Education	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	0%	20%	per measure	24.6	24.6	31.1
274	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Education	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	0%	20%	per measure	4.3	7.8	5.9
275	Miscellaneous	High Efficiency Dryer	Biz-Custom	Education	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	2%	20%	per measure	2.5	6.7	3.8
276	Miscellaneous	Miscellaneous Custom	Biz-Custom	Education	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	44%	10%	per kWh	0.5	2.2	0.5
277	Motors	Cogged V-Belt	Biz-Custom	Education	Retro	17,237	3%	534	0.00	15	\$384	100%	13%	1	50%	10%	per measure	1.0	8.0	1.3
278	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Standard	Education	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2
279	Motors	Power Drive Systems	Biz-Custom	Education	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	5.5	11.0	7.0
280	Motors	Switch Reluctance Motors	Biz-Custom	Education	Retro	33,406	31%	10,222	0.00	15	\$528	100%	50%	2	100%	1%	per measure	10.1	20.2	17.0
281	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Education	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
282	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Education	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	30%	90%	per measure	n/a	0.0	n/a
283	Office_NonPC	Smart Power Strip - Commercial Use	Biz-Custom	Education	Retro	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	19%	per measure	0.7	3.8	1.2
284	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Education	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	19%	per measure	0.9	4.3	1.4
285	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Education	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
286	Office_PC	Energy Star Server	Biz-Custom	Education	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
287	Office_PC	Server Virtualization	Biz-Custom	Education	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
288	Office_PC	High Efficiency CRAC unit	Biz-Custom	Education	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
289	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Education	Retro	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
290	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Education	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
291	Office_PC	Energy Star Laptop	Biz-Custom	Education	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
292	Office_PC	Energy Star Monitor	Biz-Custom	Education	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
293	Refrigeration	Strip Curtains	Biz-Custom	Education	Retro	0	0%	0	0.00	4	\$0	100%	0%	1	11%	30%	per sq ft	n/a	0.0	n/a
294	Refrigeration	Bare Suction Line	Biz-Custom	Education	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	0%	50%	per measure	3.1	6.6	4.9
295	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Education	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	7%	25%	per HP	0.3	4.7	0.6
296	Refrigeration	Saturated Suction Controls	Biz-Custom	Education	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
297	Refrigeration	Compressor Retrofit	Biz-Custom	Education	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	25%	25%	per measure	0.4	12.0	0.3
298	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Standard	Education	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	7%	80%	per measure	3.1	9.9	4.8
299	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Education	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	7%	25%	per measure	1.9	4.7	4.4
300	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Education	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	9%	25%	per HP	0.5	4.7	1.2
301	Refrigeration	Refrigeration Economizer	Biz-Custom	Education	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	35%	10%	per kWh	1.7	3.4	1.1
302	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Education	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	12%	75%	per door	1.0	2.7	1.7
303	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Education	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	3%	25%	per door	0.5	6.2	0.7
304	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Education	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	2%	80%	per measure	3.1	9.9	4.8
305	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Education	Retro	441	34%	149	0.00	10	\$90	100%	15%	13	2%	2%	per measure	0.8	5.1	1.2
306	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Education	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	12%	54%	per door	0.3	2.9	0.5
307	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Education	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	12%	54%	per door	0.1	1.3	0.3
308	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Education	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	4%	75%	per door	4.1	8.1	6.0
309	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Education	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	4%	25%	per door	1.2	6.2	1.7
310	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Education	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	4%	54%	per door	0.4	5.5	0.6
311	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Education	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	4%	54%	per door	0.1	1.3	0.2
312	Refrigeration	Refrigeration - Custom	Biz-Custom	Education	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
313	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Education	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
314	Refrigeration	Energy Star Ice Machine	Biz-Custom	Education	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	4%	44%	per measure	3.22	4.8	5.2
315	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Custom	Education	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	3%	30%	per measure	0.2	6.6	0.3
316	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Education	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	3%	30%	per measure	0.1	1.7	0.4
317	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Education	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	7%	35%	per linear ft	3.9	7.8	4.8

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
318	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Education	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	7%	18%	per measure	1.4	6.2	1.8
319	Ventilation	Demand Controlled Ventilation	Biz-Standard	Education	Retro	2,223	20%	445	0.00	15	\$227	100%	63%	1	100%	25%	per measure	2.2	2.2	2.3
320	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Education	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	25%	per HP	6.1	10.0	5.4
321	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Education	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6
322	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Education	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
323	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Education	Retro	23,903	82%	19,579	0.00	15	\$4,229	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
324	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Education	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	100%	20%	per kWh	2.8	8.3	2.5
325	WholeBldg_HVAC	Cool Roof	Biz-Custom	Education	Retro	5	20%	1	0.00	25	\$0	100%	39%	2	25%	33%	per kWh	4.4	11.5	3.8
326	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Education	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
327	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Education	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
328	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Education	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
329	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Education	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
330	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Education	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
331	Behavioral	COM Competitions	Biz-Custom	Education	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
332	Behavioral	Business Energy Reports	Biz-Custom	Education	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
333	Behavioral	Building Benchmarking	Biz-Custom	Education	Retro	83	1%	1	0.00	2	\$0	100%	36%	1	100%	0%	per kWh	0.3	0.8	0.9
334	Behavioral	Strategic Energy Management	Biz-Custom SEM	Education	Retro	33	3%	1	0.00	5	\$0	100%	30%	1	100%	0%	per kWh	0.6	2.0	1.5
335	Behavioral	BEIMS	Biz-Custom	Education	Retro	43	2%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
336	Behavioral	Building Operator Certification	Biz-Custom	Education	Retro	41	3%	1	0.00	3	\$0	100%	44%	1	100%	2%	per kWh	0.8	1.8	1.5
337	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Food Sales	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
338	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Sales	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
339	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Food Sales	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
340	CompressedAir	AODD Pump Controls	Biz-Custom	Food Sales	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
341	CompressedAir	No Loss Condensate Drain	Biz-Standard	Food Sales	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
342	CompressedAir	Efficient Air Nozzles	Biz-Standard	Food Sales	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
343	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Sales	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
344	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Food Sales	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
345	Cooking	Commercial Electric Convection Oven	Biz-Custom	Food Sales	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
346	Cooking	Commercial Electric Griddle	Biz-Custom	Food Sales	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
347	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Food Sales	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
348	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Food Sales	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
349	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Custom	Food Sales	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
350	Cooking	Energy efficient electric fryer	Biz-Custom	Food Sales	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
351	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Food Sales	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
352	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Food Sales	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
353	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Food Sales	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
354	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Sales	ROB	700	15%	103	0.00	15	\$191	100%	44%	1	20%	10%	per ton	1.0	2.3	0.9
355	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Sales	ROB	700	19%	136	0.00	15	\$254	100%	46%	1	20%	10%	per ton	1.0	2.2	0.9
356	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Sales	ROB	700	31%	217	0.00	15	\$445	100%	49%	1	20%	10%	per ton	0.9	1.9	0.9
357	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Food Sales	ROB	769	8%	59	0.00	15	\$59	100%	53%	2	20%	10%	per ton	1.9	3.5	1.4
358	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Food Sales	ROB	769	12%	92	0.00	15	\$97	100%	53%	2	20%	10%	per ton	1.8	3.4	1.3
359	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Food Sales	ROB	769	22%	172	0.00	15	\$204	100%	53%	2	20%	10%	per ton	1.6	3.0	1.2
360	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Sales	Retro	0	7%	59	0.00	3	\$5	100%	50%	3	40%	50%	per ton	5.1	10.3	2.6
361	Cooling	Air Side Economizer	Biz-Custom	Food Sales	Retro	700	20%	140	0.00	10	\$84	100%	37%	4	40%	25%	per ton	2.3	6.2	1.4
362	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Food Sales	Retro	6,900	56%	3,850	0.00	15	\$2,950	100%	4%	5	40%	20%	per measure	2.4	55.6	1.2
363	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Sales	ROB	789	20%	158	0.00	15	\$537	100%	6%	6	40%	20%	per ton	0.6	8.5	0.3
364	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Food Sales	ROB	725	13%	91	0.00	15	\$115	100%	52%	7	20%	10%	per ton	1.5	2.9	1.2
365	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Food Sales	ROB	725	18%	128	0.00	15	\$514	100%	17%	7	20%	10%	per ton	0.5	2.7	0.4
366	Cooling	Air Conditioner - 18 SEER (<5 Tons)	Biz-Standard/SBDI	Food Sales	ROB	725	22%	161	0.00	15	\$514	100%	23%	7	20%	10%	per ton	0.6	2.5	0.5
367	Cooling	Air Conditioner - 21 SEER (<5 Tons)	Biz-Standard/SBDI	Food Sales	ROB	725	33%	242	0.00	15	\$631	100%	33%	7	20%	10%	per ton	0.7	2.2	0.7
368	Cooling	Smart Thermostat	Biz-Standard/SBDI	Food Sales	ROB	2,901	14%	403	0.00	10	\$224	100%	79%	8	20%	81%	per measure	2.5	3.1	1.9
369	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	853	8%	72	0.00	8	\$84	100%	19%	9	13%	20%	per ton	1.0	5.2	0.6
370	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	966	7%	68	0.00	8	\$84	100%	18%	10	13%	20%	per ton	0.9	5.2	0.6
371	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	1,069	10%	102	0.00	8	\$84	100%	27%	11	13%	20%	per ton	1.4	5.2	0.9
372	Cooling	Air Cooled Chiller	Biz-Standard	Food Sales	ROB	741	9%	67	0.00	20	\$106	100%	16%	12	0%	10%	per ton	1.4	8.8	0.8
373	Cooling	Water Cooled Chiller	Biz-Standard	Food Sales	ROB	372	23%	85	0.00	20	\$106	100%	21%	13	0%	10%	per ton	1.8	8.8	1.0
374	Cooling	Chiller Tune-up	Biz-Custom	Food Sales	Retro	0	7%	59	0.00	3	\$8	100%	50%	14	0%	50%	per ton	3.4	6.8	1.9
375	Cooling	Window Film	Biz-Custom	Food Sales	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
376	Cooling	Triple Pane Windows	Biz-Custom	Food Sales	ROB	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
377	Cooling	Energy Recovery Ventilator	Biz-Custom	Food Sales	Retro	722	24%	176	0.00	15	\$1,050	100%	4%	16	100%	2%	per ton	0.8	22.7	0.2
378	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
379	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
380	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
381	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
382	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
383	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Food Sales	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
384	ExteriorLighting	Bi-Level Lighting Fixture -- Garages	Biz-Custom	Food Sales	Retro	445	69%	307	0.00	10	\$274	100%	11%	7	14%	35%	per measure	0.3	2.8	0.8
385	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Food Sales	ROB	2,379	3%	80	0.00	15	\$135	100%	17%	1	25%	10%	per ton	0.7	4.2	0.7
386	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Food Sales	ROB	2,379	8%	188	0.00	15	\$421	100%	11%	1	25%	10%	per ton	0.5	4.3	0.5
387	Heating	Heat Pump - 18 SEER (<5 Tons)	Biz-Standard	Food Sales	ROB	2,379	11%	271	0.00	15	\$446	100%	15%	1	25%	10%	per ton	0.6	4.1	0.7
388	Heating	Heat Pump - 21 SEER (<5 Tons)	Biz-Standard	Food Sales	ROB	2,379	17%	398	0.00	15	\$520	100%	26%	1	25%	10%	per ton	0.9	3.3	0.9
389	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Food Sales	ROB	2,379	17%	398	0.00	16	\$224	100%	27%	1	25%	10%	per ton	2.1	7.8	1.9
390	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,666	6%	161	0.00	15	\$100	100%	31%	2	17%	10%	per ton	1.5	4.6	1.7
391	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,666	11%	300	0.00	15	\$171	100%	35%	2	17%	10%	per ton	1.6	4.4	1.8
392	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,758	6%	177	0.00	15	\$100	100%	34%	3	16%	10%	per ton	1.7	4.9	1.9
393	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,758	12%	324	0.00	15	\$182	100%	34%	3	16%	10%	per ton	1.6	4.7	1.9
394	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,882	7%	194	0.00	15	\$100	100%	34%	4	16%	10%	per ton	1.9	5.5	2.0
395	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Food Sales	ROB	2,882	12%	354	0.00	15	\$202	100%	31%	4	16%	10%	per ton	1.6	5.3	1.8
396	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Food Sales	ROB	1,846	3%	62	0.00	25	\$108	100%	9%	5	8%	20%	per ton	0.9	10.1	0.8
397	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Food Sales	ROB	1,846	7%	125	0.00	25	\$108	100%	17%	5	8%	20%	per ton	2.3	13.5	1.5
398	Heating	PTHP - <7,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	2,707	5%	128	0.00	8	\$84	100%	23%	6	3%	20%	per ton	1.1	4.8	1.0
399	Heating	PTHP - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	2,902	7%	202	0.00	8	\$84	100%	36%	7	3%	20%	per ton	2.4	6.6	1.6
400	Heating	PTHP - >15,000 Btuh - lodging	Biz-Custom	Food Sales	ROB	3,244	15%	478	0.00	8	\$84	100%	85%	8	3%	20%	per ton	4.8	5.7	3.7
401	HotWater	Res-Sized Heat Pump Water Heater	Biz-Standard	Food Sales	ROB	4,687	67%	3,139	0.00	15	\$1,115	100%	45%	1	80%	0%	per measure	1.9	4.1	2.9
402	HotWater	Commercial-Sized HPWH	Biz-Standard	Food Sales	ROB	116,224	77%	89,384	0.00	15	\$7,450	100%	88%	2	20%	0%	per measure	7.8	8.9	11.1
403	HotWater	Hot Water Pipe Insulation	Biz-Custom	Food Sales	Retro	4,687	2%	94	0.00	20	\$60	100%	17%	3	100%	80%	per measure	1.4	7.9	1.8
404	HotWater	Faucet Aerator	Biz-Custom	Food Sales	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
405	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Food Sales	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
406	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Food Sales	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
407	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Food Sales	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	0%	40%	per measure	4.3	24.8	5.2
408	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Food Sales	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	0%	40%	per measure	3.3	23.8	4.0
409	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Food Sales	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	0%	40%	per measure	4.4	19.2	5.3
410	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Food Sales	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	3%	40%	per measure	1.6	11.5	2.0
411	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Food Sales	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	3%	40%	per measure	1.5	8.0	1.9
412	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Food Sales	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	3%	40%	per measure	1.4	15.1	1.7
413	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Sales	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	7%	40%	per measure	2.5	12.6	3.2
414	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Sales	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	7%	40%	per measure	2.6	8.7	3.3
415	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Food Sales	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	7%	40%	per measure	2.1	7.9	2.8
416	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Sales	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	5%	40%	per measure	2.1	5.9	2.8
417	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Sales	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	13%	40%	per measure	6.2	11.8	7.8
418	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Sales	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	13%	40%	per measure	8.0	8.0	10.4
419	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Food Sales	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	13%	40%	per measure	6.6	6.6	8.8
420	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Food Sales	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	13%	40%	per measure	2.3	7.2	3.0
421	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Sales	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	46%	40%	per measure	3.7	11.3	4.6
422	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Sales	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	46%	40%	per measure	5.1	6.9	6.7
423	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Food Sales	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	46%	40%	per measure	5.0	10.0	6.4
424	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Food Sales	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	46%	40%	per measure	0.9	6.4	1.2
425	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Sales	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	25%	40%	per measure	4.0	10.0	5.0
426	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Sales	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	25%	40%	per measure	5.5	5.5	7.5
427	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Food Sales	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	25%	40%	per measure	3.4	4.8	4.6
428	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Food Sales	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	25%	40%	per measure	1.0	4.3	1.5
429	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Food Sales	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	20%	per measure	1.4	6.6	1.8
430	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Food Sales	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	20%	per measure	1.5	6.6	1.9
431	InteriorLighting	Lighting Power Density	Biz-Custom	Food Sales	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
432	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Food Sales	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
433	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Food Sales	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
434	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Sales	Retro	1,278	12%	153	0.00	5	\$233	100%	6%	1	5%	30%	per measure	0.1	1.8	0.3
435	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Food Sales	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	4%	10%	per HP	3.2	13.6	4.6
436	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Sales	Retro	3,819	83%	3,170	0.00	10	\$483	100%	50%	3	2%	10%	per measure	3.0	6.0	4.5
437	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Sales	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
438	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Sales	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	0%	70%	per measure	1.0	7.8	1.4
439	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Food Sales	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	5%	20%	per measure	3.6	5.7	5.0
440	Miscellaneous	Pool Pump Timer	Biz-Custom	Food Sales	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	2%	20%	per measure	3.1	5.7	4.2
441	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Food Sales	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	0%	20%	per measure	24.6	24.6	31.1

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
442	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Food Sales	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	3%	20%	per measure	4.3	7.8	5.9
443	Miscellaneous	High Efficiency Dryer	Biz-Custom	Food Sales	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	2%	20%	per measure	2.5	6.7	3.8
444	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Sales	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	36%	10%	per kWh	0.5	2.2	0.5
445	Motors	Cogged V-Belt	Biz-Custom	Food Sales	Retro	19,471	3%	604	0.00	15	\$384	100%	14%	1	50%	10%	per measure	1.1	7.6	1.5
446	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Custom	Food Sales	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2
447	Motors	Power Drive Systems	Biz-Custom	Food Sales	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	5.2	10.5	7.0
448	Motors	Switch Reluctance Motors	Biz-Custom	Food Sales	Retro	37,735	31%	11,547	0.00	15	\$528	100%	50%	2	100%	1%	per measure	11.4	22.8	19.2
449	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Food Sales	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
450	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Food Sales	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	30%	90%	per measure	n/a	0.0	n/a
451	Office_NonPC	Smart Power Strip – Commercial Use	Biz-Custom	Food Sales	Retro	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	29%	per measure	0.7	3.8	1.2
452	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Food Sales	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	29%	per measure	0.9	4.3	1.4
453	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Sales	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
454	Office_PC	Energy Star Server	Biz-Custom	Food Sales	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
455	Office_PC	Server Virtualization	Biz-Custom	Food Sales	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
456	Office_PC	High Efficiency CRAC unit	Biz-Custom	Food Sales	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
457	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Food Sales	ROB	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
458	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Sales	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
459	Office_PC	Energy Star Laptop	Biz-Custom	Food Sales	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
460	Office_PC	Energy Star Monitor	Biz-Custom	Food Sales	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
461	Refrigeration	Strip Curtains	Biz-Custom	Food Sales	Retro	412	50%	206	0.00	4	\$10	100%	50%	1	16%	30%	per sq ft	3.7	7.4	5.6
462	Refrigeration	Bare Suction Line	Biz-Custom	Food Sales	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	1%	50%	per measure	3.1	6.6	4.9
463	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Sales	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	11%	25%	per HP	0.3	4.7	0.6
464	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Sales	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
465	Refrigeration	Compressor Retrofit	Biz-Custom	Food Sales	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	37%	25%	per measure	0.4	12.0	0.3
466	Refrigeration	Electrically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Standard	Food Sales	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	10%	80%	per measure	3.1	9.9	4.8
467	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Sales	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	10%	25%	per measure	1.9	4.7	4.4
468	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Food Sales	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	14%	25%	per HP	0.5	4.7	1.2
469	Refrigeration	Refrigeration Economizer	Biz-Custom	Food Sales	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	52%	10%	per kWh	1.7	3.4	1.1
470	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Food Sales	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	8%	75%	per door	1.0	2.7	1.7
471	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Food Sales	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	2%	25%	per door	0.5	6.2	0.7
472	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Food Sales	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	1%	80%	per measure	3.1	9.9	4.8
473	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Food Sales	Retro	641	38%	242	0.00	10	\$102	100%	21%	13	1%	2%	per measure	1.1	5.1	1.7
474	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Food Sales	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	8%	54%	per door	0.3	2.9	0.5
475	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Food Sales	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	8%	54%	per door	0.1	1.3	0.3
476	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Food Sales	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	3%	75%	per door	4.1	8.1	6.0
477	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Food Sales	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	3%	25%	per door	1.2	6.2	1.7
478	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Food Sales	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	3%	54%	per door	0.4	5.5	0.6
479	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Food Sales	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	3%	54%	per door	0.1	1.3	0.2
480	Refrigeration	Refrigeration - Custom	Biz-Custom	Food Sales	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
481	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Food Sales	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
482	Refrigeration	Energy Star Ice Machine	Biz-Custom	Food Sales	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	0%	44%	per measure	3.2	4.8	5.2
483	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Custom	Food Sales	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	0%	30%	per measure	0.2	6.6	0.3
484	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Food Sales	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	0%	30%	per measure	0.1	1.7	0.4
485	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Food Sales	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	5%	35%	per linear ft	3.9	7.8	4.8
486	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Food Sales	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	5%	18%	per measure	1.4	6.2	1.8
487	Ventilation	Demand Controlled Ventilation	Biz-Standard	Food Sales	Retro	2,658	20%	532	0.00	15	\$227	100%	63%	1	100%	14%	per measure	3.4	3.6	2.6
488	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Food Sales	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	14%	per HP	6.1	10.0	5.4
489	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Food Sales	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6
490	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Food Sales	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
491	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Food Sales	Retro	23,903	82%	19,579	0.00	15	\$4,228	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
492	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Food Sales	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	100%	20%	per kWh	2.8	8.3	2.5
493	WholeBldg_HVAC	Cool Roof	Biz-Custom	Food Sales	Retro	5	20%	1	0.00	25	\$1	100%	23%	2	28%	33%	per kWh	2.6	11.5	2.2
494	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Food Sales	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
495	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Food Sales	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
496	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Food Sales	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
497	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Food Sales	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
498	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Food Sales	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
499	Behavioral	COM Competitions	Biz-Custom	Food Sales	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
500	Behavioral	Business Energy Reports	Biz-Custom	Food Sales	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
501	Behavioral	Building Benchmarking	Biz-Custom	Food Sales	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
502	Behavioral	Strategic Energy Management	Biz-Custom SEM	Food Sales	Retro	0	0%	0	0.00	5	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
503	Behavioral	BEIMS	Biz-Custom	Food Sales	Retro	20	5%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
504	Behavioral	Building Operator Certification	Biz-Custom	Food Sales	Retro	10	2%	0	0.00	3	\$0	100%	11%	1	100%	2%	per kWh	0.2	1.7	0.4
505	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Food Service	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
506	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Food Service	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.9
507	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Food Service	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
508	CompressedAir	AODD Pump Controls	Biz-Custom	Food Service	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
509	CompressedAir	No Loss Condensate Drain	Biz-Standard	Food Service	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
510	CompressedAir	Efficient Air Nozzles	Biz-Standard	Food Service	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
511	CompressedAir	Compressed Air - Custom	Biz-Custom	Food Service	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
512	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Food Service	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
513	Cooking	Commercial Electric Convection Oven	Biz-Custom	Food Service	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
514	Cooking	Commercial Electric Griddle	Biz-Custom	Food Service	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
515	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Food Service	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
516	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Food Service	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
517	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Custom	Food Service	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
518	Cooking	Energy efficient electric fryer	Biz-Custom	Food Service	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
519	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Food Service	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
520	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Food Service	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
521	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Food Service	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
522	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Service	ROB	893	15%	131	0.00	15	\$191	100%	44%	1	22%	10%	per ton	1.3	3.0	1.0
523	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Service	ROB	893	19%	174	0.00	15	\$254	100%	46%	1	22%	10%	per ton	1.3	2.8	1.0
524	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Food Service	ROB	893	31%	277	0.00	15	\$445	100%	49%	1	22%	10%	per ton	1.2	2.4	1.0
525	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Food Service	ROB	981	8%	75	0.00	15	\$59	100%	53%	2	22%	10%	per ton	2.4	4.5	1.6
526	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Food Service	ROB	981	12%	118	0.00	15	\$97	100%	53%	2	22%	10%	per ton	2.3	4.3	1.6
527	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Food Service	ROB	981	22%	219	0.00	15	\$204	100%	53%	2	22%	10%	per ton	2.0	3.8	1.4
528	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Food Service	Retro	0	7%	76	0.00	3	\$5	100%	50%	3	44%	50%	per ton	6.6	13.1	3.2
529	Cooling	Air Side Economizer	Biz-Custom	Food Service	Retro	893	20%	179	0.00	10	\$84	100%	47%	4	44%	25%	per ton	2.9	6.2	1.8
530	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Food Service	Retro	7,672	56%	4,281	0.00	15	\$2,950	100%	4%	5	44%	20%	per measure	2.7	61.8	1.3
531	Cooling	HVAC Occupancy Controls	Biz-Custom	Food Service	ROB	1,567	20%	313	0.00	15	\$537	100%	13%	6	44%	20%	per measure	1.1	8.5	0.6
532	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Food Service	ROB	925	13%	116	0.00	15	\$115	100%	52%	7	25%	10%	per ton	1.9	3.7	1.4
533	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Food Service	ROB	925	18%	163	0.00	15	\$514	100%	17%	7	25%	10%	per ton	0.6	3.4	0.4
534	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Standard/SBDI	Food Service	ROB	925	22%	206	0.00	15	\$514	100%	23%	7	25%	10%	per ton	0.8	3.3	0.6
535	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Standard/SBDI	Food Service	ROB	925	33%	308	0.00	15	\$631	100%	33%	7	25%	10%	per ton	0.9	2.8	0.7
536	Cooling	Smart Thermostat	Biz-Standard/SBDI	Food Service	ROB	3,701	14%	514	0.00	10	\$224	100%	79%	8	25%	81%	per measure	3.2	4.0	2.2
537	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Food Service	ROB	1,089	8%	92	0.00	8	\$84	100%	24%	9	10%	20%	per ton	1.2	5.2	0.8
538	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Food Service	ROB	1,194	7%	87	0.00	8	\$84	100%	23%	10	10%	20%	per ton	1.2	5.2	0.7
539	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Food Service	ROB	1,364	10%	130	0.00	8	\$84	100%	34%	11	10%	20%	per ton	1.8	5.2	1.1
540	Cooling	Air Cooled Chiller	Biz-Standard	Food Service	ROB	946	9%	85	0.00	20	\$106	100%	16%	12	0%	10%	per ton	1.8	11.2	1.0
541	Cooling	Water Cooled Chiller	Biz-Standard	Food Service	ROB	475	23%	108	0.00	20	\$106	100%	21%	13	0%	10%	per ton	2.3	11.2	1.3
542	Cooling	Chiller Tune-up	Biz-Custom	Food Service	Retro	0	7%	76	0.00	3	\$8	100%	50%	14	0%	50%	per ton	4.4	8.7	2.3
543	Cooling	Window Film	Biz-Custom	Food Service	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
544	Cooling	Triple Pane Windows	Biz-Custom	Food Service	Retro	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
545	Cooling	Energy Recovery Ventilator	Biz-Custom	Food Service	Retro	921	0%	0	0.00	15	\$0	100%	0%	16	100%	2%	per ton	n/a	0.0	n/a
546	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
547	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
548	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
549	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7
550	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
551	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Food Service	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
552	ExteriorLighting	Bi-Level Lighting Fixture - Garages	Biz-Custom	Food Service	Retro	467	69%	322	0.00	10	\$274	100%	12%	7	14%	35%	per measure	0.3	2.8	0.8
553	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Food Service	ROB	2,665	4%	94	0.00	15	\$135	100%	17%	1	31%	10%	per ton	0.9	5.2	0.8
554	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Food Service	ROB	2,665	8%	217	0.00	15	\$421	100%	11%	1	31%	10%	per ton	0.6	5.3	0.5
555	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Standard	Food Service	ROB	2,665	12%	311	0.00	15	\$446	100%	15%	1	31%	10%	per ton	0.8	5.0	0.7
556	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Standard	Food Service	ROB	2,665	17%	463	0.00	15	\$520	100%	26%	1	31%	10%	per ton	1.1	4.1	1.0
557	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Food Service	ROB	2,665	17%	463	0.00	16	\$224	100%	31%	1	31%	10%	per ton	2.6	8.3	2.2
558	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Food Service	ROB	2,981	6%	182	0.00	15	\$100	100%	31%	2	19%	10%	per ton	1.8	5.6	1.9
559	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Food Service	ROB	2,981	11%	338	0.00	15	\$171	100%	35%	2	19%	10%	per ton	1.9	5.3	2.0
560	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Food Service	ROB	3,085	7%	201	0.00	15	\$100	100%	34%	3	18%	10%	per ton	2.0	5.9	2.1
561	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Food Service	ROB	3,085	12%	366	0.00	15	\$182	100%	34%	3	18%	10%	per ton	1.9	5.6	2.1
562	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Food Service	ROB	3,230	7%	222	0.00	15	\$100	100%	34%	4	18%	10%	per ton	2.3	6.7	2.2
563	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Food Service	ROB	3,230	12%	402	0.00	15	\$202	100%	31%	4	18%	10%	per ton	2.0	6.4	2.0
564	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Food Service	ROB	2,090	3%	72	0.00	25	\$108	100%	10%	5	6%	20%	per ton	1.1	10.7	0.9
565	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Food Service	ROB	2,090	7%	153	0.00	25	\$108	100%	21%	5	6%	20%	per ton	3.0	13.9	1.9
566	Heating	PTHP - <7,000 Btuh - lodging	Biz-Custom	Food Service	ROB	3,020	5%	151	0.00	8	\$84	100%	27%	6	0%	20%	per ton	1.4	5.1	1.2
567	Heating	PTHP - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Food Service	ROB	3,249	8%	251	0.00	8	\$84	100%	45%	7	0%	20%	per ton	3.0	6.7	2.0
568	Heating	PTHP - >15,000 Btuh - lodging	Biz-Custom	Food Service	ROB	3,645	16%	578	0.00	8	\$84	100%	100%	8	0%	20%	per ton	6.1	6.1	4.5
569	HotWater	Res-Sized Heat Pump Water Heater	Biz-Standard	Food Service	ROB	5,521	67%													



Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
572	HotWater	Faucet Aerator	Biz-Custom	Food Service	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
573	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Food Service	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
574	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Food Service	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
575	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Food Service	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	1%	40%	per measure	4.3	24.8	5.2
576	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Food Service	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	1%	40%	per measure	3.3	23.8	4.0
577	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Food Service	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	1%	40%	per measure	4.4	19.2	5.3
578	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Food Service	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	8%	40%	per measure	1.6	11.5	2.0
579	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Food Service	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	8%	40%	per measure	1.5	8.0	1.9
580	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Food Service	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	8%	40%	per measure	1.4	15.1	1.7
581	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Service	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	21%	40%	per measure	2.5	12.6	3.2
582	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Service	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	21%	40%	per measure	2.6	8.7	3.3
583	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Food Service	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	21%	40%	per measure	2.1	7.9	2.8
584	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Food Service	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	14%	40%	per measure	2.1	5.9	2.8
585	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Service	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	8%	40%	per measure	6.2	11.8	7.8
586	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Service	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	8%	40%	per measure	8.0	8.0	10.4
587	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Food Service	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	8%	40%	per measure	6.6	6.6	8.8
588	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Food Service	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	8%	40%	per measure	2.3	7.2	3.0
589	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Service	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	30%	40%	per measure	3.7	11.3	4.6
590	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Service	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	30%	40%	per measure	5.1	6.9	6.7
591	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Food Service	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	30%	40%	per measure	5.0	10.0	6.4
592	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Food Service	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	30%	40%	per measure	0.9	6.4	1.2
593	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Food Service	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	17%	40%	per measure	4.0	10.0	5.0
594	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Food Service	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	17%	40%	per measure	5.5	5.5	7.5
595	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Food Service	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	17%	40%	per measure	3.4	4.8	4.6
596	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Food Service	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	17%	40%	per measure	1.0	4.3	1.5
597	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Food Service	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	20%	per measure	1.4	6.6	1.8
598	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Food Service	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	20%	per measure	1.5	6.6	1.9
599	InteriorLighting	Lighting Power Density	Biz-Custom	Food Service	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
600	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Food Service	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
601	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Food Service	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
602	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Food Service	Retro	1,278	12%	153	0.00	5	\$233	100%	6%	1	5%	30%	per measure	0.1	1.8	0.3
603	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Food Service	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	7%	10%	per HP	3.2	13.6	4.6
604	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Food Service	Retro	1,909	83%	1,585	0.00	10	\$483	100%	30%	3	2%	10%	per measure	1.5	5.1	2.3
605	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Food Service	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
606	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Food Service	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	0%	70%	per measure	1.0	7.8	1.4
607	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Food Service	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	5%	20%	per measure	3.6	5.7	5.0
608	Miscellaneous	Pool Pump Timer	Biz-Custom	Food Service	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	2%	20%	per measure	3.1	5.7	4.2
609	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Food Service	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	3%	20%	per measure	24.6	24.6	31.1
610	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Food Service	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	5%	20%	per measure	4.3	7.8	5.9
611	Miscellaneous	High Efficiency Dryer	Biz-Custom	Food Service	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	2%	20%	per measure	2.5	6.7	3.8
612	Miscellaneous	Miscellaneous Custom	Biz-Custom	Food Service	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	38%	10%	per kWh	0.5	2.2	0.5
613	Motors	Cogged V-Belt	Biz-Custom	Food Service	Retro	17,237	3%	534	0.00	15	\$384	100%	13%	1	50%	10%	per measure	1.0	8.0	1.3
614	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Standard	Food Service	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2
615	Motors	Power Drive Systems	Biz-Custom	Food Service	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	5.5	11.0	7.0
616	Motors	Switch Reluctance Motors	Biz-Custom	Food Service	Retro	33,406	31%	10,222	0.00	15	\$528	100%	50%	2	100%	1%	per measure	10.1	20.2	17.0
617	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Food Service	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
618	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Food Service	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	30%	90%	per measure	n/a	0.0	n/a
619	Office_NonPC	Smart Power Strip - Commercial Use	Biz-Custom	Food Service	Retro	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	29%	per measure	0.7	3.8	1.2
620	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Food Service	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	29%	per measure	0.9	4.3	1.4
621	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Food Service	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
622	Office_PC	Energy Star Server	Biz-Custom	Food Service	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
623	Office_PC	Server Virtualization	Biz-Custom	Food Service	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
624	Office_PC	High Efficiency CRAC unit	Biz-Custom	Food Service	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
625	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Food Service	Retro	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
626	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Food Service	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
627	Office_PC	Energy Star Laptop	Biz-Custom	Food Service	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
628	Office_PC	Energy Star Monitor	Biz-Custom	Food Service	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
629	Refrigeration	Strip Curtains	Biz-Custom	Food Service	Retro	88	50%	44	0.00	4	\$10	100%	39%	1	6%	30%	per sq ft	0.8	2.0	1.5
630	Refrigeration	Bare Suction Line	Biz-Custom	Food Service	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	0%	50%	per measure	3.1	6.6	4.9
631	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Food Service	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	4%	25%	per HP	0.3	4.7	0.6
632	Refrigeration	Saturated Suction Controls	Biz-Custom	Food Service	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
633	Refrigeration	Compressor Retrofit	Biz-Custom	Food Service	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	13%	25%	per measure	0.4	12.0	0.3

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
634	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Standard	Food Service	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	4%	80%	per measure	3.1	9.9	4.8
635	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Food Service	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	4%	25%	per measure	1.9	4.7	4.4
636	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Food Service	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	5%	25%	per HP	0.5	4.7	1.2
637	Refrigeration	Refrigeration Economizer	Biz-Custom	Food Service	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	18%	10%	per kWh	1.7	3.4	1.1
638	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Food Service	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	18%	75%	per door	1.0	2.7	1.7
639	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Food Service	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	5%	25%	per door	0.5	6.2	0.7
640	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Food Service	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	3%	80%	per measure	3.1	9.9	4.8
641	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Food Service	Retro	641	38%	242	0.00	10	\$102	100%	21%	13	3%	2%	per measure	1.1	5.1	1.7
642	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Food Service	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	18%	54%	per door	0.3	2.9	0.5
643	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Food Service	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	18%	54%	per door	0.1	1.3	0.3
644	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Food Service	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	6%	75%	per door	4.1	8.1	6.0
645	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Food Service	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	6%	25%	per door	1.2	6.2	1.7
646	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Food Service	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	6%	54%	per door	0.4	5.5	0.6
647	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Food Service	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	6%	54%	per door	0.1	1.3	0.2
648	Refrigeration	Refrigeration - Custom	Biz-Custom	Food Service	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
649	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Food Service	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
650	Refrigeration	Energy Star Ice Machine	Biz-Custom	Food Service	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	5%	44%	per measure	3.2	4.8	5.2
651	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Custom	Food Service	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	0%	30%	per measure	0.2	6.6	0.3
652	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Food Service	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	0%	30%	per measure	0.1	1.7	0.4
653	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Food Service	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	11%	35%	per linear ft	3.9	7.8	4.8
654	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Food Service	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	11%	18%	per measure	1.4	6.2	1.8
655	Ventilation	Demand Controlled Ventilation	Biz-Standard	Food Service	Retro	2,669	20%	534	0.00	15	\$227	100%	63%	1	100%	15%	per measure	1.7	2.2	2.6
656	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Food Service	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	15%	per HP	6.1	10.0	5.4
657	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Food Service	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6
658	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Food Service	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
659	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Food Service	Retro	23,903	82%	19,579	0.00	15	\$4,227	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
660	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Food Service	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	100%	20%	per kWh	2.8	8.3	2.5
661	WholeBldg_HVAC	Cool Roof	Biz-Custom	Food Service	Retro	5	20%	1	0.00	25	\$0	100%	42%	2	36%	33%	per kWh	4.8	11.5	4.1
662	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Food Service	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
663	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Food Service	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
664	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Food Service	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
665	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Food Service	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
666	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Food Service	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
667	Behavioral	COM Competitions	Biz-Custom	Food Service	Retro	53	2%	1	0.00	2	\$0	100%	48%	1	100%	0%	per kWh	1.6	3.2	3.5
668	Behavioral	Business Energy Reports	Biz-Custom	Food Service	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
669	Behavioral	Building Benchmarking	Biz-Custom	Food Service	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
670	Behavioral	Strategic Energy Management	Biz-Custom SEM	Food Service	Retro	0	0%	0	0.00	5	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
671	Behavioral	BEIMS	Biz-Custom	Food Service	Retro	20	5%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
672	Behavioral	Building Operator Certification	Biz-Custom	Food Service	Retro	40	3%	1	0.00	3	\$0	100%	44%	1	100%	2%	per kWh	0.8	1.8	1.5
673	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Health	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
674	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Health	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
675	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Health	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
676	CompressedAir	AQDD Pump Controls	Biz-Custom	Health	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
677	CompressedAir	No Loss Condensate Drain	Biz-Standard	Health	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
678	CompressedAir	Efficient Air Nozzles	Biz-Standard	Health	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
679	CompressedAir	Compressed Air - Custom	Biz-Custom	Health	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
680	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Health	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
681	Cooking	Commercial Electric Convection Oven	Biz-Custom	Health	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
682	Cooking	Commercial Electric Griddle	Biz-Custom	Health	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
683	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Health	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
684	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Health	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
685	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Custom	Health	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
686	Cooking	Energy efficient electric fryer	Biz-Custom	Health	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
687	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Health	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
688	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Health	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
689	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Health	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
690	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Health	ROB	2,763	15%	406	0.00	15	\$191	100%	44%	1	25%	10%	per ton	4.0	9.1	2.3
691	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Health	ROB	2,763	19%	537	0.00	15	\$254	100%	46%	1	25%	10%	per ton	4.0	8.6	2.3
692	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Health	ROB	2,763	31%	855	0.00	15	\$445	100%	49%	1	25%	10%	per ton	3.6	7.4	2.1
693	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Health	ROB	3,035	8%	233	0.00	15	\$59	100%	53%	2	25%	10%	per ton	7.4	14.0	3.9
694	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Health	ROB	3,035	12%	364	0.00	15	\$97	100%	53%	2	25%	10%	per ton	7.1	13.3	3.7
695	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Health	ROB	3,035	22%	679	0.00	15	\$204	100%	53%	2	25%	10%	per ton	6.2	11.8	3.4
696	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Health	Retro	0	7%	234	0.00	3	\$5	100%	50%	3	50%	50%	per ton	20.3	40.5	8.8
697	Cooling	Air Side Economizer	Biz-Custom	Health	Retro	2,763	20%	553	0.00	10	\$84	100%	50%	4	50%	25%	per ton	9.0	18.1	4.5
698	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Health	Retro	8,760	56%	4,888	0.00	15	\$2,950	100%	4%	5	50%	20%	per measure	3.1	70.6	1.5
699	Cooling	HVAC Occupancy Controls	Biz-Custom	Health	ROB	2,559	20%	512	0.00	15	\$537	100%	21%	6	50%	20%	per ton	1.8	8.5	1.0
700	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Health	ROB	2,862	13%	358	0.00	15	\$115	100%	52%	7	0%	10%	per ton	5.8	11.3	3.2

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
701	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Health	ROB	2,862	18%	505	0.00	15	\$514	100%	17%	7	0%	10%	per ton	1.8	10.7	1.0
702	Cooling	Air Conditioner - 18 SEER(<5 Tons)	Biz-Standard/SBDI	Health	ROB	2,862	22%	636	0.00	15	\$514	100%	23%	7	0%	10%	per ton	2.3	10.1	1.3
703	Cooling	Air Conditioner - 21 SEER(<5 Tons)	Biz-Standard/SBDI	Health	ROB	2,862	33%	954	0.00	15	\$631	100%	33%	7	0%	10%	per ton	2.8	8.6	1.6
704	Cooling	Smart Thermostat	Biz-Standard/SBDI	Health	ROB	11,448	14%	1,591	0.00	10	\$224	100%	79%	8	0%	63%	per measure	9.8	12.3	5.2
705	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Health	ROB	3,367	8%	285	0.00	8	\$84	100%	75%	9	0%	20%	per ton	3.9	5.2	2.5
706	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Health	ROB	3,693	7%	268	0.00	8	\$84	100%	70%	10	0%	20%	per ton	3.6	5.2	2.3
707	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Health	ROB	4,218	10%	402	0.00	8	\$84	100%	100%	11	0%	20%	per ton	5.4	5.4	3.4
708	Cooling	Air Cooled Chiller	Biz-Standard	Health	ROB	2,925	9%	263	0.00	20	\$106	100%	16%	12	45%	10%	per ton	5.7	34.6	2.7
709	Cooling	Water Cooled Chiller	Biz-Standard	Health	ROB	1,469	23%	334	0.00	20	\$106	100%	21%	13	5%	10%	per ton	7.2	34.6	3.5
710	Cooling	Chiller Tune-up	Biz-Custom	Health	Retro	0	7%	234	0.00	3	\$8	100%	50%	14	50%	50%	per ton	13.5	27.0	6.0
711	Cooling	Window Film	Biz-Custom	Health	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
712	Cooling	Triple Pane Windows	Biz-Custom	Health	ROB	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
713	Cooling	Energy Recovery Ventilator	Biz-Custom	Health	Retro	2,850	30%	862	0.00	15	\$1,050	100%	18%	16	100%	2%	per ton	2.2	12.2	0.9
714	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Health	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
715	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Health	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
716	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Health	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
717	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Health	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7
718	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Health	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
719	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Health	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
720	ExteriorLighting	Bi-Level Lighting Fixture - Garages	Biz-Custom	Health	Retro	509	69%	351	0.00	10	\$274	100%	13%	7	14%	35%	per measure	0.4	2.8	0.9
721	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Health	ROB	6,887	4%	261	0.00	15	\$135	100%	17%	1	0%	10%	per ton	2.6	15.4	1.8
722	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Health	ROB	6,887	8%	583	0.00	15	\$421	100%	11%	1	0%	10%	per ton	1.6	15.4	1.3
723	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Standard	Health	ROB	6,887	12%	836	0.00	15	\$446	100%	15%	1	0%	10%	per ton	2.2	14.6	1.8
724	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Standard	Health	ROB	6,887	18%	1,269	0.00	15	\$520	100%	26%	1	0%	10%	per ton	3.1	12.0	2.3
725	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Health	ROB	6,887	18%	1,269	0.00	16	\$224	100%	85%	1	0%	10%	per ton	7.6	8.9	5.9
726	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Health	ROB	7,678	6%	478	0.00	15	\$100	100%	31%	2	17%	10%	per ton	5.0	16.1	4.4
727	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Health	ROB	7,678	12%	883	0.00	15	\$171	100%	35%	2	17%	10%	per ton	5.4	15.3	4.8
728	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Health	ROB	7,953	7%	532	0.00	15	\$100	100%	34%	3	17%	10%	per ton	5.8	17.0	4.9
729	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Health	ROB	7,953	12%	962	0.00	15	\$182	100%	34%	3	17%	10%	per ton	5.6	16.3	4.8
730	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Health	ROB	8,353	7%	589	0.00	15	\$100	100%	34%	4	17%	10%	per ton	6.6	19.4	5.4
731	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Health	ROB	8,353	13%	1,060	0.00	15	\$202	100%	31%	4	17%	10%	per ton	5.7	18.4	4.8
732	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Health	ROB	5,493	4%	198	0.00	25	\$108	100%	27%	5	0%	20%	per ton	3.2	11.6	2.4
733	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Health	ROB	5,493	8%	446	0.00	25	\$108	100%	62%	5	0%	20%	per ton	9.0	14.5	5.5
734	Heating	PTHP - <7,000 Btuh - lodging	Biz-Custom	Health	ROB	7,752	5%	420	0.00	8	\$84	100%	75%	6	0%	20%	per ton	4.1	5.4	3.3
735	Heating	PTHP - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Health	ROB	8,385	9%	753	0.00	8	\$84	100%	100%	7	0%	20%	per ton	9.2	9.2	5.5
736	Heating	PTHP - >15,000 Btuh - lodging	Biz-Custom	Health	ROB	9,467	18%	1,670	0.00	8	\$84	100%	100%	8	0%	20%	per ton	18.4	18.4	11.0
737	HotWater	Res-ized Heat Pump Water Heater	Biz-Standard	Health	ROB	6,995	67%	4,684	0.00	15	\$1,115	100%	45%	1	50%	29%	per measure	2.8	6.2	4.0
738	HotWater	Commercial-ized HPWH	Biz-Standard	Health	ROB	116,224	77%	89,384	0.00	15	\$7,450	100%	88%	2	50%	29%	per measure	7.8	8.9	11.1
739	HotWater	Hot Water Pipe Insulation	Biz-Custom	Health	Retro	6,995	2%	140	0.00	20	\$60	100%	26%	3	100%	80%	per measure	2.0	7.9	2.7
740	HotWater	Faucet Aerator	Biz-Custom	Health	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
741	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Health	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
742	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Health	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
743	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Health	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	0%	40%	per measure	4.3	24.8	5.2
744	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Health	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	0%	40%	per measure	3.3	23.8	4.0
745	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Health	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	0%	40%	per measure	4.4	19.2	5.3
746	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Health	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	3%	40%	per measure	1.6	11.5	2.0
747	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Health	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	3%	40%	per measure	1.5	8.0	1.9
748	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Health	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	3%	40%	per measure	1.4	15.1	1.7
749	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Health	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	9%	40%	per measure	2.5	12.6	3.2
750	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Health	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	9%	40%	per measure	2.6	8.7	3.3
751	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Health	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	9%	40%	per measure	2.1	7.9	2.8
752	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Health	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	6%	40%	per measure	2.1	5.9	2.8
753	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Health	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	12%	40%	per measure	6.2	11.8	7.8
754	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Health	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	12%	40%	per measure	8.0	8.0	10.4
755	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Health	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	12%	40%	per measure	6.6	6.6	8.8
756	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Health	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	12%	40%	per measure	2.3	7.2	3.0
757	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Health	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	44%	40%	per measure	3.7	11.3	4.6
758	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Health	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	44%	40%	per measure	5.1	6.9	6.7
759	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Health	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	44%	40%	per measure	5.0	10.0	6.4

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
760	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Health	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	44%	40%	per measure	0.9	6.4	1.2
761	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Health	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	24%	40%	per measure	4.0	10.0	5.0
762	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Health	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	24%	40%	per measure	5.5	5.5	7.5
763	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Health	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	24%	40%	per measure	3.4	4.8	4.6
764	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Health	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	24%	40%	per measure	1.0	4.3	1.5
765	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Health	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	27%	per measure	1.4	6.6	1.8
766	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Health	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	27%	per measure	1.5	6.6	1.9
767	InteriorLighting	Lighting Power Density	Biz-Custom	Health	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
768	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Health	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
769	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Health	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
770	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Health	Retro	1,278	12%	151	0.00	5	\$233	100%	6%	1	5%	30%	per measure	0.1	1.8	0.3
771	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Health	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	6%	10%	per HP	3.2	13.6	4.6
772	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Health	ROB	1,909	83%	1,585	0.00	10	\$483	100%	30%	3	2%	10%	per measure	1.5	5.1	2.3
773	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Health	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
774	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Health	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	0%	70%	per measure	1.0	7.8	1.4
775	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Health	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	0%	20%	per measure	3.6	5.7	5.0
776	Miscellaneous	Pool Pump Timer	Biz-Custom	Health	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	2%	20%	per measure	3.1	5.7	4.2
777	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Health	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	3%	20%	per measure	24.6	24.6	31.1
778	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Health	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	5%	20%	per measure	4.3	7.8	5.9
779	Miscellaneous	High Efficiency Dryer	Biz-Custom	Health	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	2%	20%	per measure	2.5	6.7	3.8
780	Miscellaneous	Miscellaneous Custom	Biz-Custom	Health	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	26%	10%	per kWh	0.5	2.2	0.5
781	Motors	Cogged V-Belt	Biz-Custom	Health	Retro	17,237	3%	534	0.00	15	\$384	100%	13%	1	50%	10%	per measure	1.0	8.0	1.3
782	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Standard	Health	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2
783	Motors	Power Drive Systems	Biz-Custom	Health	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	5.5	11.0	7.0
784	Motors	Switch Reluctance Motors	Biz-Custom	Health	Retro	33,406	31%	10,222	0.00	15	\$528	100%	50%	2	100%	1%	per measure	10.1	20.2	17.0
785	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Health	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
786	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Health	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	5%	90%	per measure	n/a	0.0	n/a
787	Office_NonPC	Smart Power Strip - Commercial Use	Biz-Custom	Health	Retro	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	19%	per measure	0.7	3.8	1.2
788	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Health	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	19%	per measure	0.9	4.3	1.4
789	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Health	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
790	Office_PC	Energy Star Server	Biz-Custom	Health	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
791	Office_PC	Server Virtualization	Biz-Custom	Health	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
792	Office_PC	High Efficiency CRAC unit	Biz-Custom	Health	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
793	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Health	Retro	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
794	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Health	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
795	Office_PC	Energy Star Laptop	Biz-Custom	Health	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
796	Office_PC	Energy Star Monitor	Biz-Custom	Health	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
797	Refrigeration	Strip Curtains	Biz-Custom	Health	Retro	0	0%	0	0.00	4	\$0	100%	0%	1	5%	30%	per sq ft	n/a	0.0	n/a
798	Refrigeration	Bare Suction Line	Biz-Custom	Health	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	0%	50%	per measure	3.1	6.6	4.9
799	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Health	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	4%	25%	per HP	0.3	4.7	0.6
800	Refrigeration	Saturated Suction Controls	Biz-Custom	Health	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
801	Refrigeration	Compressor Retrofit	Biz-Custom	Health	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	12%	25%	per measure	0.4	12.0	0.3
802	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Standard	Health	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	3%	80%	per measure	3.1	9.9	4.8
803	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Health	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	3%	25%	per measure	1.9	4.7	4.4
804	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Health	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	5%	25%	per HP	0.5	4.7	1.2
805	Refrigeration	Refrigeration Economizer	Biz-Custom	Health	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	17%	10%	per kWh	1.7	3.4	1.1
806	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Health	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	17%	25%	per door	1.0	2.7	1.7
807	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Health	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	5%	25%	per door	0.5	6.2	0.7
808	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Health	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	3%	80%	per measure	3.1	9.9	4.8
809	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Health	Retro	441	34%	149	0.00	10	\$90	100%	15%	13	3%	2%	per measure	0.8	5.1	1.2
810	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Health	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	17%	54%	per door	0.3	2.9	0.5
811	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Health	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	17%	54%	per door	0.1	1.3	0.3
812	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Health	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	6%	25%	per door	4.1	8.1	6.0
813	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Health	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	6%	25%	per door	1.2	6.2	1.7
814	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Health	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	6%	54%	per door	0.4	5.5	0.6
815	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Health	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	6%	54%	per door	0.1	1.3	0.2
816	Refrigeration	Refrigeration - Custom	Biz-Custom	Health	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
817	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Health	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
818	Refrigeration	Energy Star Ice Machine	Biz-Custom	Health	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	6%	44%	per measure	3.2	4.8	5.2
819	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Standard	Health	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	3%	30%	per measure	0.2	6.6	0.3
820	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Health	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	3%	30%	per measure	0.1	1.7	0.4
821	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Health	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	15%	35%	per linear ft	3.9	7.8	4.8
822	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Health	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	10%	18%	per measure	1.4	6.2	1.8
823	Ventilation	Demand Controlled Ventilation	Biz-Standard	Health	Retro	2,639	20%	528	0.00	15	\$227	100%	63%	1	100%	39%	per measure	2.7	2.7	2.6
824	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Health	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	39%	per HP	6.1	10.0	5.4
825	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Health	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
826	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Health	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
827	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Health	Retro	23,903	82%	19,579	0.00	15	\$4,226	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
828	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Health	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	100%	20%	per kWh	2.8	8.3	2.5
829	WholeBldg_HVAC	Cool Roof	Biz-Custom	Health	Retro	5	20%	1	0.00	25	\$0	100%	50%	2	34%	33%	per kWh	17.2	34.4	13.7
830	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Health	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
831	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Health	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
832	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Health	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
833	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Health	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
834	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Health	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
835	Behavioral	COM Competitions	Biz-Custom	Health	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
836	Behavioral	Business Energy Reports	Biz-Custom	Health	Retro	0	0%	0	0.00	2	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
837	Behavioral	Building Benchmarking	Biz-Custom	Health	Retro	114	1%	1	0.00	2	\$0	100%	36%	1	100%	0%	per kWh	0.3	0.8	0.9
838	Behavioral	Strategic Energy Management	Biz-Custom SEM	Health	Retro	33	3%	1	0.00	5	\$0	100%	30%	1	100%	0%	per kWh	0.6	2.0	1.5
839	Behavioral	BEIMS	Biz-Custom	Health	Retro	50	2%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
840	Behavioral	Building Operator Certification	Biz-Custom	Health	Retro	20	3%	0	0.00	3	\$0	100%	22%	1	100%	2%	per kWh	0.4	1.7	0.7
841	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Lodging	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
842	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Lodging	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
843	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Lodging	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
844	CompressedAir	AODD Pump Controls	Biz-Custom	Lodging	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
845	CompressedAir	No Loss Condensate Drain	Biz-Standard	Lodging	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
846	CompressedAir	Efficient Air Nozzles	Biz-Standard	Lodging	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
847	CompressedAir	Compressed Air - Custom	Biz-Custom	Lodging	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
848	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Lodging	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
849	Cooking	Commercial Electric Convection Oven	Biz-Custom	Lodging	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a
850	Cooking	Commercial Electric Griddle	Biz-Custom	Lodging	ROB	15,825	12%	1,910	0.00	12	\$0	100%	40%	2	14%	17%	per measure	n/a	0.0	n/a
851	Cooking	Commercial Electric Steam Cooker	Biz-Standard	Lodging	ROB	17,846	55%	9,863	0.00	12	\$4,150	100%	21%	3	6%	45%	per measure	1.5	7.1	1.9
852	Cooking	Dishwasher Low Temp Door (Energy Star)	Biz-Custom	Lodging	ROB	39,306	44%	17,369	0.00	15	\$662	100%	100%	4	26%	61%	per measure	14.0	14.0	23.4
853	Cooking	Dishwasher High Temp Door (Energy Star)	Biz-Standard	Lodging	ROB	26,901	32%	8,586	0.00	15	\$995	100%	95%	4	26%	61%	per measure	4.6	4.8	8.3
854	Cooking	Energy efficient electric fryer	Biz-Custom	Lodging	ROB	17,451	5%	952	0.00	12	\$210	100%	50%	5	27%	24%	per measure	2.8	5.7	3.7
855	Cooking	Insulated Holding Cabinets (Full Size)	Biz-Standard	Lodging	ROB	1,534	46%	709	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	0.2	1.0	0.5
856	Cooking	Insulated Holding Cabinets (3/4 Size)	Biz-Standard	Lodging	ROB	4,383	63%	2,772	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.0	3.9	1.4
857	Cooking	Insulated Holding Cabinets (Half-Size)	Biz-Standard	Lodging	ROB	6,136	72%	4,438	0.00	12	\$1,783	100%	25%	6	3%	16%	per measure	1.6	6.2	2.0
858	Cooling	Air Conditioner - 17 IEER (5-20 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,920	15%	282	0.00	15	\$191	100%	44%	1	13%	10%	per ton	2.8	6.4	1.7
859	Cooling	Air Conditioner - 18 IEER (5-20 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,920	19%	373	0.00	15	\$254	100%	46%	1	13%	10%	per ton	2.8	6.0	1.7
860	Cooling	Air Conditioner - 21 IEER (5-20 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,920	31%	594	0.00	15	\$445	100%	49%	1	13%	10%	per ton	2.5	5.1	1.6
861	Cooling	Air Conditioner - 14.3 IEER (20+ Tons)	Biz-Standard	Lodging	ROB	2,109	8%	162	0.00	15	\$59	100%	53%	2	13%	10%	per ton	5.1	9.7	2.9
862	Cooling	Air Conditioner - 15 IEER (20+ Tons)	Biz-Standard	Lodging	ROB	2,109	12%	253	0.00	15	\$97	100%	53%	2	13%	10%	per ton	4.9	9.3	2.8
863	Cooling	Air Conditioner - 17 IEER (20+ Tons)	Biz-Standard	Lodging	ROB	2,109	22%	471	0.00	15	\$204	100%	53%	2	13%	10%	per ton	4.3	8.2	2.5
864	Cooling	Comprehensive Rooftop Unit Quality Maintenance (AC Tune-up)	Biz-Custom	Lodging	Retro	0	7%	162	0.00	3	\$5	100%	50%	3	26%	50%	per ton	14.1	28.2	6.3
865	Cooling	Air Side Economizer	Biz-Custom	Lodging	Retro	1,920	20%	384	0.00	10	\$84	100%	50%	4	26%	25%	per ton	6.3	12.6	3.3
866	Cooling	Advanced Rooftop Controls	Biz-Standard/SBDI	Lodging	Retro	8,760	56%	4,888	0.00	15	\$2,950	100%	4%	5	26%	20%	per measure	3.1	70.6	1.5
867	Cooling	HVAC Occupancy Controls	Biz-Custom	Lodging	ROB	1,595	20%	319	0.00	15	\$537	100%	13%	6	26%	20%	per ton	1.1	8.5	0.6
868	Cooling	Air Conditioner - 16 SEER (<5 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,989	13%	249	0.00	15	\$115	100%	52%	7	0%	10%	per ton	4.1	7.9	2.4
869	Cooling	Air Conditioner - 17 SEER (<5 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,989	18%	351	0.00	15	\$514	100%	17%	7	0%	10%	per ton	1.3	7.4	0.8
870	Cooling	Air Conditioner - 18 SEER (<5 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,989	22%	442	0.00	15	\$514	100%	23%	7	0%	10%	per ton	1.6	7.0	1.0
871	Cooling	Air Conditioner - 21 SEER (<5 Tons)	Biz-Standard/SBDI	Lodging	ROB	1,989	33%	663	0.00	15	\$631	100%	33%	7	0%	10%	per ton	2.0	6.0	1.2
872	Cooling	Smart Thermostat	Biz-Standard/SBDI	Lodging	ROB	7,954	14%	1,106	0.00	10	\$224	100%	79%	8	0%	63%	per measure	6.8	8.5	3.8
873	Cooling	PTAC - <7,000 Btuh - lodging	Biz-Custom	Lodging	ROB	2,339	8%	198	0.00	8	\$84	100%	52%	9	5%	20%	per ton	2.7	5.2	1.7
874	Cooling	PTAC - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Lodging	ROB	2,566	7%	186	0.00	8	\$84	100%	49%	10	5%	20%	per ton	2.5	5.2	1.6
875	Cooling	PTAC - >15,000 Btuh - lodging	Biz-Custom	Lodging	ROB	2,931	10%	279	0.00	8	\$84	100%	73%	11	5%	20%	per ton	3.8	5.2	2.4
876	Cooling	Air Cooled Chiller	Biz-Standard	Lodging	ROB	2,032	9%	183	0.00	20	\$106	100%	16%	12	42%	10%	per ton	3.9	24.0	2.0
877	Cooling	Water Cooled Chiller	Biz-Standard	Lodging	ROB	1,021	23%	232	0.00	20	\$106	100%	21%	13	5%	10%	per ton	5.0	24.0	2.5
878	Cooling	Chiller Tune-up	Biz-Custom	Lodging	Retro	0	7%	162	0.00	3	\$8	100%	50%	14	47%	50%	per ton	9.4	18.8	4.3
879	Cooling	Window Film	Biz-Custom	Lodging	Retro	6,000	4%	264	0.00	10	\$154	100%	38%	15	100%	25%	per measure	1.3	6.2	1.4
880	Cooling	Triple Pane Windows	Biz-Custom	Lodging	ROB	6,000	6%	360	0.00	25	\$700	100%	11%	15	100%	2%	per measure	1.3	11.8	0.7
881	Cooling	Energy Recovery Ventilator	Biz-Custom	Lodging	Retro	1,980	0%	0	0.00	15	\$0	100%	0%	16	100%	2%	per ton	n/a	0.0	n/a
882	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	655	66%	432	0.00	15	\$191	100%	23%	1	14%	69%	per measure	0.9	4.0	2.2
883	ExteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	1,061	64%	679	0.00	15	\$191	100%	35%	2	14%	69%	per measure	2.1	6.0	3.4
884	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	1,205	68%	823	0.00	15	\$234	100%	35%	3	14%	69%	per measure	1.4	4.0	3.4
885	ExteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	2,214	65%	1,436	0.00	15	\$234	100%	50%	4	14%	69%	per measure	3.7	7.3	5.7
886	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 12/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	1,931	78%	1,507	0.00	15	\$362	100%	42%	5	14%	69%	per measure	1.6	4.0	4.0
887	ExteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture	Biz-Custom	Lodging	Retro	3,712	69%	2,575	0.00	15	\$362	100%	50%	6	14%	69%	per measure	4.2	8.5	6.6
888	ExteriorLighting	Bi-Level Lighting Fixture - Garages	Biz-Custom	Lodging	Retro	519	69%	358	0.00	10	\$274	100%	13%	7	14%	35%	per measure	0.4	2.8	0.9

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
889	Heating	Heat Pump - 16 SEER (<5 Tons)	Biz-Standard	Lodging	ROB	3,306	4%	148	0.00	15	\$135	100%	17%	1	0%	10%	per ton	1.7	10.1	1.1
890	Heating	Heat Pump - 17 SEER (<5 Tons)	Biz-Standard	Lodging	ROB	3,306	9%	311	0.00	15	\$421	100%	11%	1	0%	10%	per ton	1.0	9.8	0.7
891	Heating	Heat Pump - 18 SEER(<5 Tons)	Biz-Standard	Lodging	ROB	3,306	13%	444	0.00	15	\$446	100%	15%	1	0%	10%	per ton	1.4	9.3	1.0
892	Heating	Heat Pump - 21 SEER(<5 Tons)	Biz-Standard	Lodging	ROB	3,306	21%	704	0.00	15	\$520	100%	26%	1	0%	10%	per ton	2.0	7.8	1.4
893	Heating	Variable Refrigerant Flow Heat Pump	Biz-Custom	Lodging	ROB	3,306	21%	704	0.00	16	\$224	100%	47%	1	0%	10%	per ton	4.9	10.4	3.3
894	Heating	Heat Pump - 15.0 IEER COP 3.6 (65,000-134,000 Btu/hr)	Biz-Standard	Lodging	ROB	3,652	7%	238	0.00	15	\$100	100%	31%	2	9%	10%	per ton	3.1	9.9	2.3
895	Heating	Heat Pump - 16.0 IEER COP 3.8 (65,000-134,000 Btu/hr)	Biz-Standard	Lodging	ROB	3,652	12%	436	0.00	15	\$171	100%	35%	2	9%	10%	per ton	3.3	9.3	2.5
896	Heating	Heat Pump - 14.5 IEER COP 3.5 (135,000-239,000 Btu/hr)	Biz-Standard	Lodging	ROB	3,792	7%	270	0.00	15	\$100	100%	34%	3	9%	10%	per ton	3.6	10.5	2.6
897	Heating	Heat Pump - 15.5 IEER COP 3.7 (135,000-239,000 Btu/hr)	Biz-Standard	Lodging	ROB	3,792	13%	481	0.00	15	\$182	100%	34%	3	9%	10%	per ton	3.4	10.0	2.6
898	Heating	Heat Pump - 12 IEER 3.4 COP (>239,000 Btu/hr)	Biz-Standard	Lodging	ROB	4,015	8%	304	0.00	15	\$100	100%	34%	4	9%	10%	per ton	4.1	12.1	2.9
899	Heating	Heat Pump - 13 IEER 3.6 COP (>239,000 Btu/hr)	Biz-Standard	Lodging	ROB	4,015	13%	538	0.00	15	\$202	100%	31%	4	9%	10%	per ton	3.5	11.4	2.6
900	Heating	Geothermal HP - 17 EER < 135kbtu	Biz-Custom	Lodging	ROB	2,757	4%	109	0.00	25	\$108	100%	15%	5	15%	20%	per ton	2.1	13.6	1.3
901	Heating	Geothermal HP - 19 EER < 135kbtu	Biz-Custom	Lodging	ROB	2,757	10%	281	0.00	25	\$108	100%	39%	5	15%	20%	per ton	6.1	15.6	3.5
902	Heating	PTHP - <7,000 Btuh - lodging	Biz-Custom	Lodging	ROB	3,652	7%	241	0.00	8	\$84	100%	43%	6	5%	20%	per ton	2.7	6.2	1.9
903	Heating	PTHP - 7,000 to 15,000 Btuh - lodging	Biz-Custom	Lodging	ROB	4,012	12%	497	0.00	8	\$84	100%	89%	7	5%	20%	per ton	6.3	7.1	3.9
904	Heating	PTHP - >15,000 Btuh - lodging	Biz-Custom	Lodging	ROB	4,605	22%	1,033	0.00	8	\$84	100%	100%	8	5%	20%	per ton	12.4	12.4	7.2
905	HotWater	Res-Sized Heat Pump Water Heater	Biz-Standard	Lodging	ROB	6,347	67%	4,250	0.00	15	\$1,115	100%	45%	1	30%	26%	per measure	2.5	5.6	3.7
906	HotWater	Commercial-Sized HPWH	Biz-Standard	Lodging	ROB	116,224	77%	89,384	0.00	15	\$7,450	100%	88%	2	70%	26%	per measure	7.8	8.9	11.1
907	HotWater	Hot Water Pipe Insulation	Biz-Custom	Lodging	Retro	6,347	2%	127	0.00	20	\$60	100%	23%	3	100%	80%	per measure	1.8	7.9	2.4
908	HotWater	Faucet Aerator	Biz-Custom	Lodging	Retro	400	22%	87	0.00	9	\$8	100%	50%	4	20%	85%	per measure	5.1	10.3	6.6
909	HotWater	Low Flow Pre-Rinse Sprayers	Biz-Custom	Lodging	ROB	11,029	52%	5,787	0.00	5	\$93	100%	100%	5	20%	85%	per measure	17.9	17.9	20.8
910	HotWater	ENERGY STAR Commercial Washing Machines	Biz-Custom	Lodging	ROB	1,868	20%	380	0.00	11	\$200	100%	21%	6	25%	33%	per measure	1.0	4.6	1.5
911	InteriorLighting	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	Biz-Standard/SBDI	Lodging	Retro	154	83%	127	0.00	10	\$16	100%	17%	1	2%	40%	per measure	4.3	24.8	5.2
912	InteriorLighting	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	Biz-Standard/SBDI	Lodging	Retro	144	85%	122	0.00	10	\$20	100%	14%	1	2%	40%	per measure	3.3	23.8	4.0
913	InteriorLighting	LED Specialty Lamp	Biz-Standard/SBDI	Lodging	Retro	114	87%	99	0.00	10	\$12	100%	23%	1	2%	40%	per measure	4.4	19.2	5.3
914	InteriorLighting	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	Biz-Standard/SBDI	Lodging	Retro	177	84%	148	0.00	10	\$48	100%	14%	2	10%	40%	per measure	1.6	11.5	2.0
915	InteriorLighting	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	Biz-Standard/SBDI	Lodging	Retro	121	85%	103	0.00	10	\$37	100%	18%	2	10%	40%	per measure	1.5	8.0	1.9
916	InteriorLighting	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	Biz-Standard/SBDI	Lodging	Retro	232	84%	194	0.00	10	\$75	100%	9%	2	10%	40%	per measure	1.4	15.1	1.7
917	InteriorLighting	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	Biz-Standard/SBDI	Lodging	Retro	821	82%	674	0.00	15	\$191	100%	20%	3	29%	40%	per measure	2.5	12.6	3.2
918	InteriorLighting	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	Biz-Standard/SBDI	Lodging	Retro	1,390	60%	836	0.00	15	\$234	100%	30%	3	29%	40%	per measure	2.6	8.7	3.3
919	InteriorLighting	LED Fixture with Network Controls Replacing Interior HID	Biz-Standard	Lodging	Retro	1,427	75%	1,070	0.00	15	\$367	100%	27%	3	29%	40%	per measure	2.1	7.9	2.8
920	InteriorLighting	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	Biz-Standard/SBDI	Lodging	Retro	1,525	68%	1,030	0.00	15	\$362	100%	35%	4	19%	40%	per measure	2.1	5.9	2.8
921	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Lodging	Retro	687	51%	350	0.00	10	\$30	100%	53%	5	6%	40%	per measure	6.2	11.8	7.8
922	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Lodging	Retro	834	57%	477	0.00	15	\$43	100%	100%	5	6%	40%	per measure	8.0	8.0	10.4
923	InteriorLighting	LED Replacing Interior T5 Fluorescent (Type C)	Biz-Standard/SBDI	Lodging	Retro	473	78%	370	0.00	11	\$32	100%	100%	5	6%	40%	per measure	6.6	6.6	8.8
924	InteriorLighting	LED Fixture with Network Controls Replacing Interior T5 Fluorescent	Biz-Standard	Lodging	Retro	275	65%	178	0.00	15	\$56	100%	32%	5	6%	40%	per measure	2.3	7.2	3.0
925	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Lodging	Retro	382	54%	208	0.00	10	\$30	100%	33%	6	22%	40%	per measure	3.7	11.3	4.6
926	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Lodging	Retro	349	60%	209	0.00	15	\$30	100%	74%	6	22%	40%	per measure	5.1	6.9	6.7
927	InteriorLighting	LED Replacing Interior T8 Fluorescent (Type C)	Biz-Standard/SBDI	Lodging	Retro	429	61%	263	0.00	11	\$30	100%	51%	6	22%	40%	per measure	5.0	10.0	6.4
928	InteriorLighting	LED Fixture with Network Controls Replacing Interior T8 Fluorescent	Biz-Standard	Lodging	Retro	109	63%	69	0.00	15	\$56	100%	14%	6	22%	40%	per measure	0.9	6.4	1.2
929	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	Biz-Standard/SBDI	Lodging	Retro	358	63%	224	0.00	10	\$30	100%	40%	7	12%	40%	per measure	4.0	10.0	5.0
930	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	Biz-Standard/SBDI	Lodging	Retro	384	71%	274	0.00	15	\$36	100%	100%	7	12%	40%	per measure	5.5	5.5	7.5
931	InteriorLighting	LED Replacing Interior T12 Fluorescent (Type C)	Biz-Standard/SBDI	Lodging	Retro	257	68%	175	0.00	11	\$30	100%	70%	7	12%	40%	per measure	3.4	4.8	4.6
932	InteriorLighting	LED Fixture with Network Controls Replacing Interior T12 Fluorescent	Biz-Standard	Lodging	Retro	115	69%	80	0.00	15	\$56	100%	24%	7	12%	40%	per measure	1.0	4.3	1.5
933	InteriorLighting	Fixture Mounted Occupancy Sensor Controlling > 60 Watts	Biz-Standard/SBDI	Lodging	Retro	495	24%	119	0.00	10	\$45	100%	21%	8	59%	21%	per measure	1.4	6.6	1.8
934	InteriorLighting	Remote Mounted Occupancy Sensor Controlling > 150 Watts	Biz-Standard/SBDI	Lodging	Retro	1,213	24%	291	0.00	10	\$105	100%	22%	9	32%	21%	per measure	1.5	6.6	1.9
935	InteriorLighting	Lighting Power Density	Biz-Custom	Lodging	Retro	4	20%	1	0.00	15	\$0	100%	36%	10	80%	20%	per sq ft	2.4	6.5	3.1
936	InteriorLighting	LED Lighting Redesign/Custom	Biz-Standard	Lodging	Retro	126,345	62%	77,703	0.00	15	\$10,000	100%	85%	11	80%	20%	per project	5.6	6.6	7.5
937	InteriorLighting	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	Biz-Standard/SBDI	Lodging	Retro	255	91%	231	0.00	7	\$45	100%	40%	12	1%	80%	per measure	2.0	4.9	2.7
938	Miscellaneous	Vending Machine Controller - Non-Refrigerated	Biz-Custom	Lodging	Retro	1,278	12%	153	0.00	5	\$233	100%	6%	1	5%	30%	per measure	0.1	1.8	0.3
939	Miscellaneous	Kitchen Exhaust Hood Demand Ventilation Control System	Biz-Standard	Lodging	ROB	9,932	50%	4,966	0.00	20	\$1,180	100%	24%	2	9%	10%	per HP	3.2	13.6	4.6
940	Miscellaneous	High Efficiency Hand Dryers	Biz-Custom	Lodging	Retro	262	83%	217	0.00	10	\$483	100%	4%	3	2%	10%	per measure	0.2	5.1	0.3
941	Miscellaneous	Ozone Commercial Laundry	Biz-Custom	Lodging	Retro	2,984	25%	746	0.00	10	\$20,310	100%	0%	4	0%	2%	per measure	1.2	3.4	0.0
942	Miscellaneous	ENERGY STAR Uninterrupted Power Supply	Biz-Custom	Lodging	ROB	3,096	3%	85	0.00	15	\$59	100%	13%	5	3%	70%	per measure	1.0	7.8	1.4
943	Miscellaneous	Pool Pump w/ Variable Frequency Drive	Biz-Custom	Lodging	ROB	6,988	25%	1,747	0.00	10	\$246	100%	64%	6	0%	20%	per measure	3.6	5.7	5.0
944	Miscellaneous	Pool Pump Timer	Biz-Custom	Lodging	ROB	6,988	9%	601	0.00	10	\$100	100%	54%	7	2%	20%	per measure	3.1	5.7	4.2
945	Miscellaneous	Pool Heater Heat Pump (Uncovered)	Biz-Custom	Lodging	ROB	44,091	80%	35,273	0.00	15	\$1,000	100%	100%	8	3%	20%	per measure	24.6	24.6	31.1
946	Miscellaneous	Pool Heater Heat Pump (Covered)	Biz-Custom	Lodging	ROB	7,758	80%	6,206	0.00	15	\$1,000	100%	56%	9	0%	20%	per measure	4.3	7.8	5.9
947	Miscellaneous	High Efficiency Dryer	Biz-Custom	Lodging	ROB	9,447	4%	392	0.00	14	\$93	100%	38%	10	15%	20%	per measure	2.5	6.7	3.8
948	Miscellaneous	Miscellaneous Custom	Biz-Custom	Lodging	Retro	7	2%	0	0.00	10	\$0	100%	23%	11	14%	10%	per kWh	0.5	2.2	0.5
949	Motors	Cogged V-Belt	Biz-Custom	Lodging	Retro	29,207	3%	905	0.00	15	\$384	100%	21%	1	50%	10%	per measure	1.4	6.6	2.2
950	Motors	Pump and Fan Variable Frequency Drive Controls (Pumps)	Biz-Standard	Lodging	Retro	3,805	34%	1,290	0.00	15	\$168	100%	61%	2	100%	10%	per HP	8.4	13.8	7.2

Measure #	End-Use	Measure Name	Program	Building Type	Replacement Type	Base (Standard) Annual Electric	% Elec Savings	Per Unit Elec Savings	Per Unit Summer kW	EE EUL	Measure Cost	MAP Incentive (%)	RAP Incentive (%)	End Use Measure Group	Base Saturation	EE Saturation	Unit Descriptor	TRC Score	UCT Score	Participant Test Score
951	Motors	Power Drive Systems	Biz-Custom	Lodging	Retro	4	23%	1	0.00	15	\$0	100%	50%	2	100%	10%	per kWh	4.6	9.2	7.0
952	Motors	Switch Reluctance Motors	Biz-Custom	Lodging	Retro	56,602	31%	17,320	0.00	15	\$528	100%	50%	2	100%	1%	per measure	17.1	34.2	28.5
953	Motors	Escalators Motor Efficiency Controllers	Biz-Custom	Lodging	Retro	7,500	20%	1,500	0.00	10	\$5,000	100%	3%	3	0%	10%	per measure	0.2	6.5	0.2
954	Office_NonPC	Energy Star Printer/Copier/Fax	Biz-Custom	Lodging	ROB	551	40%	223	0.00	6	\$0	100%	40%	1	5%	90%	per measure	n/a	0.0	n/a
955	Office_NonPC	Smart Power Strip – Commercial Use	Biz-Custom	Lodging	ROB	1,086	10%	109	0.00	7	\$50	100%	20%	2	60%	17%	per measure	0.7	3.8	1.2
956	Office_NonPC	Plug Load Occupancy Sensor	Biz-Custom	Lodging	Retro	1,126	15%	169	0.00	8	\$70	100%	22%	2	60%	17%	per measure	0.9	4.3	1.4
957	Office_PC	Electrically Commutated Plug Fans in data centers	Biz-Custom	Lodging	Retro	86,783	18%	15,778	0.00	15	\$480	100%	50%	1	65%	20%	per measure	19.5	39.1	28.5
958	Office_PC	Energy Star Server	Biz-Custom	Lodging	ROB	1,621	23%	368	0.00	8	\$118	100%	28%	1	65%	25%	per measure	1.1	3.9	1.8
959	Office_PC	Server Virtualization	Biz-Custom	Lodging	Retro	2	45%	1	0.00	8	\$0	100%	23%	1	65%	25%	per kWh	0.6	2.8	1.5
960	Office_PC	High Efficiency CRAC unit	Biz-Custom	Lodging	ROB	541	30%	162	0.00	15	\$63	100%	23%	2	65%	20%	per measure	1.6	6.9	2.4
961	Office_PC	Computer Room Air Conditioner Economizer	Biz-Custom	Lodging	Retro	764	47%	358	0.00	15	\$82	100%	39%	2	65%	20%	per measure	1.8	4.7	4.1
962	Office_PC	Data Center Hot/Cold Aisle Configuration	Biz-Custom	Lodging	Retro	4	25%	1	0.00	15	\$0	100%	23%	3	3%	10%	per kWh	1.5	6.6	2.4
963	Office_PC	Energy Star Laptop	Biz-Custom	Lodging	ROB	126	33%	41	0.00	4	\$0	100%	40%	4	11%	85%	per measure	n/a	0.0	n/a
964	Office_PC	Energy Star Monitor	Biz-Custom	Lodging	ROB	72	21%	15	0.00	4	\$0	100%	40%	5	25%	85%	per measure	n/a	0.0	n/a
965	Refrigeration	Strip Curtains	Biz-Custom	Lodging	Retro	0	0%	0	0.00	4	\$0	100%	0%	1	10%	30%	per sq ft	n/a	0.0	n/a
966	Refrigeration	Bare Suction Line	Biz-Custom	Lodging	Retro	23	93%	21	0.00	15	\$4	100%	47%	2	0%	50%	per measure	3.1	6.6	4.9
967	Refrigeration	Floating Head Pressure Controls	Biz-Custom	Lodging	Retro	1,112	25%	278	0.00	15	\$431	100%	6%	3	7%	25%	per HP	0.3	4.7	0.6
968	Refrigeration	Saturated Suction Controls	Biz-Custom	Lodging	Retro	831	50%	416	0.00	15	\$559	100%	7%	4	2%	10%	per measure	0.8	11.9	0.7
969	Refrigeration	Compressor Retrofit	Biz-Custom	Lodging	Retro	813	20%	163	0.00	15	\$477	100%	3%	5	23%	25%	per measure	0.4	12.0	0.3
970	Refrigeration	Electronically Commutated (EC) Walk-In Evaporator Fan Motor	Biz-Standard	Lodging	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	6	6%	80%	per measure	3.1	9.9	4.8
971	Refrigeration	Evaporator Fan Motor Controls	Biz-Custom	Lodging	Retro	2,236	32%	716	0.00	15	\$155	100%	42%	7	6%	25%	per measure	1.9	4.7	4.4
972	Refrigeration	Variable Speed Condenser Fan	Biz-Custom	Lodging	Retro	2,960	50%	1,480	0.00	15	\$1,170	100%	11%	8	9%	25%	per HP	0.5	4.7	1.2
973	Refrigeration	Refrigeration Economizer	Biz-Custom	Lodging	Retro	7	2%	0	0.00	10	\$0	100%	50%	9	32%	10%	per kWh	1.7	3.4	1.1
974	Refrigeration	Anti-Sweat Heater Controls MT	Biz-Standard	Lodging	Retro	579	59%	338	0.00	10	\$151	100%	37%	10	11%	25%	per door	1.0	2.7	1.7
975	Refrigeration	Display Case Door Retrofit, Medium Temp	Biz-Custom	Lodging	Retro	1,584	36%	578	0.00	12	\$686	100%	8%	11	3%	25%	per door	0.5	6.2	0.7
976	Refrigeration	Electronically Commutated (EC) Reach-In Evaporator Fan Motor	Biz-Standard	Lodging	Retro	2,884	55%	1,586	0.00	15	\$305	100%	31%	12	2%	80%	per measure	3.1	9.9	4.8
977	Refrigeration	Q-Sync Motor for Walk-In and Reach-In Evaporator Fan Motor	Biz-Custom	Lodging	Retro	441	34%	149	0.00	10	\$90	100%	15%	13	2%	2%	per measure	0.8	5.1	1.2
978	Refrigeration	Energy Star Reach-In Refrigerator, Glass Doors	Biz-Standard	Lodging	ROB	2,140	29%	629	0.00	12	\$1,239	100%	9%	14	11%	54%	per door	0.3	2.9	0.5
979	Refrigeration	Energy Star Reach-In Refrigerator, Solid Doors	Biz-Standard	Lodging	ROB	1,410	20%	281	0.00	12	\$1,211	100%	9%	14	11%	54%	per door	0.1	1.3	0.3
980	Refrigeration	Anti-Sweat Heater Controls LT	Biz-Standard	Lodging	Retro	2,016	68%	1,361	0.00	10	\$151	100%	51%	15	4%	25%	per door	4.1	8.1	6.0
981	Refrigeration	Display Case Door Retrofit, Low Temp	Biz-Custom	Lodging	Retro	2,922	50%	1,453	0.00	12	\$686	100%	19%	16	4%	25%	per door	1.2	6.2	1.7
982	Refrigeration	Energy Star Reach-In Freezer, Glass Doors	Biz-Standard	Lodging	ROB	6,374	20%	1,275	0.00	12	\$1,651	100%	7%	17	4%	54%	per door	0.4	5.5	0.6
983	Refrigeration	Energy Star Reach-In Freezer, Solid Doors	Biz-Standard	Lodging	ROB	4,522	7%	305	0.00	12	\$1,521	100%	7%	17	4%	54%	per door	0.1	1.3	0.2
984	Refrigeration	Refrigeration - Custom	Biz-Custom	Lodging	ROB	7	2%	0	0.00	10	\$0	100%	23%	18	90%	25%	per kWh	0.4	1.8	0.5
985	Refrigeration	Retro-commissioning_Refrigerator Optimization	Biz-Custom RCx	Lodging	Retro	5	21%	1	0.00	5	\$0	100%	48%	19	90%	25%	per kWh	1.1	2.3	1.9
986	Refrigeration	Energy Star Ice Machine	Biz-Custom	Lodging	ROB	12,461	13%	1,630	0.00	10	\$222	100%	66%	20	10%	44%	per measure	3.2	4.8	5.2
987	Refrigeration	ESTAR Refrigerated Vending Machine	Biz-Custom	Lodging	ROB	1,278	12%	153	0.00	14	\$500	100%	3%	21	4%	30%	per measure	0.2	6.6	0.3
988	Refrigeration	Vending Machine Controller - Refrigerated	Biz-Custom	Lodging	Retro	1,278	17%	213	0.00	5	\$245	100%	8%	22	4%	30%	per measure	0.1	1.7	0.4
989	Refrigeration	LED Refrigerated Display Case Lighting Average 6W/LF	Biz-Custom	Lodging	Retro	115	74%	84	0.00	9	\$11	100%	50%	23	7%	35%	per linear ft	3.9	7.8	4.8
990	Refrigeration	LED Refrigerated Display Case Lighting Controls	Biz-Custom	Lodging	Retro	522	27%	141	0.00	10	\$56	100%	23%	24	7%	18%	per measure	1.4	6.2	1.8
991	Ventilation	Demand Controlled Ventilation	Biz-Standard	Lodging	Retro	2,639	20%	528	0.00	15	\$227	100%	63%	1	100%	22%	per measure	2.7	2.7	2.6
992	Ventilation	Pump and Fan Variable Frequency Drive Controls (Fans)	Biz-Standard	Lodging	Retro	2,166	43%	940	0.00	15	\$168	100%	61%	2	100%	22%	per HP	6.1	10.0	5.4
993	Ventilation	High Volume Low Speed Fan, 20	Biz-Standard	Lodging	Retro	19,919	82%	16,287	0.00	15	\$4,130	100%	20%	3	5%	30%	per measure	3.2	15.6	3.6
994	Ventilation	High Volume Low Speed Fan, 22	Biz-Standard	Lodging	Retro	21,909	83%	18,277	0.00	15	\$4,190	100%	27%	4	5%	30%	per measure	3.5	13.1	4.0
995	Ventilation	High Volume Low Speed Fan, 24	Biz-Standard	Lodging	Retro	23,903	82%	19,579	0.00	15	\$4,225	100%	32%	5	5%	30%	per measure	3.7	11.7	4.3
996	WholeBldg_HVAC	HVAC - Energy Management System	Biz-Custom	Lodging	Retro	13	8%	1	0.00	15	\$0	100%	34%	1	15%	20%	per kWh	2.8	8.3	2.5
997	WholeBldg_HVAC	Guest room energy management system	Biz-Custom	Lodging	Retro	7,167	19%	1,382	0.00	15	\$260	100%	50%	2	85%	20%	per measure	5.9	11.9	5.0
998	WholeBldg_HVAC	Retro-commissioning_Bld Optimization	Biz-Custom RCx	Lodging	Retro	7	15%	1	0.00	5	\$0	100%	100%	3	100%	0%	per kWh	3.7	3.7	3.6
999	WholeBuilding	WholeBldg - Com RET	Biz-Custom	Lodging	Retro	7	15%	1	0.00	12	\$0	100%	38%	1	80%	0%	per kWh	1.5	3.9	2.2
1000	WholeBuilding	WholeBldg - Custom (Other)	Biz-Custom	Lodging	Retro	5	20%	1	0.00	12	\$0	100%	38%	2	80%	0%	per kWh	1.5	3.9	2.2
1001	WholeBuilding	Power Distribution Equipment Upgrades (Transformers)	Biz-Custom	Lodging	Retro	1,150	1%	6	0.00	30	\$8	100%	13%	3	100%	20%	per measure	1.0	8.1	1.2
1002	WholeBldg_NC	WholeBldg - Com NC	Biz-Custom	Lodging	NC	4	25%	1	0.00	12	\$0	100%	100%	1	100%	60%	per kWh	7.6	7.6	9.9
1003	Behavioral	COM Competitions	Biz-Custom	Lodging	Retro	53	2%	1	0.00	2	\$0	100%	48%	1	100%	0%	per kWh	1.6	3.2	3.5
1004	Behavioral	Business Energy Reports	Biz-Custom	Lodging	Retro	313	0%	1	0.00	2	\$0	100%	40%	1	100%	0%	per kWh	0.3	0.8	1.0
1005	Behavioral	Building Benchmarking	Biz-Custom	Lodging	Retro	263	0%	1	0.00	2	\$0	100%	36%	1	100%	0%	per kWh	0.3	0.8	0.9
1006	Behavioral	Strategic Energy Management	Biz-Custom SEM	Lodging	Retro	0	0%	0	0.00	5	\$0	100%	0%	1	100%	0%	per kWh	n/a	0.0	n/a
1007	Behavioral	BEIMS	Biz-Custom	Lodging	Retro	20	5%	1	0.00	2	\$0	100%	18%	1	100%	2%	per kWh	0.1	0.8	0.5
1008	Behavioral	Building Operator Certification	Biz-Custom	Lodging	Retro	12	3%	0	0.00	3	\$0	100%	11%	1	100%	2%	per kWh	0.2	2.1	0.4
1009	CompressedAir	Retro-commissioning_Compressed Air Optimization	Biz-Custom RCx	Retail	Retro	5	21%	1	0.00	5	\$0	100%	45%	1	100%	20%	per kWh	1.2	2.5	1.9
1010	CompressedAir	Compressed Air Leak Repair	Biz-Custom	Retail	Retro	6	17%	1	0.00	5	\$0	100%	50%	1	100%	39%	per kWh	3.0	6.1	4.5
1011	CompressedAir	Efficient Air Compressors (VSD)	Biz-Standard	Retail	ROB	4,748	21%	987	0.00	10	\$1,573	100%	5%	2	100%	20%	per HP	0.3	5.3	0.4
1012	CompressedAir	AODD Pump Controls	Biz-Custom	Retail	Retro	103,919	35%	36,372	0.00	10	\$1,150	100%	50%	3	100%	50%	per measure	14.5	29.0	19.9
1013	CompressedAir	No Loss Condensate Drain	Biz-Standard	Retail	Retro	103,919	2%	2,320	0.00	13	\$700	100%	29%	4	100%	5%	per measure	1.9	6.6	2.8
1014	CompressedAir	Efficient Air Nozzles	Biz-Standard	Retail	Retro	2,260	50%	1,130	0.00	15	\$77	100%	97%	5	5%	20%	per measure	9.3	9.5	13.5
1015	CompressedAir	Compressed Air - Custom	Biz-Custom	Retail	Retro	5	20%	1	0.00	10	\$0	100%	47%	6	100%	20%	per kWh	2.2	4.6	3.4
1016	Cooking	Commercial Combination Oven (Electric)	Biz-Custom	Retail	ROB	23,958	38%	9,058	0.00	12	\$4,300	100%	23%	1	18%	53%	per measure	1.3	5.7	1.7
1017	Cooking	Commercial Electric Convection Oven	Biz-Custom	Retail	ROB	9,839	11%	1,065	0.00	12	\$0	100%	40%	1	18%	53%	per measure	n/a	0.0	n/a