

# Residential and Business Deemed Savings Table

## MEEIA 2025-27<sup>1</sup>



1. MEEIA 2025-27 Demand-Side Management Plan – refers to the Company's "MEEIA Energy Efficiency Plan" as approved in File No. EO-2023-0136.



BUSINESS PRESCRIPTIVE MEASURES

The values in the cells highlighted in this color are values used in the planning process of the portfolio. TRM allows delivery program design to use actual values for these cells, or a default value if actuals are not available.

Cells highlighted in this color are calculated variables

Lighting

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
800050_2024_12	C&I (only IE or BSS)	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	20.75	Lighting BUS	0.0001899635	0.0004068	10.0	\$3.26	per measure
800100_2024_12	C&I (only IE or BSS)	LED 7-20 Watt Lamp Replacing Interior Halogen S3-70 Watt Lamp	77.77	Lighting BUS	0.0001899635	0.015246	10.0	\$3.26	per measure
800150_2024_12	C&I (only IE or BSS)	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	27.67	Lighting BUS	0.0001899635	0.005424	10.0	\$3.26	per measure
800200_2024_12	C&I (only IE or BSS)	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	175.07	Lighting BUS	0.0001899635	0.034321	10.0	\$3.26	per measure
800250_2024_12	C&I (only IE or BSS)	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	40.34	Lighting BUS	0.0001899635	0.007908	10.0	\$3.26	per measure
800300_2024_12	C&I (only IE or BSS)	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	716.61	Lighting BUS	0.0001899635	0.140486	15.0	\$68.00	per measure
800350_2024_12	C&I (only IE or BSS)	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	798.17	Lighting BUS	0.0001899635	0.156475	15.0	\$60.00	per measure
800400_2024_12	C&I (only IE or BSS)	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	983.73	Lighting BUS	0.0001899635	0.192853	15.0	\$156.00	per measure
800450_2024_12	C&I (only IE or BSS)	LED <=80 Watt Lamp or Fixture Replacing Exterior <24/7 HID 100-175 Watt Lamp or Fixture	418.23	Ext Lighting BUS	0.000056160	0.0002349	15.0	\$60.00	per measure
800500_2024_12	C&I (only IE or BSS)	LED 62 - 130 Watt Lamp or Fixture Replacing Exterior <24/7 HID 176-300 Watt Lamp or Fixture	796.46	Ext Lighting BUS	0.0000056160	0.004473	15.0	\$129.00	per measure
800550_2024_12	C&I (only IE or BSS)	LED 85 - 225 Watt Lamp or Fixture Replacing Exterior <24/7 HID 301-500 Watt Lamp or Fixture	1,457.44	Ext Lighting BUS	0.0000056160	0.008185	15.0	\$156.00	per measure
800600_2024_12	C&I (only IE or BSS)	LED <=80 Watt Lamp or Fixture Replacing Exterior 24/7 HID 100-175 Watt Lamp or Fixture Misc.	656.80	Miscellaneous BUS	0.0001379439	0.090602	15.0	\$60.00	per measure
800650_2024_12	C&I (only IE or BSS)	LED 62 - 130 Watt Lamp or Fixture Replacing Exterior 24/7 HID 176-300 Watt Lamp or Fixture Misc.	1,389.33	Miscellaneous BUS	0.0001379439	0.191650	15.0	\$129.00	per measure
800700_2024_12	C&I (only IE or BSS)	LED 85 - 225 Watt Lamp or Fixture Replacing Exterior 24/7 HID 301-500 Watt Lamp or Fixture Misc.	2,490.86	Miscellaneous BUS	0.0001379439	0.343599	15.0	\$156.00	per measure
800750_2024_12	C&I (only IE or BSS)	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	243.01	Lighting BUS	0.0001899635	0.047640	7.0	\$45.25	per measure
800800_2024_12	C&I (only IE or BSS)	LED Replacing Interior T5 Fluorescent (Type A / Hybrid)	290.28	Lighting BUS	0.0001899635	0.056907	10.0	\$13.00	per measure
800801_2024_12	C&I (only IE or BSS)	LED Replacing Interior T5 Fluorescent (Type B, Kits, and Fixtures)	473.41	Lighting BUS	0.0001899635	0.091268	15.0	\$13.00	per measure
800802_2024_12	C&I (only IE or BSS)	LED Replacing Interior T5 Fluorescent (Type C)	286.79	Lighting BUS	0.0001899635	0.056223	11.0	\$13.00	per measure
800850_2024_12	C&I (only IE or BSS)	LED Replacing Interior T8 Fluorescent (Type A / Hybrid)	220.32	Lighting BUS	0.0001899635	0.043192	10.0	\$13.00	per measure
800851_2024_12	C&I (only IE or BSS)	LED Replacing Interior T8 Fluorescent (Type B, Kits, and Fixtures)	200.02	Lighting BUS	0.0001899635	0.039212	15.0	\$13.00	per measure
800852_2024_12	C&I (only IE or BSS)	LED Replacing Interior T8 Fluorescent (Type C)	169.72	Lighting BUS	0.0001899635	0.033272	11.0	\$13.00	per measure
800900_2024_12	C&I (only IE or BSS)	LED Replacing Interior T12 Fluorescent (Type A / Hybrid)	186.88	Lighting BUS	0.0001899635	0.036636	10.0	\$13.00	per measure
800901_2024_12	C&I (only IE or BSS)	LED Replacing Interior T12 Fluorescent (Type B, Kits, and Fixtures)	254.96	Lighting BUS	0.0001899635	0.040983	15.0	\$13.00	per measure
800902_2024_12	C&I (only IE or BSS)	LED Replacing Interior T12 Fluorescent (Type C)	266.50	Lighting BUS	0.0001899635	0.052245	11.0	\$13.00	per measure
800950_2024_12	C&I (only IE or BSS)	LED Specialty Lamp	94.51	Lighting BUS	0.0001899635	0.018528	10.0	\$11.94	per measure
800980_2024_12	C&I (only IE or BSS)	LED Lighting Redesign	73,003.89	Lighting BUS	0.0001899635	14.311853	15.0	\$10,000.00	per project

Lighting - Lighting Power Density (LPD)

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
800990_2024_12	C&I (only IE or BSS)	Lighting Power Density	0.67	Lighting BUS	0.000131	0.000131	15.0	\$0.22	per sqft

Lighting Controls

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings per unit	End Use	kW Factor	kW per unit	EUL	Inc. Cost	Units	Inc. Cost A	Units A	Inc. Cost B	Units B
801010_2024_12	C&I	Fixture Mounted Occupancy Sensor Controlling > 60 Watts, <200 Watts	150	Lighting BUS	0.0001899635	0.029436	10.0	\$65.00	per measure				
801020_2024_12	C&I	Remote Mounted Occupancy Sensor Controlling > 150 Watts	546	Lighting BUS	0.0001899635	0.107025	10.0	\$105.00	per measure				
801025_2024_12	C&I	High End TRIM with Network Lighting Controls	422	Lighting BUS	0.0001899635	0.0828	15.0	\$747	per kW controlled	\$0.59	per building sq	\$ 0.79	W/SF
801030_2024_12	C&I	High End TRIM with Network Lighting Controls installed with Luminaire Level Lighting Control LED Fixture	1,075	Lighting BUS	0.0001899635	0.210763	15.0	\$663	per kW controlled	\$53.00	per fixture	\$ 80.00	W/fixture
801035_2024_12	C&I	NLC, LLC Additional Control Strategy (Daylighting,dimming,personal level control)	384	Lighting BUS	0.0001899635	0.075272	15.0	\$100	per kW controlled	\$100.00	program ming per 1000W		

ESF =Energy Savings factor for fixture and remove controls (non NLC, LLC),(represents the percentage reduction to the operating Hours from the non-controlled baseline lighting system). Determined on a site-specific basis or use 24% as default value

Lighting - LED with Luminaire Level Lighting Controls (LLLC)

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
801243_2024_12	C&I	LED Fixture or Kit with LLLC controls replacing interior T5 (per watt reduced)	4.35	Lighting BUS	0.0001899635	0.000853	15.0	\$2.57	watt reduced
801245_2024_12	C&I	LED Fixture or Kit with LLLC controls replacing interior T8 (per watt reduced)	4.35	Lighting BUS	0.0001899635	0.000853	15.0	\$3.04	watt reduced
801247_2024_12	C&I	LED Fixture or Kit with LLLC controls replacing interior T12 (per watt reduced) - Before midlife baseline shift	4.35	Lighting BUS	0.0001899635	0.000853	5.0	\$1.66	watt reduced
801249_2024_12	C&I	LED Fixture or Kit with LLLC controls replacing interior T12 (per watt reduced) - After midlife baseline shift	4.35	Lighting BUS	0.0001899635	0.000853	10.0	\$0.00	watt reduced
801251_2024_12	C&I	LED Fixture or Kit with LLLC controls replacing interior high bay/low bay (per watt reduced)	5.17	Lighting BUS	0.0001899635	0.001014	15.0	\$0.65	watt reduced

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Commercial Solid and Glass Door Refrigerators & Freezers

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
801250_2024_12	C&I	0 < V < 15 - Vertical Closed - Solid Door Refrigerator	330	Refrigeration BUS	0.0001357383	0.0448	12.0	\$150.00	per measure
801300_2024_12	C&I	15 ≤ V < 30 - Vertical Closed - Solid Door Refrigerator	395	Refrigeration BUS	0.0001357383	0.0536	12.0	\$200.00	per measure
801350_2024_12	C&I	30 ≤ V < 50 - Vertical Closed - Solid Door Refrigerator	454	Refrigeration BUS	0.0001357383	0.0616	12.0	\$250.00	per measure
801400_2024_12	C&I	V ≥ 50 - Vertical Closed - Solid Door Refrigerator	639	Refrigeration BUS	0.0001357383	0.0868	12.0	\$350.00	per measure
801450_2024_12	C&I	0 < V < 15 - Vertical Closed - Glass Door Refrigerator	198	Refrigeration BUS	0.0001357383	0.0269	12.0	\$50.00	per measure
801500_2024_12	C&I	15 ≤ V < 30 - Vertical Closed - Glass Door Refrigerator	377	Refrigeration BUS	0.0001357383	0.0512	12.0	\$200.00	per measure
801550_2024_12	C&I	30 ≤ V < 50 - Vertical Closed - Glass Door Refrigerator	706	Refrigeration BUS	0.0001357383	0.0959	12.0	\$450.00	per measure
801600_2024_12	C&I	V ≥ 50 - Vertical Closed - Glass Door Refrigerator	1,050	Refrigeration BUS	0.0001357383	0.1439	12.0	\$700.00	per measure
801700_2024_12	C&I	0 < V < 15 - Vertical Closed - Solid Door Freezer	284	Refrigeration BUS	0.0001357383	0.0386	12.0	\$100.00	per measure
801750_2024_12	C&I	15 ≤ V < 30 - Vertical Closed - Solid Door Freezer	575	Refrigeration BUS	0.0001357383	0.0781	12.0	\$350.00	per measure
801800_2024_12	C&I	30 ≤ V < 50 - Vertical Closed - Solid Door Freezer	1,118	Refrigeration BUS	0.0001357383	0.1517	12.0	\$500.00	per measure
801850_2024_12	C&I	V ≥ 50 - Vertical Closed - Solid Door Freezer	1,504	Refrigeration BUS	0.0001357383	0.2042	12.0	\$600.00	per measure
801900_2024_12	C&I	0 < V < 15 - Vertical Closed - Glass Door Freezer	559	Refrigeration BUS	0.0001357383	0.0759	12.0	\$50.00	per measure
801950_2024_12	C&I	15 ≤ V < 30 - Vertical Closed - Glass Door Freezer	975	Refrigeration BUS	0.0001357383	0.1323	12.0	\$100.00	per measure
802000_2024_12	C&I	30 ≤ V < 50 - Vertical Closed - Glass Door Freezer	1,579	Refrigeration BUS	0.0001357383	0.2144	12.0	\$300.00	per measure
802050_2024_12	C&I	V ≥ 50 - Vertical Closed - Glass Door Freezer	3,149	Refrigeration BUS	0.0001357383	0.4275	12.0	\$500.00	per measure
801650_2024_12	C&I	Horizontal Closed - Solid Door Refrigerator - All Volumes	290	Refrigeration BUS	0.0001357383	0.0394	12.0	\$0.00	per measure
801655_2024_12	C&I	Horizontal Closed - Glass Door Refrigerator - All Volumes	172	Refrigeration BUS	0.0001357383	0.0234	12.0	\$0.00	per measure
802100_2024_12	C&I	Horizontal Closed - Solid Door Freezer - All Volumes	229	Refrigeration BUS	0.0001357383	0.0310	12.0	\$0.00	per measure

Refrigerators & Freezers Controls

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per door)	End Use	kW Factor	kW	EUL	Inc. Cost (per door)	Units
802150_2024_12	C&I	Anti-Sweat Heater Controls Refrigerator	668.1	Refrigeration BUS	0.0001357383	0.090692	12.0	\$150.00	per door
802200_2024_12	C&I	Anti-Sweat Heater Controls Freezer	770.9	Refrigeration BUS	0.0001357383	0.104645	12.0	\$150.00	per door

Heat Pump Water Heaters

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
802250_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency 2.9-14.6 kW (10 to 50 MBH)	18,785	Water Heating BUS	0.0001811545	3.4031	15.0	\$4,000	per measure
802300_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency 14.7-29.3 kW (50 to 100 MBH)	48,313	Water Heating BUS	0.0001811545	8.8608	15.0	\$7,000	per measure
802350_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency 29.4-87.3 kW (100 to 300 MBH)	129,088	Water Heating BUS	0.0001811545	23.3848	15.0	\$10,000	per measure
802400_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency 88-146.5 kW (300 to 500 MBH)	255,265	Water Heating BUS	0.0001811545	46.2424	15.0	\$14,000	per measure
802450_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency >146.6 kW (above 500 MBH)	382,898	Water Heating BUS	0.0001811545	69.3637	15.0	\$18,000	per measure
802455_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency, ≤55 gal, medium draw	3,363	Water Heating BUS	0.0001811545	0.6093	15.0	\$18,000	per measure
802460_2024_12	C&I	Heat Pump Water Heater replacing 98% Efficiency, >55 gal and ≤ 120 gal, medium draw	5,045	Water Heating BUS	0.0001811545	0.9139	15.0	\$18,000	per measure

Electric resistance efficiency Manufacturer data Consumption per stored gallon x Capacity, CADMUS Study MD 40" ground temp

SEER 13.4 Assumed if ele Conditioned space

Heat Pump Pool Heater

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
802500_2024_12	C&I	Pool Heater Heat Pump (Uncovered)	33,284	Water Heating BUS	0.0001811545	6.030	15.00	\$1,000	per measure
802550_2024_12	C&I	Pool Heater Heat Pump (Covered)	5,857	Water Heating BUS	0.0001811545	1.061	15.00	\$1,000	per measure

Assumed size Electric Resistance AHRI data, all 3 phase heaters

Pool Pump

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
802600_2019_12	C&I	Pool Pump w/ Variable Frequency Drive per HP	1,747	Motors BUS	0.0001379439	0.240988	10.00	\$246	per HP
802650_2024_12	C&I	Pool Pump Timer per HP	301	Motors BUS	0.0001379439	0.041471	10.00	\$100	per HP

Steam Cookers

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units	Idle_base	Idle_EE	Cooking_base	Cooking_EE	Preheat_base	Preheat_EE	Base	EE	kWh annual check
802700_2024_12	C&I	3 Pan ENERGY STAR Steam Cooker	7,383	Cooking BUS	0.0001988949	1.475876	12.0	\$2,000.00	per measure	25,814	9,811	10,267	6,160	1,776	1,671.7	37,857	17,642	7,383.3
802750_2024_12	C&I	4 Pan ENERGY STAR Steam Cooker	8,569	Cooking BUS	0.0001988949	1.712809	12.0	\$2,000.00	per measure	32,961	13,712	10,267	6,160	1,776	1,671.7	45,004	21,544	8,569
802800_2024_12	C&I	5 Pan ENERGY STAR Steam Cooker	9,659	Cooking BUS	0.0001988949	1.937577	12.0	\$2,000.00	per measure	40,005	17,676	10,267	6,160	1,776	1,671.7	52,047	25,309	9,659
802850_2024_12	C&I	6 Pan ENERGY STAR Steam Cooker	10,822	Cooking BUS	0.0001988949	2.162373	12.0	\$2,000.00	per measure	46,997	21,579	10,267	6,160	1,776	1,671.7	59,040	29,411	10,822
802855_2024_12	C&I	10 Pan ENERGY STAR Steam Cooker	16,564	Cooking BUS	0.0001988949	3.311083	12.0	\$2,000.00	per measure	74,760	33,621	10,267	6,160	1,776	1,671.7	86,803	41,453	16,564

$\Delta kWh = (\Delta kWh_{Idle Energy} + \Delta kWh_{Cooking Energy} + \Delta kWh_{Preheat Energy}) \times Days/1000$

CFS Equipment Calculator Steam generator CFS Equipment Calculator CFS Equipment Calculator CFS Equipment Calculator CFS Equipment Calculator CFS Equipment Calculator CFS Equipment Calculator CFS Equipment Calculator

Holding Cabinet

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
802900_2024_12	C&I	ENERGY STAR Hot Holding Cabinet (0 < V < 13)	326	Cooking BUS	0.0001988949	0.065164	12.00	\$1,000.00	per measure
802950_2024_12	C&I	ENERGY STAR Hot Holding Cabinet (13 ≤ V < 28)	1,677	Cooking BUS	0.0001988949	0.335124	12.00	\$1,000.00	per measure
803000_2024_12	C&I	ENERGY STAR Hot Holding Cabinet (28 ≤ V)	2,904	Cooking BUS	0.0001988949	0.580553	12.00	\$1,000.00	per measure

ENERGY STAR CFS Equipment calculator base is 30W per cubic ft.

BUSINESS PRESCRIPTIVE MEASURES

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HVAC

Measure Reference No.	Program/Channel	Measure	Total kWh Annual Savings per ton	Cooling kWh Annual Savings (per Ton)	Heating kWh Annual Savings (per ton)	End Use	End Use	kW Factor	kW	EUL	Inc. Cost	Units
803050_2024_12	C&I	Learning Thermostat, cooling and electric heat, per ton	0.0	0.0	0.0	Cooling BUS	Heating BUS	0.0009106840	0.000000	9.00	106	per ton
803060_2024_12	C&I	Learning Thermostat, cooling, per ton	0.0	0.0	0.0	Cooling BUS	Heating BUS	0.0009106840	0.000000	9.00	106	per ton

St Louis all building types  
Under 65k BTU/h Federal stonaverage Cadmus Study St Louis all building Electric resistance and Heat Pump avg Cadmus Study Ameren MO DSM 2019 to 2024 self report

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
803100_2024_12	C&I	VFD on Chilled Water Pump >= 1HP, per Hp	1,362.3	Cooling BUS	0.0009106840	1.240643	15.00	\$360.00	per Hp
803150_2024_12	C&I	VFD on Hot Water Pump >= 1HP	1,181.0	HVAC BUS	0.0004439830	0.524348	15.00	\$360.00	per Hp
803155_2024_12	C&I	VFD on Condenser Water Pump >= 1HP	1,362.3	Cooling BUS	0.0009106840	1.240643	15.00	\$360.00	per Hp
803160_2024_12	C&I	VFD on Cooling Tower Fan >= 1HP	1,910.3	HVAC BUS	0.0004439830	0.848141	15.00	\$360.00	per Hp

TRM 2.8.5 table Annual H TRM 2.8.5 table ESP for Incremental Cost = 300x HP +\$1500

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
803200_2024_12	C&I	VFD on HVAC Fans >= 1HP	939.75	HVAC BUS	0.0004439830	0.417233	15.00	\$360.00	per Hp

Incremental cost = 300x HP +\$1500

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings per ton	End Use	kW Factor	kW	EUL	Inc. Cost	Units
803250_2024_12	C&I	Single Package or Split System Unitary AC, DX 135 - 240kbtu	118	Cooling BUS	0.0009106840	0.107215	15.0	\$218.40	per ton
803300_2024_12	C&I	Single Package or Split System Unitary AC, DX 240 - 760kBTU/h	179	Cooling BUS	0.0009106840	0.163267	15.0	\$305.76	per ton
803350_2024_12	C&I	Single Package or Split System Unitary AC, DX 65 - 135kBTU/h	102	Cooling BUS	0.0009106840	0.093290	15.0	\$203.84	per ton
803400_2024_12	C&I	Single Package or Split System Unitary AC, DX >760kBTU/h	10	Cooling BUS	0.0009106840	0.009426	15.0	\$10.40	per ton
803450_2024_12	C&I	Single Package or Split System Unitary AC, DX <65kBTU/h	150	Cooling BUS	0.0009106840	0.136384	15.0	\$263.12	per ton

2023 DOE Federal Efficiency <65kBTU/h certified Energy Star average 15.93 light commercial; AHRI directory weighted average for 240 to 760 kBTU/h is IEER 15.94, 65 to 135 kBTU/h is IEER 16.5, 135 to 240 kBTU/h is IEER 16.1

Measure Reference No.	Program/Channel	Measure (Geothermal, Water Source & Air Source Heat Pumps)	Total kWh Annual Savings	Cooling kWh Annual Savings (per ton)	Heating kWh Annual Savings (per ton)	End Use	End Use	kW Factor	kW	EUL	Inc. Cost (per ton)	Units
803500_2024_12	C&I	GSHP	526.24	430.30	95.34	Cooling BUS	Heating BUS	0.0009106840	0.392414	15.0	\$416.00	per ton
803570_2024_12	C&I	WSHP <17 kBTU/h per ton	291.85	253.32	38.53	Cooling BUS	Heating BUS	0.0009106840	0.230694	15.0	\$208.00	per ton
803575_2024_12	C&I	WSHP >17 kBTU/h and <65 kBTU/h per ton	228.12	189.59	38.53	Cooling BUS	Heating BUS	0.0009106840	0.172657	15.0	\$208.00	per ton
803580_2024_12	C&I	WSHP >65kBTU/h and <135 kBTU/h per ton	228.12	189.59	38.53	Cooling BUS	Heating BUS	0.0009106840	0.172657	15.0	\$208.00	per ton
803600_2024_12	C&I	ASHP >65kBTU/h and <135 kBTU/h per ton	169.55	117.34	52.21	Cooling BUS	Heating BUS	0.0009106840	0.106860	15.0	\$214.24	per ton
803650_2024_12	C&I	ASHP >135kBTU/h and <240 kBTU/h per ton	204.58	168.14	36.44	Cooling BUS	Heating BUS	0.0009106840	0.153122	15.0	\$297.44	per ton
803700_2024_12	C&I	ASHP >240kBTU/h per ton	386.42	327.65	58.77	Cooling BUS	Heating BUS	0.0009106840	0.298386	15.0	\$416.00	per ton
803750_2024_12	C&I	ASHP <65kBTU/h per ton	223.37	158.14	65.23	Cooling BUS	Heating BUS	0.0009106840	0.144016	15.0	\$280.80	per ton

2023 DOE Federal Standard 2023 DOE Federal Stand 2024 AHRI weighted average and 2024 ENERGY 2023 DOE Federal Stand 2024 AHRI weight 2023 DOE Federal 2024 AHRI weighted average and 2024 ENERGY STAR

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings (per ton)	End Use	kW Factor	kW	EUL	Inc. Cost (per ton)	Units
803800_2024_12	C&I	Air Cooled Chiller	321.48	Cooling BUS	0.0009106840	0.292767	23.0	\$854.83	per ton
803810_2024_12	C&I	Water Cooled Chiller	113.72	Cooling BUS	0.0009106840	0.103563	23.0	\$378.00	per ton

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings (per ton)	End Use	kW Factor	kW	EUL	Inc. Cost (per ton)	Units
803820_2024_12	C&I	Air Cooled Chiller Tune up	50.59	Cooling BUS	0.0009106840	0.046072	5.0	\$5.00	per ton
803825_2024_12	C&I	Water Cooled Chiller Tune up	30.54	Cooling BUS	0.0009106840	0.027812	5.0	\$5.00	per ton

Measure Reference No.	Program/Channel	Measure	Total kWh Annual Savings kWh per lb/hr	Cooling, dehumidification savings kWh per lb/hr	Heating Savings kWh per lb/hr (normalized from kBTU/h)	End Use	End Use	kW Factor	kW	EUL	Inc. Cost	Units
803835_2024_12	C&I	DOAS, dehumidification	72		72	Cooling BUS		0.0009106840	0.065862	20.0	\$111.11	lb/hr
803837_2024_12	C&I	DOAS, dehumidification, latent cooling, sensible cooling	103		103	Cooling BUS		0.0009106840	0.093516	20.0	\$111.11	lb/hr
803839_2024_12	C&I	DOAS, dehumidification, latent cooling, sensible cooling, ASHP heating 17F rated	155		103	Cooling BUS	Heating BUS	0.0009106840	0.093516	20.0	\$111.11	lb/hr
803841_2024_12	C&I	DOAS, VRS, dehumidification	72		72	Cooling BUS		0.0009106840	0.065862	20.0	\$255.56	lb/hr
803843_2024_12	C&I	DOAS, VRS, dehumidification, latent cooling, sensible cooling	103		103	Cooling BUS		0.0009106840	0.093516	20.0	\$255.56	lb/hr
803845_2024_12	C&I	DOAS, VRS, dehumidification, latent cooling, sensible cooling, ASHP heating 17F rated	170		103	Cooling BUS	Heating BUS	0.0009106840	0.093516	20.0	\$255.56	lb/hr

\*Dedicated Outdoor Systems (DOAS)

1ton 400 CFM

Appliances

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
803850_2024_12	C&I	Clothes Washer (Electric DHW; Electric Dryer)	679	Miscellaneous BUS	0.0001379439	0.09337	11.00	\$200.00	per measure
803900_2024_12	C&I	Clothes Washer (Gas DHW; Electric Dryer)	93	Miscellaneous BUS	0.0001379439	0.0127	11.00	\$200.00	per measure
803950_2024_12	C&I	Clothes Washer (Electric DHW; Gas Dryer)	735	Miscellaneous BUS	0.0001379439	0.1014	11.00	\$200.00	per measure
804000_2024_12	C&I	Clothes Washer (Gas DHW; Gas Dryer)	149	Miscellaneous BUS	0.0001379439	0.0205	11.00	\$200.00	per measure

Appliance standards of certified commercial front load

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
804050_2024_12	C&I	Clothes Dryer Vented Electric, Standard (≥ 4.4 ft3)	132	Miscellaneous BUS	0.0001379439	0.018238	14.00	\$75.00	per measure
804100_2024_12	C&I	Clothes Dryer Vented/Ventless Electric, Compact (120V) (< 4.4 ft3)	472	Miscellaneous BUS	0.0001379439	0.065159	14.00	\$105.00	per measure
804200_2024_12	C&I	Clothes Dryer Ventless Electric, Compact (240V) (< 4.4 ft3)	428	Miscellaneous BUS	0.0001379439	0.058993	14.00	\$105.00	per measure

2024 Energy Star average

BUSINESS PRESCRIPTIVE MEASURES

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Cells highlighted in this color are calculated variables

Compressed Air

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
804300_2024_12	C&I	No Loss Condensate Drain (Reciprocating - On/off Control)	3,272	Air Comp BUS	0.0001379439	0.451388	13.00	\$778.00	per measure
804350_2024_12	C&I	No Loss Condensate Drain (Reciprocating - Load/Unload)	2,419	Air Comp BUS	0.0001379439	0.333634	13.00	\$778.00	per measure
804400_2024_12	C&I	No Loss Condensate Drain (Screw - Load/Unload)	2,703	Air Comp BUS	0.0001379439	0.372886	13.00	\$778.00	per measure
804450_2024_12	C&I	No Loss Condensate Drain (Screw - Inlet Modulation)	978	Air Comp BUS	0.0001379439	0.134926	13.00	\$778.00	per measure
804500_2024_12	C&I	No Loss Condensate Drain (Screw - Inlet Modulation w/ Unloading)	978	Air Comp BUS	0.0001379439	0.134926	13.00	\$778.00	per measure
804550_2024_12	C&I	No Loss Condensate Drain (Screw - Variable Displacement)	2,721	Air Comp BUS	0.0001379439	0.375338	13.00	\$778.00	per measure
804600_2024_12	C&I	No Loss Condensate Drain (Screw - VFD)	3,166	Air Comp BUS	0.0001379439	0.436668	13.00	\$778.00	per measure

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
804650_2024_12	C&I	Compressed Air Nozzle (Reciprocating - On/off Control)	1,633	Air Comp BUS	0.0001379439	0.225284	15.00	\$59	per measure
804700_2024_12	C&I	Compressed Air Nozzle (Reciprocating - Load/Unload)	1,209	Air Comp BUS	0.0001379439	0.166711	15.00	\$59	per measure
804750_2024_12	C&I	Compressed Air Nozzle (Screw - Load/Unload)	1,192	Air Comp BUS	0.0001379439	0.164458	15.00	\$59	per measure
804800_2024_12	C&I	Compressed Air Nozzle (Screw - Inlet Modulation)	474	Air Comp BUS	0.0001379439	0.065333	15.00	\$59	per measure
804850_2024_12	C&I	Compressed Air Nozzle (Screw - Inlet Modulation w/ slowdown)	1,209	Air Comp BUS	0.0001379439	0.166711	15.00	\$59	per measure
804900_2024_12	C&I	Compressed Air Nozzle (Screw - Variable Displacement)	980	Air Comp BUS	0.0001379439	0.135171	15.00	\$59	per measure
804950_2024_12	C&I	Compressed Air Nozzle (Screw - VFD)	1,584	Air Comp BUS	0.0001379439	0.218527	15.00	\$59	per measure

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost per HP	Units
805000_2024_12	C&I	VSD Air Compressor 5-40 HP	949.4	Air Comp BUS	0.0001379439	0.130961	10.00	\$202	per HP
805001_2024_12	C&I	VSD Air Compressor >40-50 HP	949.4	Air Comp BUS	0.0001379439	0.130961	10.00	\$202	per HP
805002_2024_12	C&I	VSD Air Compressor 50-200 HP	1,052.0	Air Comp BUS	0.0001379439	0.145120	10.00	\$202	per HP

Incremental Cost (\$) = ((127 x hp<sub>compressor</sub>) + 1446) x 1.43

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per CFM Reduced)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805020_2024_12	C&I	Leak Repair (Reciprocating - On/off Control)	1,126.32	Air Comp BUS	0.0001379439	0.155369	2.00	Actual	per CFM Reduced
805022_2024_12	C&I	Leak Repair (Reciprocating - Load/Unload)	833.48	Air Comp BUS	0.0001379439	0.114973	2.00	Actual	per CFM Reduced
805024_2024_12	C&I	Leak Repair (Screw - Load/Unload)	822.21	Air Comp BUS	0.0001379439	0.113419	2.00	Actual	per CFM Reduced
805026_2024_12	C&I	Leak Repair (Screw - Inlet Modulation)	326.63	Air Comp BUS	0.0001379439	0.045057	2.00	Actual	per CFM Reduced
805028_2024_12	C&I	Leak Repair (Screw - Inlet Modulation w/ Blowdown)	833.48	Air Comp BUS	0.0001379439	0.114973	2.00	Actual	per CFM Reduced
805030_2024_12	C&I	Leak Repair (Screw - Variable Displacement)	675.79	Air Comp BUS	0.0001379439	0.093221	2.00	Actual	per CFM Reduced
805032_2024_12	C&I	Leak Repair (Screw - VFD)	1,092.53	Air Comp BUS	0.0001379439	0.150708	2.00	Actual	per CFM Reduced

Combination Oven

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805050_2024_12	C&I	Combination Oven (Pan Capacity 5 - 40)	6,506	Cooking BUS	0.0001988949	1.3006	12.0	\$1,628.00	per measure
805100_2024_12	C&I	Combination Oven (Pan Capacity < 5)	1,582	Cooking BUS	0.0001988949	0.316288	12.0	\$565.00	per measure

<https://www.energystar.gov/sites/default/files/2024-03/CFM%20Equipment%20Calculator.xlsx>

Fryer

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805150_2024_12	C&I	Standard Open Deep-Fat Fryer	3,310.75	Cooking BUS	0.0001988949	0.661802	12.0	\$1,500.00	per measure
805200_2024_12	C&I	Large Vat Open Deep-Fat Fryer	2,720.46	Cooking BUS	0.0001988949	0.543806	12.0	\$500.00	per measure

Convection Oven

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805250_2024_12	C&I	Convection Oven (Full Size) >5 pans	1,090.32	Cooking BUS	0.0001988949	0.217949	12.0	\$1,191.00	per measure
805275_2024_12	C&I	Convection Oven (Full Size) <5 pans	4,576.38	Cooking BUS	0.0001988949	0.914795	13.0	\$1,192.00	per measure
805300_2024_12	C&I	Convection Oven (Half Size)	2,491.00	Cooking BUS	0.0001988949	0.497938	12.0	\$828.00	per measure

Griddle

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805350_2024_12	C&I	Griddle, single sided	2,640.88	Cooking BUS	0.0001988949	0.527898	12.0	\$850.00	per measure

Kitchen Demand Ventilation Controls

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per Hp)	Units
805405_2020_07	C&I	Kitchen Demand Ventilation Controls, Retrofit	4,197.00	Cooking BUS	0.0001988949	0.838959	15.0	\$1,991.00	per HP
805410_2020_07	C&I	Kitchen Demand Ventilation Controls, New	4,197.00	Cooking BUS	0.0001988949	0.838959	15.0	\$1,991.00	per HP

BUSINESS PRESCRIPTIVE MEASURES

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Pre-Rinse Spray Valve

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805450_2024_12	C&I	Pre-Rinse Spray Valve	4,698.46	Cooking BUS	0.0001998949	0.939198	5.0	\$92.90	per measure
				<i>federal standard</i>		<i>efficient low flow valve</i>			

Low Flow Faucet Aerator

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805500_2024_12	C&I	Low Flow Faucet Aerator	125.64	Water Heating BUS	0.0001811545	0.02276	10.0	\$8.00	per measure

Circulator Pump

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805550_2019_12	C&I	Circulator Pump	651.00	Miscellaneous BUS	0.0001379439	0.089801	15.0	\$1,200.00	per measure

Small Commercial Programmable Thermostats

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per sqft)	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
805600_2024_12	C&I	Small Commercial Programmable Thermostats	0.00	Cooling BUS	0.0009106840	0	8.0	\$160.00	per measure

Demand Controlled Ventilation

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per sqft)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805650_2019_12	C&I	Demand Controlled Ventilation (Gas Heat)	0.67	Cooling BUS	0.0009106840	0.00061	10.00	Actual	per sq. ft.
805700_2019_12	C&I	Demand Controlled Ventilation (Electric Heat)	1.90	Cooling BUS	0.0009106840	0.00173	10.00	Actual	per sq. ft.
805750_2019_12	C&I	Demand Controlled Ventilation (Heat Pump)	1.08	Cooling BUS	0.0009106840	0.000984	10.00	Actual	per sq. ft.

Advanced RTU Controls

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
805800_2019_12	C&I	Advanced RTU Controls	3,779.33	HVAC BUS	0.0004439830	1.677958	15.0	\$4,038.00	per measure

PTAC & PTHP

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per ton) first 5 years	kWh Annual Savings (per ton) next ten years	End Use	kW Factor	kW (per ton) first 5 years	kW (per ton) next ten years	EUL	Inc. Cost (per ton)	Units
805850_2019_12	C&I	PTAC	411.27	10.5	Cooling BUS	0.0009106840	0.3745	0.010	15.0	\$1,047.00	per ton
805900_2019_12	C&I	PTHP	715.42	94.2	Cooling BUS	0.0009106840	0.3745	0.019	15.0	\$1,047.00	per ton

Refrigerated Beverage Vending Machine

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per cubicft)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
805950_2024_12	C&I	Refrigerated Beverage Vending Machine (Class A)	0.13	Refrigeration BUS	0.0001357383	0.000018	12.0	\$125.00	per measure
806000_2024_12	C&I	Refrigerated Beverage Vending Machine (Class B)	0.32	Refrigeration BUS	0.0001357383	0.000043	12.0	\$125.00	per measure

ECM for Walk-in & Reach-in Coolers/Freezers

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per motor)	End Use	kW Factor	kW	EUL	Inc. Cost (per motor)	Units
806050_2024_12	C&I	ECM for Walk-in & Reach-in Coolers	1,409.00	Miscellaneous BUS	0.0001379439	0.194363	15.0	\$358.00	per motor
806055_2024_12	C&I	ECM for Walk-in & Reach-in Freezers	1,409.00	Miscellaneous BUS	0.0001379439	0.194363	15.0	\$208.00	per motor

High Volume Low Speed Fans

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per measure)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
806090_2024_12	C&I	High Volume Low Speed Fan, 16	3,218.0	HVAC BUS	0.0004439830	1.4287	10.0	\$4,072.00	per measure
806095_2024_12	C&I	High Volume Low Speed Fan, 18	4,938.0	HVAC BUS	0.0004439830	2.1924	10.0	\$4,110.00	per measure
806100_2020_07	C&I	High Volume Low Speed Fan, 20	6,577.0	HVAC BUS	0.0004439830	2.9201	10.0	\$4,150.00	per measure
806110_2020_07	C&I	High Volume Low Speed Fan, 22	8,543.0	HVAC BUS	0.0004439830	3.7929	10.0	\$4,180.00	per measure
806120_2020_07	C&I	High Volume Low Speed Fan, 24	10,018.0	HVAC BUS	0.0004439830	4.4478	10.0	\$4,225.00	per measure

Custom Measure

Measure Reference No.	Program/ Channel	Measure	kWh Annual Savings (per motor)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
999999_2019_12	C&I	Custom	Custom	Variable	Variable	Custom	Custom	Custom	Custom

RESIDENTIAL EFFICIENT PRODUCTS

Heat Pump Water Heater

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kWh <sub>cool</sub>	kWh <sub>heat</sub> - Unknown	kWh <sub>heat</sub> - Electric Resistance	kWh <sub>heat</sub> - Heat Pumps	kW	EUL	Inc. Cost	Units
250050_2024_12_	IE/PAYS	Heat Pump Hot Water Heater	2,396.26	Water Heating RES	0.0000887318	380.52	187.07	152.66	113.43	0.212624	13.0	\$1,199.00	per measure

Learning Thermostat / Advanced Thermostat

\*CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
250100_2024_12_	Efficient Products	Learning Thermostat - ASHP heating/cooling SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250100_2024_12_	Efficient Products	Learning Thermostat - ASHP heating/cooling SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250101_2024_12_	Efficient Products	Learning Thermostat - ASHP heating/cooling MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250101_2024_12_	Efficient Products	Learning Thermostat - ASHP heating/cooling MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250102_2024_12_	Efficient Products_CompE	Learning Thermostat - ASHP heating/cooling MF_CompE	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250102_2024_12_	Efficient Products_CompE	Learning Thermostat - ASHP heating/cooling MF_CompE	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250150_2024_12_	Efficient Products	Learning Thermostat - electric furnace heating / central AC MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250150_2024_12_	Efficient Products	Learning Thermostat - electric furnace heating / central AC MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250151_2024_12_	Efficient Products_CompE	Learning Thermostat - electric furnace heating / central AC MF_CompE	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250151_2024_12_	Efficient Products_CompE	Learning Thermostat - electric furnace heating / central AC MF_CompE	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250250_2024_12_	Efficient Products	Learning Thermostat - electric furnace heating / central AC SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250250_2024_12_	Efficient Products	Learning Thermostat - electric furnace heating / central AC SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250350_2024_12_	Efficient Products	Learning Thermostat - Gas Heated / central AC SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250350_2024_12_	Efficient Products	Learning Thermostat - Gas Heated / central AC SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250351_2024_12_	Efficient Products	Learning Thermostat - Gas Heated / central AC MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250351_2024_12_	Efficient Products	Learning Thermostat - Gas Heated / central AC MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250352_2024_12_	Efficient Products_CompE	Learning Thermostat - Gas Heated / central AC MF_CompE**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250352_2024_12_	Efficient Products_CompE	Learning Thermostat - Gas Heated / central AC MF_CompE**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250450_2024_12_	Efficient Products	Learning Thermostat - Unknown SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250450_2024_12_	Efficient Products	Learning Thermostat - Unknown SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250451_2024_12_	Efficient Products	Learning Thermostat - Unknown MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250451_2024_12_	Efficient Products	Learning Thermostat - Unknown MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
250452_2024_12_	Efficient Products_CompE	Learning Thermostat - Unknown MF_CompE**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
250452_2024_12_	Efficient Products_CompE	Learning Thermostat - Unknown MF_CompE**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure

High Efficiency Pool Pumps

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
250550_2021_12_	IE/PAYS	ENERGY STAR VFDs on Residential Swimming Pool Pumps - ROF	315.21	Pool Spa RES	0.0002354459	0.074215	10.0	\$314.00	per measure
250551_2021_12_	IE/PAYS	ENERGY STAR VFDs on Residential Swimming Pool Pumps - ER	1,478.34	Pool Spa RES	0.0002354459	0.348069	10.0	\$549.00	per measure

Advanced Power Strips Tier 2 / Advanced Control Strategies

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251000_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared, TOS/NC	174.84	Miscellaneous RES	0.0001148238	0.020076	10.0	\$65.00	per measure
251001_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared, DI	177.08	Miscellaneous RES	0.0001148238	0.020333	10.0	\$60.00	per measure
251002_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, TOS/NC	109.28	Miscellaneous RES	0.0001148238	0.012548	10.0	\$65.00	per measure
251003_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, DI	110.68	Miscellaneous RES	0.0001148238	0.012709	10.0	\$60.00	per measure

ENERGY STAR Air Purifier

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251051_2024_12_	IE/PAYS	ENERGY STAR Air Purifier/Cleaner: 30 ≤ Smoke CADR < 100	130.66	HVAC RES	0.0004660805	0.060897	9.0	\$8.44	per measure
251052_2024_12_	IE/PAYS	ENERGY STAR Air Purifier/Cleaner: 100 ≤ Smoke CADR < 150	224.86	HVAC RES	0.0004660805	0.104804	9.0	\$22.33	per measure
251053_2024_12_	IE/PAYS	ENERGY STAR Air Purifier/Cleaner: 150 ≤ Smoke CADR < 200	296.65	HVAC RES	0.0004660805	0.138265	9.0	\$92.34	per measure
251054_2024_12_	IE/PAYS	ENERGY STAR Air Purifier/Cleaner: 200 ≤ Smoke CADR	558.90	HVAC RES	0.0004660805	0.260491	9.0	\$44.50	per measure

Source: Baseline values are consistent with ENERGY STAR v.2.0 Room Air Cleaners Data Package and analysis



RESIDENTIAL EFFICIENT PRODUCTS

ENERGY STAR Dehumidifier

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251100_2024_12_	IE/PAYS	ENERGY STAR Dehumidifier	131.43	Cooling RES	0.0009474181	0.124516	12.0	\$10.00	per measure
251101_2024_12_	IE/PAYS	ENERGY STAR Most Efficient Dehumidifier	188.42	Cooling RES	0.0009474181	0.178517	12.0	\$75.00	per measure

Energy Star Room AC

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251150_2024_12_	IE/PAYS	ENERGY STAR Room AC (kWh w ISR)	47.07	Cooling RES	0.0009474181	0.044595	12.0	\$40.00	per measure
251200_2024_12_	IE/PAYS	ENERGY STAR Room AC (kWh w/o ISR)	48.30	Cooling RES	0.0009474181	0.045760	12.0	\$40.00	per measure

Low Flow Handheld Showerheads

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
251300_2024_12_	IE/PAYS	Low Flow Handheld Showerhead SF	92.67	Water heating RES	0.0000887318	0.116	0.008223	10.0	\$15.02	per measure
251350_2024_12_	IE/PAYS	Low Flow Handheld Showerhead MF	105.20	Water heating RES	0.0000887318	0.116	0.009335	10.0	\$15.02	per measure

Spray Foam Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251500_2024_12_	IE/PAYS	Spray Foam Insulation: 12 oz. Can	53.42	Building Shell RES	0.0004660805	0.024898	20.0	\$6.00	per measure

Door Sweep

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251510_2024_12_	IE/PAYS	Door Sweep	28.24	Building Shell RES	0.0004660805	0.013162	20.0	\$15.00	per measure

Weatherstripping

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251520_2024_12_	IE/PAYS	Weatherstripping: 17' Roll	18.84	Building Shell RES	0.0004660805	0.008781	20.0	\$5.00	per measure

Lighting

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
251530_2024_12_	IE/PAYS	LED Nightlights	23.24	Lighting RES	0.0001492529	0.003469	8.0	\$3.35	per measure

RESIDENTIAL ENERGY EFFICIENCY KITS

Dirty Filter Alarm

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units
300050_2024_12_	IE/PAYS	Dirty Filter Alarm_SF	35.83	HVAC RES	0.0004660805	22.67	13.17	0.016700	5.0	\$5.00	per measure
300051_2024_12_	IE	Dirty Filter Alarm_SF - IE Kits	65.48	HVAC RES	0.0004660805	41.42	24.06	0.030519	5.0	\$5.00	per measure
300100_2024_12_	IE/PAYS	Dirty Filter Alarm_MF	118.25	HVAC RES	0.0004660805	74.80	43.45	0.055114	5.0	\$5.00	per measure
300101_2024_12_	IE/PAYS	Dirty Filter Alarm_MF_CompE	57.10	HVAC RES	0.0004660805	25.50	31.60	0.026613	5.0	\$5.00	per measure

LEDs (per bulb)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
300430_2024_12_	IE	LED Nightlights	26.15	Lighting RES	0.0001492529	0.003903	20.0	\$3.35	per measure
300431_2024_12_	IE	LED - 10W (750-899 lumens) IE	30.06	Lighting RES	0.0001492529	0.004487	8.0	\$1.45	per measure
300432_2024_12_	IE	LED - 15W (900-1399 lumens) IE	37.60	Lighting RES	0.0001492529	0.005612	8.0	\$1.45	per measure
300433_2024_12_	IE/PAYS	LED Nightlights	19.24	Lighting RES	0.0001492529	0.002872	8.0	\$3.35	per measure
300434_2024_12_	IE	LED A19 800 Lumens 6W	3.19	Lighting RES	0.0001492529	0.000476	20.0	\$1.00	per measure
300435_2024_12_	IE/PAYS	LED A19 800 Lumens 6W	2.35	Lighting RES	0.0001492529	0.000351	20.0	\$1.00	per measure

Kit Faucet Aerators (Kitchen)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
300450_2024_12_	IE/PAYS	Kit Faucet Aerator (Kitchen)	32.47	Water Heating RES	0.0000887318	0.086	0.002881	10.00	\$3.00	per measure
300500_2024_12_	MF	Kit Faucet Aerator (Kitchen)	108.66	Water Heating RES	0.0000887318	0.086	0.009642	10.00	\$3.00	per measure
300501_2024_12_	IE	Kit Faucet Aerator (Kitchen) - SFIE Kits	47.69	Water Heating RES	0.0000887318	0.086	0.004232	10.00	\$3.00	per measure

Kit Faucet Aerators (Bathroom)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
300550_2024_12_	IE/PAYS	Kit Faucet Aerator (Bathroom)	6.90	Water Heating RES	0.0000887318	0.06875733	0.000612	10.0	\$3.00	per measure
300600_2024_12_	MF	Kit Faucet Aerator (Bathroom)	33.64	Water Heating RES	0.0000887318	0.06875733	0.002985	10.0	\$3.00	per measure
300601_2024_12_	IE	Kit Faucet Aerator (Bathroom) - SFIE Kits	15.98	Water Heating RES	0.0000887318	0.05381008	0.001418	10.0	\$3.00	per measure

Low Flow Showerheads

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
300650_2024_12_	IE/PAYS	Low Flow Showerheads	76.42	Water Heating RES	0.0000887318	0.116	0.006781	10.0	\$7.00	per measure
300700_2024_12_	MF	Low Flow Showerheads	310.79	Water Heating RES	0.0000887318	0.116	0.027577	10.0	\$7.00	per measure
300701_2024_12_	IE	Low Flow Showerheads - SFIE Kits	84.77	Water Heating RES	0.0000887318	0.116	0.007522	10.0	\$7.00	per measure

Pipe Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
300750_2019_12_	IE/PAYS	Pipe Insulation	3.24	Water Heating RES	0.0000887318	0.000287	12.0	\$2.87	per foot
300800_2019_12_	MF	Pipe Insulation	15.01	Water Heating RES	0.0000887318	0.001332	12.0	\$2.87	per foot
300801_2020_12_	IE/PAYS	Pipe Insulation - SFIE Kits	3.40	Water Heating RES	0.0000887318	0.000302	12.0	\$2.87	per foot

RESIDENTIAL ENERGY EFFICIENCY KITS

Advanced Power Strips Tier 1 / Load Sensing

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
300850_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -TOS/NC - Home Office	29.45	Miscellaneous RES	0.0001148238	0.003382	10.0	\$20.00	per measure
300851_2020_12_	IE/PAYS	Advanced Tier 1 Power Strips -DI - Home Office	29.45	Miscellaneous RES	0.0001148238	0.003382	10.0	\$30.00	per measure
300900_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -Kits - Home Office	29.08	Miscellaneous RES	0.0001148238	0.003339	10.0	\$20.00	per measure
300950_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -TOS/NC - Home Entertainment	71.35	Miscellaneous RES	0.0001148238	0.008193	10.0	\$20.00	per measure
300951_2020_12_	IE/PAYS	Advanced Tier 1 Power Strips -DI - Home Entertainment	71.35	Miscellaneous RES	0.0001148238	0.008193	10.0	\$30.00	per measure
301000_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -Kits - Home Entertainment	70.44	Miscellaneous RES	0.0001148238	0.008088	10.0	\$20.00	per measure
301050_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -TOS/NC - Unknown Location	56.26	Miscellaneous RES	0.0001148238	0.006460	10.0	\$20.00	per measure
301051_2020_12_	IE/PAYS	Advanced Tier 1 Power Strips -DI - Unknown Location	56.26	Miscellaneous RES	0.0001148238	0.006460	10.0	\$30.00	per measure
301100_2019_12_	IE/PAYS	Advanced Tier 1 Power Strips -Kits - Unknown Location	50.59	Miscellaneous RES	0.0001148238	0.005809	10.0	\$20.00	per measure

Advanced Power Strips Tier 2 / Advanced Control Strategies

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
301149_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared, TOS/NC/DI - Unknown Location	177.08	Miscellaneous RES	0.0001148238	0.020333	10.0	\$65.00	per measure
301150_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared, SFIE Kits - Unknown Location	174.84	Miscellaneous RES	0.0001148238	0.020076	10.0	\$65.00	per measure
301151_2024_12_	IE/PAYS	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, TOS/NC/DI - Unknown Location	110.68	Miscellaneous RES	0.0001148238	0.012709	10.0	\$65.00	per measure
301152_2024_12_	IE	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, SFIE Kits - Unknown Location	109.28	Miscellaneous RES	0.0001148238	0.012548	10.0	\$65.00	per measure

Weatherstripping

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
301200_2024_12_	IE/PAYS	Weatherstripping: 17' Roll	18.84	Building Shell RES	0.0004660805	0.008781	20.0	\$5.00	per measure

RESIDENTIAL HVAC

ECM/ Blower Motor

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	Auto kWh	Continuous kWh	kW	EUL	Inc. Cost	Units
350150_2024_12	SF	ECM Auto Fan ER1 - SF	579.09	HVAC RES	0.0004660805	264.1	28.2	286.7	0.0	0.269903000	6.0	\$87.50	per measure
350150_2024_12	SF	ECM Auto Fan ER2 - SF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000000	0.0	\$0.00	per measure
350175_2024_12	MF	ECM Auto Fan ER1 - MF	579.09	HVAC RES	0.0004660805	264.1	28.2	286.7	0.0	0.269903000	6.0	\$87.50	per measure
350175_2024_12	MF	ECM Auto Fan ER2 - MF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000000	0.0	\$0.00	per measure
350300_2024_12	SF	ECM Continuous Fan ER1 - SF	579.09	HVAC RES	0.0004660805	264.1	28.2	0.0	286.7	0.269903000	6.0	\$87.50	per measure
350300_2024_12	SF	ECM Continuous Fan ER2 - SF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000000	0.0	\$0.00	per measure
350350_2024_12	MF	ECM Continuous Fan ER1 - MF	579.09	HVAC RES	0.0004660805	264.1	28.2	0.0	286.7	0.269903000	6.0	\$87.50	per measure
350350_2024_12	MF	ECM Continuous Fan ER2 - MF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000000	0.0	\$0.00	per measure

Note: As part of the Code of Federal Regulations, energy conservation standards for covered residential furnace fans became effective on July 3, 2019 (10 CFR 430.32(y)). This code requirement effectively makes ECMs part of the baseline for New Construction (NC), Replace-on-Fail (ROF), Time-of-Replacement (TOS), and Early Replacement (EREP) scenarios. Savings are only allowable for EREP measures, for the remaining useful life of the existing equipment (ER1, 6 years). Therefore, the EUL of the

Central Air Conditioners

\*MfC = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
350400_2024_12	SF	CAC-SEER14_ER1_SF	1,507.85	Cooling RES	0.0009474181	1.428564	6	\$185.35	2.98
350400_2024_12	SF	CAC-SEER14_ER2_SF	99.19	Cooling RES ER2	0.0009474181	0.093974	12	\$0.00	2.98
350450_2024_12	SF	CAC-SEER14_ROF_SF	98.86	Cooling RES	0.0009474181	0.093662	18	\$111.40	2.97
350500_2024_12	MF	CAC-SEER14_ER1_MF	1,011.98	Cooling RES	0.0009474181	0.958768	6	\$185.35	2.00
350500_2024_12	MF	CAC-SEER14_ER2_MF	66.57	Cooling RES ER2	0.0009474181	0.063070	12	\$0.00	2.00
350501_2024_12	MfC	CAC-SEER14_ER1_MF_CompE	735.98	Cooling RES	0.0009474181	0.697281	6	\$185.35	2.00
350501_2024_12	MfC	CAC-SEER14_ER2_MF_CompE	48.41	Cooling RES ER2	0.0009474181	0.045865	12	\$0.00	2.00
350550_2024_12	MF	CAC-SEER14_ROF_MF	66.57	Cooling RES	0.0009474181	0.063070	18	\$111.40	2.00
350551_2024_12	MfC	CAC-SEER14_ROF_MF_CompE	48.41	Cooling RES	0.0009474181	0.045865	18	\$111.40	2.00
350600_2024_12	SF	CAC-SEER15_ER1_SF	2,107.99	Cooling RES	0.0009474181	1.997148	6	\$526.97	3.11
350600_2024_12	SF	CAC-SEER15_ER2_SF	273.32	Cooling RES ER2	0.0009474181	0.258948	12	\$0.00	3.11
350650_2024_12	SF	CAC-SEER15_ROF_SF	262.90	Cooling RES	0.0009474181	0.249076	18	\$453.03	2.99
350700_2024_12	MF	CAC-SEER15_ER1_MF	1,759.78	Cooling RES	0.0009474181	1.667247	6	\$526.97	2.44
350700_2024_12	MF	CAC-SEER15_ER2_MF	213.12	Cooling RES ER2	0.0009474181	0.201914	12	\$0.00	2.44
350701_2024_12	MfC	CAC-SEER15_ER1_MF_CompE	1,279.84	Cooling RES	0.0009474181	1.212544	6	\$526.97	2.44
350701_2024_12	MfC	CAC-SEER15_ER2_MF_CompE	154.99	Cooling RES ER2	0.0009474181	0.146840	12	\$0.00	2.44
350750_2024_12	MF	CAC-SEER15_ROF_MF	165.69	Cooling RES	0.0009474181	0.156978	18	\$453.03	2.00
350751_2024_12	MfC	CAC-SEER15_ROF_MF_CompE	120.50	Cooling RES	0.0009474181	0.114164	18	\$453.03	2.00
350800_2024_12	SF	CAC-SEER16_ER1_SF	2,184.27	Cooling RES	0.0009474181	2.069417	6	\$708.93	2.88
350800_2024_12	SF	CAC-SEER16_ER2_SF	366.69	Cooling RES ER2	0.0009474181	0.347409	12	\$0.00	2.88
350850_2024_12	SF	CAC-SEER16_ROF_SF	363.43	Cooling RES	0.0009474181	0.344320	18	\$634.98	2.85
350900_2024_12	MF	CAC-SEER16_ER1_MF	1,902.85	Cooling RES	0.0009474181	1.802795	6	\$708.93	2.54
350900_2024_12	MF	CAC-SEER16_ER2_MF	324.05	Cooling RES ER2	0.0009474181	0.307011	12	\$0.00	2.54
350901_2024_12	MfC	CAC-SEER16_ER1_MF_CompE	1,383.89	Cooling RES	0.0009474181	1.311122	6	\$708.93	2.54
350901_2024_12	MfC	CAC-SEER16_ER2_MF_CompE	235.67	Cooling RES ER2	0.0009474181	0.223278	12	\$0.00	2.54
350950_2024_12	MF	CAC-SEER16_ROF_MF	349.39	Cooling RES	0.0009474181	0.331018	18	\$634.98	2.75
350951_2024_12	MfC	CAC-SEER16_ROF_MF_CompE	254.10	Cooling RES	0.0009474181	0.240739	18	\$634.98	2.75
351000_2024_12	SF	CAC-SEER17_ER1_SF	2,381.95	Cooling RES	0.0009474181	2.256703	6	\$965.15	3.17
351000_2024_12	SF	CAC-SEER17_ER2_SF	530.38	Cooling RES ER2	0.0009474181	0.502492	12	\$0.00	3.17
351050_2024_12	SF	CAC-SEER17_ROF_SF	549.48	Cooling RES	0.0009474181	0.520587	18	\$891.20	3.30
351100_2024_12	MF	CAC-SEER17_ER1_MF	1,936.61	Cooling RES	0.0009474181	1.834779	6	\$965.15	2.40
351100_2024_12	MF	CAC-SEER17_ER2_MF	407.29	Cooling RES ER2	0.0009474181	0.385874	12	\$0.00	2.40
351101_2024_12	MfC	CAC-SEER17_ER1_MF_CompE	1,408.44	Cooling RES	0.0009474181	1.334382	6	\$965.15	2.40
351101_2024_12	MfC	CAC-SEER17_ER2_MF_CompE	296.21	Cooling RES ER2	0.0009474181	0.280635	12	\$0.00	2.40
351150_2024_12	MF	CAC-SEER17_ROF_MF	452.29	Cooling RES	0.0009474181	0.428508	18	\$891.20	2.75
351151_2024_12	MfC	CAC-SEER17_ROF_MF_CompE	328.94	Cooling RES	0.0009474181	0.311644	18	\$891.20	2.75
351160_2024_12	SF	CAC-SEER18_ER1_SF	2,517.94	Cooling RES	0.0009474181	2.385542	6	\$994.85	3.33
351160_2024_12	SF	CAC-SEER18_ER2_SF	662.17	Cooling RES ER2	0.0009474181	0.627352	12	\$0.00	3.33
351161_2024_12	SF	CAC-SEER18_ROF_SF	660.62	Cooling RES	0.0009474181	0.625883	18	\$920.91	3.33
351162_2024_12	MF	CAC-SEER18_ER1_MF	2,128.65	Cooling RES	0.0009474181	2.016722	6	\$994.85	2.50
351162_2024_12	MF	CAC-SEER18_ER2_MF	496.19	Cooling RES ER2	0.0009474181	0.470099	12	\$0.00	2.50
351163_2024_12	MfC	CAC-SEER18_ER1_MF_CompE	1,220.33	Cooling RES	0.0009474181	1.156163	6	\$994.85	2.50
351163_2024_12	MfC	CAC-SEER18_ER2_MF_CompE	360.87	Cooling RES ER2	0.0009474181	0.341895	12	\$0.00	2.50
351164_2024_12	MF	CAC-SEER18_ROF_MF	396.96	Cooling RES	0.0009474181	0.376087	18	\$920.91	2.00
351165_2024_12	MfC	CAC-SEER18_ROF_MF_CompE	288.70	Cooling RES	0.0009474181	0.273520	18	\$920.91	2.00

**RESIDENTIAL HVAC**  
**Central Air Conditioners**

\*MfC = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
351170_2024_12	SF	CAC-SEER19_ER1_SF	3,468.74	Cooling RES	0.0009474181	3.286347	6	\$994.85	4.30
351170_2024_12	SF	CAC-SEER19_ER2_SF	1,002.03	Cooling RES ER2	0.0009474181	0.949341	12	\$0.00	4.30
351171_2024_12	SF	CAC-SEER19_ROF_SF	1,037.44	Cooling RES	0.0009474181	0.982889	18	\$920.91	4.43
351172_2024_12	MF	CAC-SEER19_ER1_MF	1,403.23	Cooling RES	0.0009474181	1.329446	6	\$994.85	2.00
351172_2024_12	MF	CAC-SEER19_ER2_MF	457.82	Cooling RES ER2	0.0009474181	0.433747	12	\$0.00	2.00
351173_2024_12	MfC	CAC-SEER19_ER1_MF_CompE	1,020.53	Cooling RES	0.0009474181	0.966869	6	\$994.85	2.00
351173_2024_12	MfC	CAC-SEER19_ER2_MF_CompE	332.96	Cooling RES ER2	0.0009474181	0.315452	12	\$0.00	2.00
351174_2024_12	MF	CAC-SEER19_ROF_MF	457.82	Cooling RES	0.0009474181	0.433747	18	\$920.91	2.00
351175_2024_12	MfC	CAC-SEER19_ROF_MF_CompE	332.96	Cooling RES	0.0009474181	0.315452	18	\$920.91	2.00
351180_2024_12	SF	CAC-SEER20_ER1_SF	2,828.06	Cooling RES	0.0009474181	2.679355	6	\$1,080.26	3.61
351180_2024_12	SF	CAC-SEER20_ER2_SF	935.32	Cooling RES ER2	0.0009474181	0.886139	12	\$0.00	3.61
351181_2024_12	SF	CAC-SEER20_ROF_SF	968.73	Cooling RES	0.0009474181	0.917792	18	\$1,006.32	3.77
351182_2024_12	MF	CAC-SEER20_ER1_MF	1,436.44	Cooling RES	0.0009474181	1.360909	6	\$1,080.26	2.00
351182_2024_12	MF	CAC-SEER20_ER2_MF	512.59	Cooling RES ER2	0.0009474181	0.485637	12	\$0.00	2.00
351183_2024_12	MfC	CAC-SEER20_ER1_MF_CompE	1,060.36	Cooling RES	0.0009474181	1.004604	6	\$1,080.26	2.00
351183_2024_12	MfC	CAC-SEER20_ER2_MF_CompE	372.79	Cooling RES ER2	0.0009474181	0.353188	12	\$0.00	2.00
351184_2024_12	MF	CAC-SEER20_ROF_MF	512.59	Cooling RES	0.0009474181	0.485637	18	\$1,006.32	2.00
351185_2024_12	MfC	CAC-SEER20_ROF_MF_CompE	372.79	Cooling RES	0.0009474181	0.353188	18	\$1,006.32	2.00
351190_2024_12	SF	CAC-SEER21+_ER1_SF	2,724.14	Cooling RES	0.0009474181	2.580900	6	\$1,193.52	3.30
351190_2024_12	SF	CAC-SEER21+_ER2_SF	1,010.53	Cooling RES ER2	0.0009474181	0.957394	12	\$0.00	3.30
351191_2024_12	SF	CAC-SEER21+_ROF_SF	1,067.57	Cooling RES	0.0009474181	1.011435	18	\$1,240.26	3.38
351192_2024_12	MF	CAC-SEER21+_ER1_MF	1,507.56	Cooling RES	0.0009474181	1.428290	6	\$1,080.26	2.00
351192_2024_12	MF	CAC-SEER21+_ER2_MF	562.15	Cooling RES ER2	0.0009474181	0.532591	12	\$0.00	2.00
351193_2024_12	MfC	CAC-SEER21+_ER1_MF_CompE	1,096.41	Cooling RES	0.0009474181	1.038759	6	\$1,080.26	2.00
351193_2024_12	MfC	CAC-SEER21+_ER2_MF_CompE	408.84	Cooling RES ER2	0.0009474181	0.387342	12	\$0.00	2.00
351194_2024_12	MF	CAC-SEER21+_ROF_MF	562.15	Cooling RES	0.0009474181	0.532591	18	\$1,006.32	2.00
351195_2024_12	MfC	CAC-SEER21+_ROF_MF_CompE	408.84	Cooling RES	0.0009474181	0.387342	18	\$1,006.32	2.00

**Mini/Multi-Split Heat Pumps and Air Conditioners**

\*MfC = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
351200_2024_12	SF	Mini/MultiSplitAC_ER1_SF	1,227.25	Cooling RES	0.0009474181	1.162719	6.0	\$683.92	1.75
351200_2024_12	SF	Mini/MultiSplitAC_ER2_SF	322.80	Cooling RES ER2	0.0009474181	0.305827	12.0	\$0.00	
351250_2024_12	SF	Mini/MultiSplitAC_ROF_SF	240.28	Cooling RES	0.0009474181	0.227646	18.0	\$543.71	1.06
351300_2024_12	SF	Mini/MultiSplitASHP_ROF_SF_NC	251.78	Cooling RES	0.0009474181	0.238541	18.0	\$543.71	1.33
351300_2024_12	SF	Mini/MultiSplitASHP_ROF_SF_NC	916.80	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351350_2024_12	SF	Mini/MultiSplitASHP_ROF_SF	251.78	Cooling RES	0.0009474181	0.238541	18.0	\$543.71	1.33
351350_2024_12	SF	Mini/MultiSplitASHP_ROF_SF	916.80	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351400_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_SF	1,157.84	Cooling RES	0.0009474181	1.096959	6.0	\$626.50	1.92
351400_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_SF	4,740.51	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351400_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_SF	429.94	Cooling RES ER2	0.0009474181	0.407333	12.0	\$0.00	
351400_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_SF	4,740.51	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351401_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_SF	1,157.84	Cooling RES	0.0009474181	1.096959	6.0	\$89.87	1.92
351401_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351401_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_SF	429.94	Cooling RES ER2	0.0009474181	0.407333	12.0	\$0.00	
351401_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351450_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_SF	299.32	Cooling RES	0.0009474181	0.283581	18.0	\$543.71	1.33
351450_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_SF	4,143.51	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351451_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_SF	299.32	Cooling RES	0.0009474181	0.283581	18.0	\$36.63	1.33
351451_2024_12	SF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351500_2024_12	SF	Mini/MultiSplitASHP_ER1_SF	1,157.84	Cooling RES	0.0009474181	1.096959	6.0	\$683.92	1.92
351500_2024_12	SF	Mini/MultiSplitASHP_ER1_SF	1,456.32	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351500_2024_12	SF	Mini/MultiSplitASHP_ER2_SF	361.07	Cooling RES ER2	0.0009474181	0.342084	12.0	\$0.00	
351500_2024_12	SF	Mini/MultiSplitASHP_ER2_SF	1,022.43	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351550_2024_12	MF	Mini/MultiSplitAC_ER1_MF	1,402.57	Cooling RES	0.0009474181	1.328820	6.0	\$1,381.22	1.75
351550_2024_12	MF	Mini/MultiSplitAC_ER2_MF	368.91	Cooling RES ER2	0.0009474181	0.349512	12.0	\$0.00	
351551_2024_12	MfC	Mini/MultiSplitAC_ER1_MF_CompE	937.47	Cooling RES	0.0009474181	0.888176	6.0	\$1,381.22	2.00
351551_2024_12	MfC	Mini/MultiSplitAC_ER2_MF_CompE	258.67	Cooling RES ER2	0.0009474181	0.245069	12.0	\$0.00	
351600_2024_12	MF	Mini/MultiSplitAC_ROF_MF	455.26	Cooling RES	0.0009474181	0.431322	18.0	\$668.00	1.06

RESIDENTIAL HVAC

Mini/Multi-Split Heat Pumps and Air Conditioners

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
351601_2024_12	Mfc	Mini/MultiSplitAC_ROF_MF_CompE	1,100.38	Cooling RES	0.0009474181	1.042520	18.0	\$668.00	2.00
351650_2024_12	MF	Mini/MultiSplitASHP_ROF_MF_NC	188.86	Cooling RES	0.0009474181	0.178929	18.0	\$668.00	1.33
351650_2024_12	MF	Mini/MultiSplitASHP_ROF_MF_NC	792.89	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351651_2024_12	Mfc	Mini/MultiSplitASHP_ROF_MF_NC_CompE	124.03	Cooling RES	0.0009474181	0.117508	18.0	\$668.00	1.01
351651_2024_12	Mfc	Mini/MultiSplitASHP_ROF_MF_NC_CompE	301.36	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351700_2024_12	MF	Mini/MultiSplitASHP_ROF_MF	188.86	Cooling RES	0.0009474181	0.178929	18.0	\$668.00	1.33
351700_2024_12	MF	Mini/MultiSplitASHP_ROF_MF	792.89	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351701_2024_12	Mfc	Mini/MultiSplitASHP_ROF_MF_CompE	124.03	Cooling RES	0.0009474181	0.117508	18.0	\$668.00	1.01
351701_2024_12	Mfc	Mini/MultiSplitASHP_ROF_MF_CompE	301.36	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351750_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF	1,150.45	Cooling RES	0.0009474181	1.089957	6.0	\$1,320.00	2.00
351750_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF	5,287.87	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351750_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_MF	393.90	Cooling RES ER2	0.0009474181	0.373188	12.0	\$0.00	
351750_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_MF	5,287.87	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351751_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF_CompE	755.49	Cooling RES	0.0009474181	0.715765	6.0	\$1,320.00	2.00
351751_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF_CompE	2,009.80	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351751_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_MF_CompE	258.67	Cooling RES ER2	0.0009474181	0.245069	12.0	\$0.00	
351751_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER2_MF_CompE	2,009.80	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351752_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF	1,093.24	Cooling RES	0.0009474181	1.035755	6.0	\$161.96	2.00
351752_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351752_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_MF	393.90	Cooling RES ER2	0.0009474181	0.373188	12.0	\$0.00	
351752_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351753_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF_CompE	755.49	Cooling RES	0.0009474181	0.715765	6.0	\$161.96	2.00
351753_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351753_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_MF_CompE	258.67	Cooling RES ER2	0.0009474181	0.245069	12.0	\$0.00	
351753_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351800_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF	224.90	Cooling RES	0.0009474181	0.213074	18.0	\$668.00	1.01
351800_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF	3,872.08	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351801_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF_CompE	147.69	Cooling RES	0.0009474181	0.139924	18.0	\$668.00	1.01
351801_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF_CompE	1,808.12	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351802_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF	224.90	Cooling RES	0.0009474181	0.213074	18.0	\$36.67	1.01
351802_2024_12	MF	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351803_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF_CompE	147.69	Cooling RES	0.0009474181	0.139924	18.0	\$36.67	1.01
351803_2024_12	Mfc	Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating RES	0.0000000000	0.000000	18.0	\$0.00	
351850_2024_12	MF	Mini/MultiSplitASHP_ER1_MF	1,150.45	Cooling RES	0.0009474181	1.089957	6.0	\$1,381.22	2.00
351850_2024_12	MF	Mini/MultiSplitASHP_ER1_MF	1,786.15	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351850_2024_12	MF	Mini/MultiSplitASHP_ER2_MF	322.32	Cooling RES ER2	0.0009474181	0.305372	12.0	\$0.00	
351850_2024_12	MF	Mini/MultiSplitASHP_ER2_MF	1,022.43	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	
351851_2024_12	Mfc	Mini/MultiSplitASHP_ER1_MF_CompE	755.49	Cooling RES	0.0009474181	0.715765	6.0	\$1,381.22	2.00
351851_2024_12	Mfc	Mini/MultiSplitASHP_ER1_MF_CompE	678.87	Heating RES	0.0000000000	0.000000	6.0	\$0.00	
351851_2024_12	Mfc	Mini/MultiSplitASHP_ER2_MF_CompE	211.67	Cooling RES ER2	0.0009474181	0.200540	12.0	\$0.00	
351851_2024_12	Mfc	Mini/MultiSplitASHP_ER2_MF_CompE	503.04	Heating RES ER2	0.0000000000	0.000000	12.0	\$0.00	

Dual Fuel Heat Pumps

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
351900_2024_12	MF	DFHP-SEER19-ROF_MF	398.66	Cooling Res	0.0009474181	0.377698	18.0	\$1,081.00	3.4
351900_2024_12	MF	DFHP-SEER19-ROF_MF	545.76	Heating Res	0.0000000000	0.000000	18.0		
351901_2024_12	Mfc	DFHP-SEER19-ROF_MF_CompE	289.93	Cooling Res	0.0009474181	0.274685	18.0	\$1,081.00	3.4
351901_2024_12	Mfc	DFHP-SEER19-ROF_MF_CompE	248.74	Heating Res	0.0000000000	0.000000	18.0		
351950_2024_12	MF	DFHP-SEER20-ROF_MF	594.40	Cooling Res	0.0009474181	0.563145	18.0	\$1,081.00	4.4
351950_2024_12	MF	DFHP-SEER20-ROF_MF	876.06	Heating Res	0.0000000000	0.000000	18.0		
351951_2024_12	Mfc	DFHP-SEER20-ROF_MF_CompE	432.29	Cooling Res	0.0009474181	0.409559	18.0	\$1,081.00	4.4
351951_2024_12	Mfc	DFHP-SEER20-ROF_MF_CompE	399.28	Heating Res	0.0000000000	0.000000	18.0		
352000_2024_12	MF	DFHP-SEER21-ROF_MF	816.63	Cooling Res	0.0009474181	0.773690	18.0	\$1,081.00	5.4
352000_2024_12	MF	DFHP-SEER21-ROF_MF	1,268.10	Heating Res	0.0000000000	0.000000	18.0		
352001_2024_12	Mfc	DFHP-SEER21-ROF_MF_CompE	593.92	Cooling Res	0.0009474181	0.562691	18.0	\$1,081.00	5.4
352001_2024_12	Mfc	DFHP-SEER21-ROF_MF_CompE	577.95	Heating Res	0.0000000000	0.000000	18.0		

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Ground Source Heat Pumps

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
352050_2024_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ROF_SF	1,606.94	Cooling Res	0.0009474181	1.522444	18.0	\$10,389.88	3.99
352050_2021_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ROF_SF	16,223.39	Heating RES	0.0000000000	0.000000	18.0		
352100_2024_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ER1_SF	4,725.70	Cooling Res	0.0009474181	4.477214	6.0	\$10,005.78	3.87
352100_2024_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ER1_SF	15,784.45	Heating RES	0.0000000000	0.000000	6.0		
352100_2024_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ER2_SF	1,557.33	Cooling Res ER2	0.0009474181	1.475443	12.0		
352100_2024_12	SF	GSHP-EER23-Replace_CAC_ElectricHeat_ER2_SF	15,784.45	Heating RES ER2	0.0000000000	0.000000	12.0		
352200_2024_12	SF	GSHP-EER23-Replace_ASHP_ER1_SF	4,385.85	Cooling Res	0.0009474181	4.155234	6.0	\$6,248.64	3.87
352200_2024_12	SF	GSHP-EER23-Replace_ASHP_ER1_SF	4,674.40	Heating RES	0.0000000000	0.000000	6.0		
352200_2024_12	SF	GSHP-EER23-Replace_ASHP_ER2_SF	1,367.79	Cooling Res ER2	0.0009474181	1.295869	12.0		
352200_2024_12	SF	GSHP-EER23-Replace_ASHP_ER2_SF	4,674.40	Heating RES ER2	0.0000000000	0.000000	12.0		
352250_2024_12	SF	GSHP-EER23_ROF_SF	1,411.37	Cooling Res	0.0009474181	1.337157	18.0	\$7,508.89	3.99
352250_2021_12	SF	GSHP-EER23_ROF_SF	4,804.39	Heating RES	0.0000000000	0.000000	18.0		
352260_2024_12	SF	GSHP-EER23-Replace_GSHP_ER1_SF	1,557.33	Cooling Res	0.0009474181	1.475443	6.0	\$6,248.64	3.87
352260_2024_12	SF	GSHP-EER23-Replace_GSHP_ER1_SF	4,674.40	Heating RES	0.0000000000	0.000000	6.0		
352260_2024_12	SF	GSHP-EER23-Replace_GSHP_ER2_SF	1,367.79	Cooling Res ER2	0.0009474181	1.295869	12.0		
352260_2024_12	SF	GSHP-EER23-Replace_GSHP_ER2_SF	4,674.40	Heating RES ER2	0.0000000000	0.000000	12.0		

Air Source Heat Pumps

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
352300_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_SF	2,004.34	Cooling Res	0.0009474181	1.898948	6.0	\$3,236.32	2.6
352300_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_SF	8,299.22	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352300_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_SF	266.32	Cooling Res ER2	0.0009474181	0.252316	12.0	\$0.00	
352300_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_SF	8,299.22	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352310_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_SF	2,004.34	Cooling Res	0.0009474181	1.898948	6.0	\$389.45	2.6
352310_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352310_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_SF	266.32	Cooling Res ER2	0.0009474181	0.252316	12.0	\$0.00	
352310_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352350_2024_12	SF	ASHP-SEER15_ER1_SF	2,004.34	Cooling Res	0.0009474181	1.898948	6.0	\$131.70	2.6
352350_2024_12	SF	ASHP-SEER15_ER1_SF	1,774.34	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352350_2024_12	SF	ASHP-SEER15_ER2_SF	119.46	Cooling Res ER2	0.0009474181	0.113179	12.0	\$0.00	
352350_2024_12	SF	ASHP-SEER15_ER2_SF	913.36	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352400_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_SF	273.67	Cooling Res	0.0009474181	0.259280	18.0	\$3,334.60	2.8
352400_2024_12	SF	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_SF	8,958.99	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352410_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_SF	273.67	Cooling Res	0.0009474181	0.259280	18.0	\$98.84	2.8
352410_2024_12	SF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352450_2024_12	SF	ASHP-SEER15_ROF_SF	123.52	Cooling Res	0.0009474181	0.117025	18.0	\$135.00	2.8
352450_2024_12	SF	ASHP-SEER15_ROF_SF	903.22	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352500_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_SF	2,150.16	Cooling Res	0.0009474181	2.037101	6.0	\$3,497.35	2.5
352500_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_SF	8,346.27	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352500_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_SF	387.42	Cooling Res ER2	0.0009474181	0.367049	12.0	\$0.00	
352500_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_SF	8,346.27	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352510_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_SF	2,150.16	Cooling Res	0.0009474181	2.037101	6.0	\$461.51	2.5
352510_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352510_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_SF	387.42	Cooling Res ER2	0.0009474181	0.367049	12.0	\$0.00	
352510_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352550_2024_12	SF	ASHP-SEER16_ER1_SF	2,150.16	Cooling Res	0.0009474181	2.037101	6.0	\$417.68	2.5
352550_2024_12	SF	ASHP-SEER16_ER1_SF	1,926.94	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352550_2024_12	SF	ASHP-SEER16_ER2_SF	239.74	Cooling Res ER2	0.0009474181	0.227134	12.0	\$0.00	
352550_2024_12	SF	ASHP-SEER16_ER2_SF	1,079.89	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352600_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_SF	394.62	Cooling Res	0.0009474181	0.373870	18.0	\$3,623.26	2.8
352600_2024_12	SF	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_SF	9,173.07	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352610_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_SF	394.62	Cooling Res	0.0009474181	0.373870	18.0	\$149.44	3.0
352610_2024_12	SF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352650_2024_12	SF	ASHP-SEER16_ROF_SF	244.06	Cooling Res	0.0009474181	0.231227	18.0	\$421.00	2.8
352650_2024_12	SF	ASHP-SEER16_ROF_SF	1,104.55	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352700_2024_12	MF	ASHP-SEER15_ER1_MF	2,374.39	Cooling Res	0.0009474181	2.249540	6.0	\$131.87	3.0
352700_2024_12	MF	ASHP-SEER15_ER1_MF	2,372.56	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352700_2024_12	MF	ASHP-SEER15_ER2_MF	119.92	Cooling Res ER2	0.0009474181	0.113614	12.0	\$0.00	
352700_2024_12	MF	ASHP-SEER15_ER2_MF	1,377.48	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	

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\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
352701_2024_12	MFc	ASHP-SEER15_ER1_MF_CompE	1,726.83	Cooling Res	0.0009474181	1.636030	6.0	\$131.87	3.0
352701_2024_12	MFc	ASHP-SEER15_ER1_MF_CompE	808.83	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352701_2024_12	MFc	ASHP-SEER15_ER2_MF_CompE	87.22	Cooling Res ER2	0.0009474181	0.082634	12.0	\$0.00	
352701_2024_12	MFc	ASHP-SEER15_ER2_MF_CompE	469.59	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352750_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF	2,374.4	Cooling Res	0.0009474181	2.249540	6.0	\$3,476.73	3.0
352750_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF	9,913.7	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352750_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_MF	281.6	Cooling Res ER2	0.0009474181	0.266746	12.0	\$0.00	
352750_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_MF	9,913.7	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352751_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,726.8	Cooling Res	0.0009474181	1.636030	6.0	\$3,476.73	3.0
352751_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF_CompE	3,379.7	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352751_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_MF_CompE	204.8	Cooling Res ER2	0.0009474181	0.193993	12.0	\$0.00	
352751_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ER2_MF_CompE	3,379.7	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352760_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF	2,374.4	Cooling Res	0.0009474181	2.249540	6.0	\$410.70	3.0
352760_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF	0.0	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352760_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_MF	281.6	Cooling Res ER2	0.0009474181	0.266746	12.0	\$0.00	
352760_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_MF	0.0	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352761_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF_CompE	1,726.8	Cooling Res	0.0009474181	1.636030	6.0	\$772.72	3.0
352761_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.0	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352761_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_MF_CompE	204.8	Cooling Res ER2	0.0009474181	0.193993	12.0	\$0.00	
352761_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.0	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352800_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF	207.5	Cooling Res	0.0009474181	0.196608	18.0	\$2,961.00	2.2
352800_2024_12	MF	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF	6,883.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352801_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF_CompE	150.9	Cooling Res	0.0009474181	0.142994	18.0	\$2,961.00	2.2
352801_2024_12	MFc	ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,346.5	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352810_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF	207.5	Cooling Res	0.0009474181	0.196608	18.0	\$86.66	2.2
352810_2024_12	MF	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352811_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF_CompE	150.9	Cooling Res	0.0009474181	0.142994	18.0	\$178.95	2.2
352811_2024_12	MFc	ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352850_2024_12	MF	ASHP-SEER16_ER1_MF	2,088.3	Cooling Res	0.0009474181	1.978484	6.0	\$417.81	2.8
352850_2024_12	MF	ASHP-SEER16_ER1_MF	2,245.6	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352850_2024_12	MF	ASHP-SEER16_ER2_MF	245.4	Cooling Res ER2	0.0009474181	0.232459	12.0	\$0.00	
352850_2024_12	MF	ASHP-SEER16_ER2_MF	1,295.5	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352851_2024_12	MFc	ASHP-SEER16_ER1_MF_CompE	1,518.8	Cooling Res	0.0009474181	1.438891	6.0	\$417.81	2.8
352851_2024_12	MFc	ASHP-SEER16_ER1_MF_CompE	765.5	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
352851_2024_12	MFc	ASHP-SEER16_ER2_MF_CompE	178.4	Cooling Res ER2	0.0009474181	0.169057	12.0	\$0.00	
352851_2024_12	MFc	ASHP-SEER16_ER2_MF_CompE	441.6	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
352900_2024_12	MF	ASHP-SEER16_ROF_MF	174.3	Cooling Res	0.0009474181	0.165163	18.0	\$421.00	2.2
352900_2024_12	MF	ASHP-SEER16_ROF_MF	891.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352901_2024_12	MFc	ASHP-SEER16_ROF_MF_CompE	126.8	Cooling Res	0.0009474181	0.120123	18.0	\$421.00	2.2
352901_2024_12	MFc	ASHP-SEER16_ROF_MF_CompE	303.7	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352950_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF	284.5	Cooling Res	0.0009474181	0.269569	18.0	\$3,277.00	2.2
352950_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF	7,302.7	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352951_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF_CompE	206.9	Cooling Res	0.0009474181	0.196049	18.0	\$3,277.00	2.2
352951_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,489.5	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352960_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF	284.5	Cooling Res	0.0009474181	0.269569	18.0	\$122.89	2.2
352960_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
352961_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF_CompE	206.9	Cooling Res	0.0009474181	0.196049	18.0	\$251.48	2.2
352961_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353000_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF	2,088.3	Cooling Res	0.0009474181	1.978484	6.0	\$3,682.06	2.8
353000_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF	9,445.7	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353000_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_MF	400.5	Cooling Res ER2	0.0009474181	0.379394	12.0	\$0.00	
353000_2024_12	MF	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_MF	9,445.7	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353001_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,518.8	Cooling Res	0.0009474181	1.438891	6.0	\$3,682.06	2.8
353001_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF_CompE	3,220.1	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353001_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_MF_CompE	291.2	Cooling Res ER2	0.0009474181	0.275926	12.0	\$0.00	
353001_2024_12	MFc	ASHP-SEER16-Replace_CAC_ElectricHeat_ER2_MF_CompE	3,220.1	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353010_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF	2,088.3	Cooling Res	0.0009474181	1.978484	6.0	\$428.61	2.8
353010_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF	0.0	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353010_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_MF	400.5	Cooling Res ER2	0.0009474181	0.379394	12.0	\$0.00	
353010_2024_12	MF	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_MF	0.0	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	



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Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
353011_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF_CompE	1,518.8	Cooling Res	0.0009474181	1.438891	6.0	\$807.80	2.8
353011_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.0	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353011_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_MF_CompE	291.2	Cooling Res ER2	0.0009474181	0.275926	12.0	\$0.00	
353011_2024_12	MFc	ASHP-SEER16-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.0	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353050_2024_12	MF	ASHP-SEER15_ROF_MF	85.1	Cooling Res	0.0009474181	0.080606	18.0	\$135.00	2.2
353050_2024_12	MF	ASHP-SEER15_ROF_MF	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353051_2024_12	MFc	ASHP-SEER15_ROF_MF_CompE	61.9	Cooling Res	0.0009474181	0.058617	18.0	\$135.00	2.2
353051_2024_12	MFc	ASHP-SEER15_ROF_MF_CompE	0.0	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_SF	510.45	Cooling Res	0.0009474181	0.483610	18.0	\$4,073.20	3.2
353100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_SF	10,794.65	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_SF	510.45	Cooling Res	0.0009474181	0.483610	18.0	\$183.91	3.2
353110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF	299.93	Cooling Res	0.0009474181	0.284159	18.0	\$3,238.00	2.8
353150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF	6,213.11	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF_CompE	218.13	Cooling Res	0.0009474181	0.206660	18.0	\$3,238.00	2.8
353151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,118.10	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF	299.93	Cooling Res	0.0009474181	0.284159	18.0	\$149.11	2.8
353160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF_CompE	218.13	Cooling Res	0.0009474181	0.206660	18.0	\$302.33	2.8
353161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353200_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_SF	700.49	Cooling Res	0.0009474181	0.663657	18.0	\$4,172.22	3.0
353200_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_SF	10,358.22	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353210_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_SF	700.49	Cooling Res	0.0009474181	0.663657	18.0	\$264.28	3.0
353210_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353250_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF	596.63	Cooling Res	0.0009474181	0.565258	18.0	\$4,171.00	3.0
353250_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF	10,124.50	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353251_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF_CompE	433.91	Cooling Res	0.0009474181	0.411094	18.0	\$4,171.00	3.0
353251_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF_CompE	3,451.53	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353260_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF	596.63	Cooling Res	0.0009474181	0.565258	18.0	\$232.12	3.0
353260_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353261_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF_CompE	433.91	Cooling Res	0.0009474181	0.411094	18.0	\$465.80	3.0
353261_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353300_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_SF	838.11	Cooling Res	0.0009474181	0.794041	18.0	\$4,392.22	3.0
353300_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_SF	10,441.58	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353310_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_SF	838.11	Cooling Res	0.0009474181	0.794041	18.0	\$326.35	3.0
353310_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353350_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF	443.06	Cooling Res	0.0009474181	0.419763	18.0	\$3,689.00	2.8
353350_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF	6,213.11	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353351_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF_CompE	303.60	Cooling Res	0.0009474181	0.287636	18.0	\$3,689.00	2.8
353351_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,118.10	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353360_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF	443.06	Cooling Res	0.0009474181	0.419763	18.0	\$245.55	2.8
353360_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353361_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF_CompE	303.60	Cooling Res	0.0009474181	0.287636	18.0	\$462.48	2.8
353361_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353400_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_SF	2,257.71	Cooling Res	0.0009474181	2.138995	6.0	\$4,188.75	2.6
353400_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_SF	9,124.58	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353400_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_SF	758.63	Cooling Res ER2	0.0009474181	0.718740	12.0	\$0.00	
353400_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_SF	9,124.58	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353410_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_SF	2,257.71	Cooling Res	0.0009474181	2.138995	6.0	\$594.14	2.6
353410_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353410_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_SF	758.63	Cooling Res ER2	0.0009474181	0.718740	12.0	\$0.00	
353410_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353450_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_SF	823.65	Cooling Res	0.0009474181	0.780341	18.0	\$4,329.25	2.9
353450_2024_12	SF	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_SF	10,217.26	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353460_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_SF	823.65	Cooling Res	0.0009474181	0.780341	18.0	\$322.96	2.9
353460_2024_12	SF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353500_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF	534.16	Cooling Res	0.0009474181	0.506073	18.0	\$3,845.00	3.2
353500_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF	7,100.69	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353501_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF_CompE	388.48	Cooling Res	0.0009474181	0.368053	18.0	\$3,845.00	3.2
353501_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,420.69	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353510_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF	534.16	Cooling Res	0.0009474181	0.506073	18.0	\$269.01	3.2
353510_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	

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\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
353511_2024_12	MFC	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF_CompE	388.48	Cooling Res	0.0009474181	0.368053	18.0	\$531.72	3.2
353511_2024_12	MFC	ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353550_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_SF	2,498.89	Cooling Res	0.0009474181	2.367494	6.0	\$4,645.17	3.3
353550_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_SF	12,022.15	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353550_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_SF	963.47	Cooling Res ER2	0.0009474181	0.912809	12.0	\$0.00	
353550_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_SF	12,022.15	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353560_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_SF	2,498.89	Cooling Res	0.0009474181	2.367494	6.0	\$584.70	3.3
353560_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353560_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_SF	963.47	Cooling Res ER2	0.0009474181	0.912809	12.0	\$0.00	
353560_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353600_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF	1,521.91	Cooling Res	0.0009474181	1.441885	6.0	\$3,847.73	3.1
353600_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF	6,759.78	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353600_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_MF	567.50	Cooling Res ER2	0.0009474181	0.537660	12.0	\$0.00	
353600_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_MF	6,759.78	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353601_2024_12	MFC	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,106.84	Cooling Res	0.0009474181	1.048640	6.0	\$3,847.73	3.1
353601_2024_12	MFC	ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF_CompE	2,304.47	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353601_2024_12	MFC	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_MF_CompE	412.73	Cooling Res ER2	0.0009474181	0.391028	12.0	\$0.00	
353601_2024_12	MFC	ASHP-SEER21-Replace_CAC_ElectricHeat_ER2_MF_CompE	2,304.47	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353610_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF	1,521.91	Cooling Res	0.0009474181	1.441885	6.0	\$515.06	3.1
353610_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353610_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_MF	567.50	Cooling Res ER2	0.0009474181	0.537660	12.0	\$0.00	
353610_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353611_2024_12	MFC	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF_CompE	1,106.84	Cooling Res	0.0009474181	1.048640	6.0	\$954.05	3.1
353611_2024_12	MFC	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353611_2024_12	MFC	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_MF_CompE	412.73	Cooling Res ER2	0.0009474181	0.391028	12.0	\$0.00	
353611_2024_12	MFC	ASHP-SEER21-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353650_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_SF	981.12	Cooling Res	0.0009474181	0.929531	18.0	\$4,678.97	3.5
353650_2024_12	SF	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_SF	12,395.99	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353660_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_SF	981.12	Cooling Res	0.0009474181	0.929531	18.0	\$343.17	3.5
353660_2024_12	SF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_SF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353700_2024_12	MF	ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF	585.81	Cooling Res	0.0009474181	0.555007	18.0	\$3,845.00	3.2
353700_2024_12	MF	ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF	7,100.69	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353701_2024_12	MFC	ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF_CompE	426.04	Cooling Res	0.0009474181	0.403638	18.0	\$3,845.00	3.2
353701_2024_12	MFC	ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF_CompE	2,420.69	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353710_2024_12	MF	ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF	585.81	Cooling Res	0.0009474181	0.555007	18.0	\$293.04	3.2
353710_2024_12	MF	ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353711_2024_12	MFC	ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF_CompE	426.04	Cooling Res	0.0009474181	0.403638	18.0	\$575.44	3.2
353711_2024_12	MFC	ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353750_2024_12	SF	ASHP-SEER17_ER1_SF	2,226.27	Cooling Res	0.0009474181	2.109208	6.0	\$626.73	2.7
353750_2024_12	SF	ASHP-SEER17_ER1_SF	2,214.40	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353750_2024_12	SF	ASHP-SEER17_ER2_SF	367.16	Cooling Res ER2	0.0009474181	0.347854	12.0	\$0.00	
353750_2024_12	SF	ASHP-SEER17_ER2_SF	1,324.07	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353800_2024_12	SF	ASHP-SEER17_ROF_SF	363.52	Cooling Res	0.0009474181	0.344405	18.0	\$630.00	3.2
353800_2024_12	SF	ASHP-SEER17_ROF_SF	1,573.28	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
353850_2024_12	SF	ASHP-SEER18_ER1_SF	2,592.93	Cooling Res	0.0009474181	2.456589	6.0	\$851.83	2.9
353850_2024_12	SF	ASHP-SEER18_ER1_SF	2,716.07	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
353850_2024_12	SF	ASHP-SEER18_ER2_SF	503.51	Cooling Res ER2	0.0009474181	0.477034	12.0	\$0.00	
353850_2024_12	SF	ASHP-SEER18_ER2_SF	1,748.17	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
353950_2024_12	SF	ASHP-SEER18_ROF_SF	528.75	Cooling Res	0.0009474181	0.500947	18.0	\$855.00	3.0
353950_2024_12	SF	ASHP-SEER18_ROF_SF	1,739.62	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354000_2024_12	SF	ASHP-SEER19_ER1_SF	2,563.17	Cooling Res	0.0009474181	2.428394	6.0	\$1,078.20	3.8
354000_2024_12	SF	ASHP-SEER19_ER1_SF	3,575.55	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354000_2024_12	SF	ASHP-SEER19_ER2_SF	667.18	Cooling Res ER2	0.0009474181	0.632098	12.0	\$0.00	
354000_2024_12	SF	ASHP-SEER19_ER2_SF	2,312.81	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354050_2024_12	SF	ASHP-SEER19_ROF_SF	665.33	Cooling Res	0.0009474181	0.630346	18.0	\$1,081.00	3.0
354050_2024_12	SF	ASHP-SEER19_ROF_SF	1,851.70	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_SF	2,226.27	Cooling Res	0.0009474181	2.109208	6.0	\$3,783.95	2.7
354100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_SF	8,961.76	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_SF	511.12	Cooling Res ER2	0.0009474181	0.484244	12.0	\$0.00	
354100_2024_12	SF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_SF	8,961.76	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	

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Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
354110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_SF	2,226.27	Cooling Res	0.0009474181	2.109208	6.0	\$501.34	2.7
354110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_SF	511.12	Cooling Res ER2	0.0009474181	0.484244	12.0	\$0.00	
354110_2024_12	SF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF	1,286.47	Cooling Res	0.0009474181	1.218825	6.0	\$3,396.73	3.1
354150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF	6,759.78	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_MF	332.07	Cooling Res ER2	0.0009474181	0.314609	12.0	\$0.00	
354150_2024_12	MF	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_MF	6,759.78	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF_CompE	935.62	Cooling Res	0.0009474181	0.886423	6.0	\$3,396.73	3.1
354151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF_CompE	2,304.47	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_MF_CompE	241.50	Cooling Res ER2	0.0009474181	0.228801	12.0	\$0.00	
354151_2024_12	MFc	ASHP-SEER17-Replace_CAC_ElectricHeat_ER2_MF_CompE	2,304.47	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF	1,286.47	Cooling Res	0.0009474181	1.218825	6.0	\$363.17	3.1
354160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_MF	332.07	Cooling Res ER2	0.0009474181	0.314609	12.0	\$0.00	
354160_2024_12	MF	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF_CompE	935.62	Cooling Res	0.0009474181	0.886423	6.0	\$691.03	3.1
354161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_MF_CompE	241.50	Cooling Res ER2	0.0009474181	0.228801	12.0	\$0.00	
354161_2024_12	MFc	ASHP-SEER17-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354200_2024_12	MF	ASHP-SEER17_ER1_MF	1,369.47	Cooling Res	0.0009474181	1.297461	6.0	\$626.52	3.3
354200_2024_12	MF	ASHP-SEER17_ER1_MF	1,798.76	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354200_2024_12	MF	ASHP-SEER17_ER2_MF	248.43	Cooling Res ER2	0.0009474181	0.235367	12.0	\$0.00	
354200_2024_12	MF	ASHP-SEER17_ER2_MF	1,080.90	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354201_2024_12	MFc	ASHP-SEER17_ER1_MF_CompE	995.98	Cooling Res	0.0009474181	0.943609	6.0	\$626.52	3.3
354201_2024_12	MFc	ASHP-SEER17_ER1_MF_CompE	613.21	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354201_2024_12	MFc	ASHP-SEER17_ER2_MF_CompE	180.68	Cooling Res ER2	0.0009474181	0.171180	12.0	\$0.00	
354201_2024_12	MFc	ASHP-SEER17_ER2_MF_CompE	368.49	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354250_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_SF	2,592.93	Cooling Res	0.0009474181	2.456589	6.0	\$4,148.01	2.9
354250_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_SF	10,051.22	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354250_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_SF	666.45	Cooling Res ER2	0.0009474181	0.631407	12.0	\$0.00	
354250_2024_12	SF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_SF	10,051.22	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354260_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_SF	2,592.93	Cooling Res	0.0009474181	2.456589	6.0	\$578.72	2.9
354260_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354260_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_SF	666.45	Cooling Res ER2	0.0009474181	0.631407	12.0	\$0.00	
354260_2024_12	SF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354300_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF	2,018.52	Cooling Res	0.0009474181	1.912382	6.0	\$3,312.73	1.5
354300_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF	5,203.97	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354300_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_MF	298.31	Cooling Res ER2	0.0009474181	0.282624	12.0	\$0.00	
354300_2024_12	MF	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_MF	5,203.97	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354301_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF_CompE	733.67	Cooling Res	0.0009474181	0.695092	6.0	\$3,312.73	1.5
354301_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,774.08	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354301_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_MF_CompE	216.96	Cooling Res ER2	0.0009474181	0.205552	12.0	\$0.00	
354301_2024_12	MFc	ASHP-SEER18-Replace_CAC_ElectricHeat_ER2_MF_CompE	1,774.08	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354310_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF	2,018.52	Cooling Res	0.0009474181	1.912382	6.0	\$603.16	1.5
354310_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354310_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_MF	298.31	Cooling Res ER2	0.0009474181	0.282624	12.0	\$0.00	
354310_2024_12	MF	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354311_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF_CompE	733.67	Cooling Res	0.0009474181	0.695092	6.0	\$700.01	1.5
354311_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354311_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_MF_CompE	216.96	Cooling Res ER2	0.0009474181	0.205552	12.0	\$0.00	
354311_2024_12	MFc	ASHP-SEER18-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354350_2024_12	MF	ASHP-SEER18_ER1_MF	2,464.77	Cooling Res	0.0009474181	2.335168	6.0	\$851.67	2.5
354350_2024_12	MF	ASHP-SEER18_ER1_MF	2,332.67	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354350_2024_12	MF	ASHP-SEER18_ER2_MF	374.74	Cooling Res ER2	0.0009474181	0.355035	12.0	\$0.00	
354350_2024_12	MF	ASHP-SEER18_ER2_MF	1,496.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354351_2024_12	MFc	ASHP-SEER18_ER1_MF_CompE	1,792.56	Cooling Res	0.0009474181	1.698304	6.0	\$851.67	2.5
354351_2024_12	MFc	ASHP-SEER18_ER1_MF_CompE	795.23	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354351_2024_12	MFc	ASHP-SEER18_ER2_MF_CompE	272.54	Cooling Res ER2	0.0009474181	0.258209	12.0	\$0.00	
354351_2024_12	MFc	ASHP-SEER18_ER2_MF_CompE	510.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	

RESIDENTIAL HVAC

Air Source Heat Pumps

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
354400_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_SF	2,563.17	Cooling Res	0.0009474181	2.428394	6.0	\$4,902.60	3.8
354400_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_SF	13,145.12	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354400_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_SF	842.88	Cooling Res ER2	0.0009474181	0.798560	12.0	\$0.00	
354400_2024_12	SF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_SF	13,145.12	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354410_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_SF	2,563.17	Cooling Res	0.0009474181	2.428394	6.0	\$550.40	3.6
354410_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_SF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354410_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_SF	842.88	Cooling Res ER2	0.0009474181	0.798560	12.0	\$0.00	
354410_2024_12	SF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_SF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354450_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF	1,416.58	Cooling Res	0.0009474181	1.342094	6.0	\$3,847.73	3.1
354450_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF	6,759.78	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354450_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_MF	462.17	Cooling Res ER2	0.0009474181	0.437868	12.0	\$0.00	
354450_2024_12	MF	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_MF	6,759.78	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354451_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,030.24	Cooling Res	0.0009474181	0.976068	6.0	\$3,847.73	3.1
354451_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF_CompE	2,304.47	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354451_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_MF_CompE	336.13	Cooling Res ER2	0.0009474181	0.318456	12.0	\$0.00	
354451_2024_12	MFc	ASHP-SEER19-Replace_CAC_ElectricHeat_ER2_MF_CompE	2,304.47	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354460_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF	1,416.58	Cooling Res	0.0009474181	1.342094	6.0	\$469.46	3.1
354460_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354460_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_MF	462.17	Cooling Res ER2	0.0009474181	0.437868	12.0	\$0.00	
354460_2024_12	MF	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354461_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF_CompE	1,030.24	Cooling Res	0.0009474181	0.976068	6.0	\$879.86	3.1
354461_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354461_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_MF_CompE	336.13	Cooling Res ER2	0.0009474181	0.318456	12.0	\$0.00	
354461_2024_12	MFc	ASHP-SEER19-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354500_2024_12	MF	ASHP-SEER19_ER1_MF	1,507.97	Cooling Res	0.0009474181	1.428678	6.0	\$1,077.52	3.3
354500_2024_12	MF	ASHP-SEER19_ER1_MF	1,798.76	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354500_2024_12	MF	ASHP-SEER19_ER2_MF	386.93	Cooling Res ER2	0.0009474181	0.366584	12.0	\$0.00	
354500_2024_12	MF	ASHP-SEER19_ER2_MF	1,080.90	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354501_2024_12	MFc	ASHP-SEER19_ER1_MF_CompE	1,096.71	Cooling Res	0.0009474181	1.039043	6.0	\$1,077.52	3.3
354501_2024_12	MFc	ASHP-SEER19_ER1_MF_CompE	613.21	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354501_2024_12	MFc	ASHP-SEER19_ER2_MF_CompE	281.41	Cooling Res ER2	0.0009474181	0.266613	12.0	\$0.00	
354501_2024_12	MFc	ASHP-SEER19_ER2_MF_CompE	368.49	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354550_2024_12	SF	ASHP-SEER20_ER1_SF	2,257.71	Cooling Res	0.0009474181	2.138995	6.0	\$1,077.70	2.6
354550_2024_12	SF	ASHP-SEER20_ER1_SF	2,572.52	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354550_2024_12	SF	ASHP-SEER20_ER2_SF	614.66	Cooling Res ER2	0.0009474181	0.582340	12.0	\$0.00	
354550_2024_12	SF	ASHP-SEER20_ER2_SF	1,707.96	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354600_2024_12	SF	ASHP-SEER20_ROF_SF	667.97	Cooling Res	0.0009474181	0.632847	18.0	\$1,081.00	2.9
354600_2024_12	SF	ASHP-SEER20_ROF_SF	1,928.68	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354650_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF	1,471.88	Cooling Res	0.0009474181	1.394486	6.0	\$3,847.73	3.1
354650_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF	6,759.78	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354650_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_MF	517.47	Cooling Res ER2	0.0009474181	0.490260	12.0	\$0.00	
354650_2024_12	MF	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_MF	6,759.78	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354651_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF_CompE	1,070.46	Cooling Res	0.0009474181	1.014173	6.0	\$3,847.73	3.1
354651_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF_CompE	2,304.47	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354651_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_MF_CompE	376.34	Cooling Res ER2	0.0009474181	0.356551	12.0	\$0.00	
354651_2024_12	MFc	ASHP-SEER20-Replace_CAC_ElectricHeat_ER2_MF_CompE	2,304.47	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354660_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF	1,471.88	Cooling Res	0.0009474181	1.394486	6.0	\$493.55	3.1
354660_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354660_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_MF	517.47	Cooling Res ER2	0.0009474181	0.490260	12.0	\$0.00	
354660_2024_12	MF	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_MF	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354661_2024_12	MFc	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF_CompE	1,070.46	Cooling Res	0.0009474181	1.014173	6.0	\$919.28	3.1
354661_2024_12	MFc	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354661_2024_12	MFc	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_MF_CompE	376.34	Cooling Res ER2	0.0009474181	0.356551	12.0	\$0.00	
354661_2024_12	MFc	ASHP-SEER20-Replace_CAC_NonElectricHeat_ER2_MF_CompE	0.00	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354700_2024_12	MF	ASHP-SEER20_ER1_MF	1,566.84	Cooling Res	0.0009474181	1.484453	6.0	\$1,077.52	3.3
354700_2024_12	MF	ASHP-SEER20_ER1_MF	1,798.76	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354700_2024_12	MF	ASHP-SEER20_ER2_MF	445.80	Cooling Res ER2	0.0009474181	0.422359	12.0	\$0.00	
354700_2024_12	MF	ASHP-SEER20_ER2_MF	1,080.90	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354701_2024_12	MFc	ASHP-SEER20_ER1_MF_CompE	1,139.52	Cooling Res	0.0009474181	1.079602	6.0	\$1,077.52	3.3
354701_2024_12	MFc	ASHP-SEER20_ER1_MF_CompE	613.21	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354701_2024_12	MFc	ASHP-SEER20_ER2_MF_CompE	324.22	Cooling Res ER2	0.0009474181	0.307172	12.0	\$0.00	
354701_2024_12	MFc	ASHP-SEER20_ER2_MF_CompE	368.49	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	

RESIDENTIAL HVAC  
Air Source Heat Pumps

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
354750_2024_12	SF	ASHP-SEER21_ER1_SF	2,498.89	Cooling Res	0.0009474181	2.367494	6.0	\$1,078.02	3.3
354750_2024_12	SF	ASHP-SEER21_ER1_SF	3,540.79	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354750_2024_12	SF	ASHP-SEER21_ER2_SF	803.95	Cooling Res ER2	0.0009474181	0.761677	12.0	\$0.00	
354750_2024_12	SF	ASHP-SEER21_ER2_SF	2,421.65	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354800_2024_12	SF	ASHP-SEER21_ROF_SF	820.00	Cooling Res	0.0009474181	0.776883	18.0	\$1,081.00	
354800_2024_12	SF	ASHP-SEER21_ROF_SF	2,434.05	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354850_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF	512.58	Cooling Res	0.0009474181	0.485628	18.0	\$3,689.00	2.8
354850_2024_12	MF	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF	6,213.11	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354851_2024_12	MFc	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF_CompE	372.79	Cooling Res	0.0009474181	0.353188	18.0	\$3,689.00	2.8
354851_2024_12	MFc	ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF_CompE	2,118.10	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354860_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF	512.58	Cooling Res	0.0009474181	0.485628	18.0	\$281.15	2.8
354860_2024_12	MF	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354861_2024_12	MFc	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF_CompE	372.79	Cooling Res	0.0009474181	0.353188	18.0	\$552.10	2.8
354861_2024_12	MFc	ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF_CompE	0.00	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354900_2024_12	MF	ASHP-SEER21_ER1_MF	1,620.10	Cooling Res	0.0009474181	1.534912	6.0	\$1,077.52	3.3
354900_2024_12	MF	ASHP-SEER21_ER1_MF	1,798.76	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354900_2024_12	MF	ASHP-SEER21_ER2_MF	499.05	Cooling Res ER2	0.0009474181	0.472809	12.0	\$0.00	
354900_2024_12	MF	ASHP-SEER21_ER2_MF	1,080.90	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354901_2024_12	MFc	ASHP-SEER21_ER1_MF_CompE	1,178.25	Cooling Res	0.0009474181	1.116295	6.0	\$1,077.52	3.3
354901_2024_12	MFc	ASHP-SEER21_ER1_MF_CompE	613.21	Heating Res	0.0000000000	0.000000	6.0	\$0.00	
354901_2024_12	MFc	ASHP-SEER21_ER2_MF_CompE	362.95	Cooling Res ER2	0.0009474181	0.343865	12.0	\$0.00	
354901_2024_12	MFc	ASHP-SEER21_ER2_MF_CompE	368.49	Heating Res ER2	0.0000000000	0.000000	12.0	\$0.00	
354950_2024_12	MF	ASHP-SEER17_ROF_MF	248.43	Cooling Res	0.0009474181	0.235367	18.0	\$630.00	3.3
354950_2024_12	MF	ASHP-SEER17_ROF_MF	1,204.98	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
354951_2024_12	MFc	ASHP-SEER17_ROF_MF_CompE	180.68	Cooling Res	0.0009474181	0.171180	18.0	\$630.00	3.3
354951_2024_12	MFc	ASHP-SEER17_ROF_MF_CompE	410.79	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355000_2024_12	MF	ASHP-SEER18_ROF_MF	321.53	Cooling Res	0.0009474181	0.304623	18.0	\$855.00	3.3
355000_2024_12	MF	ASHP-SEER18_ROF_MF	1,204.98	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355001_2024_12	MFc	ASHP-SEER18_ROF_MF_CompE	233.84	Cooling Res	0.0009474181	0.221544	18.0	\$855.00	3.3
355001_2024_12	MFc	ASHP-SEER18_ROF_MF_CompE	410.79	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355050_2024_12	MF	ASHP-SEER19_ROF_MF	386.93	Cooling Res	0.0009474181	0.366584	18.0	\$1,081.00	3.3
355050_2024_12	MF	ASHP-SEER19_ROF_MF	1,204.98	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355051_2024_12	MFc	ASHP-SEER19_ROF_MF_CompE	281.41	Cooling Res	0.0009474181	0.266613	18.0	\$1,081.00	3.3
355051_2024_12	MFc	ASHP-SEER19_ROF_MF_CompE	410.79	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355100_2024_12	MF	ASHP-SEER20_ROF_MF	445.80	Cooling Res	0.0009474181	0.422359	18.0	\$1,081.00	3.3
355100_2024_12	MF	ASHP-SEER20_ROF_MF	1,204.98	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355101_2024_12	MFc	ASHP-SEER20_ROF_MF_CompE	324.22	Cooling Res	0.0009474181	0.307172	18.0	\$1,081.00	3.3
355101_2024_12	MFc	ASHP-SEER20_ROF_MF_CompE	410.79	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355150_2024_12	MF	ASHP-SEER21_ROF_MF	499.05	Cooling Res	0.0009474181	0.472809	18.0	\$1,081.00	3.3
355150_2024_12	MF	ASHP-SEER21_ROF_MF	1,204.98	Heating Res	0.0000000000	0.000000	18.0	\$0.00	
355151_2024_12	MFc	ASHP-SEER21_ROF_MF_CompE	362.95	Cooling Res	0.0009474181	0.343865	18.0	\$1,081.00	3.3
355151_2024_12	MFc	ASHP-SEER21_ROF_MF_CompE	410.79	Heating Res	0.0000000000	0.000000	18.0	\$0.00	

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Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
356200_2024_12	MF	PTHP-SEER12-ER1_MF	459.54	Cooling Res	0.0009474181	0.435377	5.0	\$224.93	1.01
356200_2024_12	MF	PTHP-SEER12-ER1_MF	1,229.91	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356200_2024_12	MF	PTHP-SEER12-ER2_MF	16.00	Cooling Res ER2	0.0009474181	0.015159	10.0	\$0.00	
356200_2024_12	MF	PTHP-SEER12-ER2_MF	112.08	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356225_2024_12	MFc	PTHP-SEER12-ER1_MF_CompE	334.41	Cooling Res	0.0009474181	0.316826	5.0	\$224.93	1.01
356225_2024_12	MFc	PTHP-SEER12-ER1_MF_CompE	419.83	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356225_2024_12	MFc	PTHP-SEER12-ER2_MF_CompE	11.64	Cooling Res ER2	0.0009474181	0.011028	10.0	\$0.00	
356225_2024_12	MFc	PTHP-SEER12-ER2_MF_CompE	38.26	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356250_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF	522.59	Cooling Res	0.0009474181	0.495111	5.0	\$224.93	1.01
356250_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF	2,610.79	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356250_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER2_MF	16.00	Cooling Res ER2	0.0009474181	0.015159	10.0	\$0.00	
356250_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER2_MF	2,610.79	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356275_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF_CompE	380.29	Cooling Res	0.0009474181	0.360294	5.0	\$224.93	1.01
356275_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF_CompE	891.18	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356275_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER2_MF_CompE	11.64	Cooling Res ER2	0.0009474181	0.011028	10.0	\$0.00	
356275_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ER2_MF_CompE	891.18	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356300_2024_12	MF	PTHP-SEER12-ROF_MF	16.00	Cooling Res	0.0009474181	0.015159	15.0	\$84.93	1.01
356300_2024_12	MF	PTHP-SEER12-ROF_MF	112.08	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356325_2024_12	MFc	PTHP-SEER12-ROF_MF_CompE	11.64	Cooling Res	0.0009474181	0.011028	15.0	\$84.93	1.01
356325_2024_12	MFc	PTHP-SEER12-ROF_MF_CompE	38.26	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356350_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF	16.00	Cooling Res	0.0009474181	0.015159	15.0	\$84.93	1.01
356350_2024_12	MF	PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF	2,610.79	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356375_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF_CompE	11.64	Cooling Res	0.0009474181	0.011028	15.0	\$84.93	1.01
356375_2024_12	MFc	PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF_CompE	891.18	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356400_2024_12	MF	PTHP-SEER13-ER1_MF	507.53	Cooling Res	0.0009474181	0.480843	5.0	\$224.93	1.01
356400_2024_12	MF	PTHP-SEER13-ER1_MF	1,248.41	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356400_2024_12	MF	PTHP-SEER13-ER2_MF	63.99	Cooling Res ER2	0.0009474181	0.060625	10.0	\$0.00	
356400_2024_12	MF	PTHP-SEER13-ER2_MF	130.58	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356425_2024_12	MFc	PTHP-SEER13-ER1_MF_CompE	369.34	Cooling Res	0.0009474181	0.349919	5.0	\$224.93	1.01
356425_2024_12	MFc	PTHP-SEER13-ER1_MF_CompE	426.14	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356425_2024_12	MFc	PTHP-SEER13-ER2_MF_CompE	46.56	Cooling Res ER2	0.0009474181	0.044112	10.0	\$0.00	
356425_2024_12	MFc	PTHP-SEER13-ER2_MF_CompE	44.57	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356450_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF	570.58	Cooling Res	0.0009474181	0.540578	5.0	\$224.93	1.01
356450_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF	2,629.29	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356450_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER2_MF	63.99	Cooling Res ER2	0.0009474181	0.060625	10.0	\$0.00	
356450_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER2_MF	2,629.29	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356475_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF_CompE	415.22	Cooling Res	0.0009474181	0.393387	5.0	\$224.93	1.01
356475_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF_CompE	897.50	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356475_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER2_MF_CompE	46.56	Cooling Res ER2	0.0009474181	0.044112	10.0	\$0.00	
356475_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ER2_MF_CompE	897.50	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356500_2024_12	MF	PTHP-SEER13-ROF_MF	63.99	Cooling Res	0.0009474181	0.060625	15.0	\$84.93	1.01
356500_2024_12	MF	PTHP-SEER13-ROF_MF	130.58	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356525_2024_12	MFc	PTHP-SEER13-ROF_MF_CompE	46.56	Cooling Res	0.0009474181	0.044112	15.0	\$84.93	1.01
356525_2024_12	MFc	PTHP-SEER13-ROF_MF_CompE	44.57	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356550_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF	63.99	Cooling Res	0.0009474181	0.060625	15.0	\$84.93	1.01
356550_2024_12	MF	PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF	2,629.29	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356575_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF_CompE	46.56	Cooling Res	0.0009474181	0.044112	15.0	\$84.93	1.01
356575_2024_12	MFc	PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF_CompE	897.50	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356600_2024_12	MF	PTHP-SEER14-ER1_MF	548.66	Cooling Res	0.0009474181	0.519810	5.0	\$224.93	1.01
356600_2024_12	MF	PTHP-SEER14-ER1_MF	1,288.67	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356600_2024_12	MF	PTHP-SEER14-ER2_MF	105.12	Cooling Res ER2	0.0009474181	0.099593	10.0	\$0.00	
356600_2024_12	MF	PTHP-SEER14-ER2_MF	170.84	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356625_2024_12	MFc	PTHP-SEER14-ER1_MF_CompE	399.27	Cooling Res	0.0009474181	0.378276	5.0	\$224.93	1.01
356625_2024_12	MFc	PTHP-SEER14-ER1_MF_CompE	439.88	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356625_2024_12	MFc	PTHP-SEER14-ER2_MF_CompE	76.50	Cooling Res ER2	0.0009474181	0.072477	10.0	\$0.00	
356625_2024_12	MFc	PTHP-SEER14-ER2_MF_CompE	58.32	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356650_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF	611.71	Cooling Res	0.0009474181	0.579545	5.0	\$224.93	1.01
356650_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF	2,669.55	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356650_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER2_MF	105.12	Cooling Res ER2	0.0009474181	0.099593	10.0	\$0.00	
356650_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER2_MF	2,669.55	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	

RESIDENTIAL HVAC  
Packaged Terminal Air Source Heat Pumps

\*Mfc = Multifamily Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
356675_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF_CompE	445.15	Cooling Res	0.0009474181	0.421743	5.0	\$224.93	1.01
356675_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF_CompE	911.24	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356675_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER2_MF_CompE	76.50	Cooling Res ER2	0.0009474181	0.072477	10.0	\$0.00	
356675_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ER2_MF_CompE	911.24	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356700_2024_12	MF	PTHP-SEER14-ROF_MF	105.12	Cooling Res	0.0009474181	0.099593	15.0	\$84.93	1.01
356700_2024_12	MF	PTHP-SEER14-ROF_MF	170.84	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356725_2024_12	MFc	PTHP-SEER14-ROF_MF_CompE	76.50	Cooling Res	0.0009474181	0.072477	15.0	\$84.93	1.01
356725_2024_12	MFc	PTHP-SEER14-ROF_MF_CompE	58.32	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356750_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF	105.12	Cooling Res	0.0009474181	0.099593	15.0	\$84.93	1.01
356750_2024_12	MF	PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF	2,669.55	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356775_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF_CompE	76.50	Cooling Res	0.0009474181	0.072477	15.0	\$84.93	1.01
356775_2024_12	MFc	PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF_CompE	911.24	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356800_2024_12	MF	PTHP-SEER15-ER1_MF	584.31	Cooling Res	0.0009474181	0.553586	5.0	\$224.93	1.01
356800_2024_12	MF	PTHP-SEER15-ER1_MF	1,328.35	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356800_2024_12	MF	PTHP-SEER15-ER2_MF	140.77	Cooling Res ER2	0.0009474181	0.133368	10.0	\$0.00	
356800_2024_12	MF	PTHP-SEER15-ER2_MF	210.52	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356825_2024_12	MFc	PTHP-SEER15-ER1_MF_CompE	425.21	Cooling Res	0.0009474181	0.402852	5.0	\$224.93	1.01
356825_2024_12	MFc	PTHP-SEER15-ER1_MF_CompE	453.43	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356825_2024_12	MFc	PTHP-SEER15-ER2_MF_CompE	102.44	Cooling Res ER2	0.0009474181	0.097054	10.0	\$0.00	
356825_2024_12	MFc	PTHP-SEER15-ER2_MF_CompE	71.86	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356850_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF	647.36	Cooling Res	0.0009474181	0.613321	5.0	\$224.93	1.01
356850_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF	2,709.23	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356850_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER2_MF	140.77	Cooling Res ER2	0.0009474181	0.133368	10.0	\$0.00	
356850_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER2_MF	2,709.23	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356875_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF_CompE	471.09	Cooling Res	0.0009474181	0.446319	5.0	\$224.93	1.01
356875_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF_CompE	924.79	Heating Res	0.0000000000	0.000000	5.0	\$0.00	
356875_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER2_MF_CompE	102.44	Cooling Res ER2	0.0009474181	0.097054	10.0	\$0.00	
356875_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ER2_MF_CompE	924.79	Heating Res ER2	0.0000000000	0.000000	10.0	\$0.00	
356900_2024_12	MF	PTHP-SEER15-ROF_MF	140.77	Cooling Res	0.0009474181	0.133368	15.0	\$84.93	1.01
356900_2024_12	MF	PTHP-SEER15-ROF_MF	210.52	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356925_2024_12	MFc	PTHP-SEER15-ROF_MF_CompE	102.44	Cooling Res	0.0009474181	0.097054	15.0	\$84.93	1.01
356925_2024_12	MFc	PTHP-SEER15-ROF_MF_CompE	71.86	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356950_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF	140.77	Cooling Res	0.0009474181	0.133368	15.0	\$84.93	1.01
356950_2024_12	MF	PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF	2,709.23	Heating Res	0.0000000000	0.000000	15.0	\$0.00	
356975_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF_CompE	102.44	Cooling Res	0.0009474181	0.097054	15.0	\$84.93	1.01
356975_2024_12	MFc	PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF_CompE	924.79	Heating Res	0.0000000000	0.000000	15.0	\$0.00	

RESIDENTIAL HVAC

Learning Thermostat / Advanced Thermostat

\*CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
357100_2024_12	SF	Learning Thermostat - New ASHP heating/cooling SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357100_2024_12	SF	Learning Thermostat - New ASHP heating/cooling SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357101_2024_12	MF	Learning Thermostat - New ASHP heating/cooling MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357101_2024_12	MF	Learning Thermostat - New ASHP heating/cooling MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357102_2024_12	SF	Learning Thermostat - Existing ASHP heating/cooling SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357102_2024_12	SF	Learning Thermostat - Existing ASHP heating/cooling SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357103_2024_12	MF	Learning Thermostat - Existing ASHP heating/cooling MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357103_2024_12	MF	Learning Thermostat - Existing ASHP heating/cooling MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357104_2024_12	MF	Learning Thermostat - electric furnace heating / New Central AC MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357104_2024_12	MF	Learning Thermostat - electric furnace heating / New Central AC MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357105_2024_12	SF	Learning Thermostat - electric furnace heating / New Central AC SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357105_2024_12	SF	Learning Thermostat - electric furnace heating / New Central AC SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357106_2024_12	SF	Learning Thermostat - Gas Heated / New Central AC SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357106_2024_12	SF	Learning Thermostat - Gas Heated / New Central AC SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357107_2024_12	MF	Learning Thermostat - Gas Heated / New Central AC MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357107_2024_12	MF	Learning Thermostat - Gas Heated / New Central AC MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357108_2024_12	MF	Learning Thermostat - electric furnace heating / Existing Central AC MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357108_2024_12	MF	Learning Thermostat - electric furnace heating / Existing Central AC MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357109_2024_12	SF	Learning Thermostat - electric furnace heating / Existing Central AC SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357109_2024_12	SF	Learning Thermostat - electric furnace heating / Existing Central AC SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357110_2024_12	SF	Learning Thermostat - Gas Heated / Existing Central AC SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357110_2024_12	SF	Learning Thermostat - Gas Heated / Existing Central AC SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357111_2024_12	MF	Learning Thermostat - Gas Heated / Existing Central AC MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357111_2024_12	MF	Learning Thermostat - Gas Heated / Existing Central AC MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357112_2024_12	SF	Learning Thermostat - Unknown SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357112_2024_12	SF	Learning Thermostat - Unknown SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
357113_2024_12	MF	Learning Thermostat - Unknown MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
357113_2024_12	MF	Learning Thermostat - Unknown MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure



RESIDENTIAL INCOME ELIGIBLE

AC Tune-Up

\*MFIEc = Multifamily Income Eligible Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
400050_2024_12	SFIE	AC General Tune-Up (no charge or coil clean) SF	141.78	Cooling RES	0.0009474181	0.134325	2.0	\$70.00	per measure
400100_2024_12	MFIE	AC General Tune-Up (no charge or coil clean) MF	92.16	Cooling RES	0.0009474181	0.087314	2.0	\$70.00	per measure
400101_2024_12	MFIEc	AC General Tune-Up (no charge or coil clean) MF CompE	67.02	Cooling RES	0.0009474181	0.063496	2.0	\$70.00	per measure
400150_2024_12	SFIE	AC Tune-up / Refrigerant charge SF	591.36	Cooling RES	0.0009474181	0.560265	2.0	\$81.00	per measure
400200_2024_12	MFIE	AC Tune-up / Refrigerant charge MF	384.39	Cooling RES	0.0009474181	0.364178	2.0	\$81.00	per measure
400201_2024_12	MFIEc	AC Tune-up / Refrigerant charge MF CompE	279.55	Cooling RES	0.0009474181	0.264851	2.0	\$81.00	per measure
400250_2024_12	SFIE	AC Tune-up / Indoor Coil (Evaporator) Cleaning SF	97.88	Cooling RES	0.0009474181	0.092733	2.0	\$63.00	per measure
400300_2024_12	MFIE	AC Tune-up /Indoor Coil (Evaporator) Cleaning MF	63.62	Cooling RES	0.0009474181	0.060275	2.0	\$63.00	per measure
400301_2024_12	MFIEc	AC Tune-up /Indoor Coil (Evaporator) Cleaning MF CompE	46.27	Cooling RES	0.0009474181	0.043837	2.0	\$63.00	per measure
400350_2024_12	SFIE	AC Tune-up /Outdoor Coil (Condenser) Cleaning SF	195.75	Cooling RES	0.0009474181	0.185457	2.0	\$31.00	per measure
400400_2024_12	MFIE	AC Tune-up /Outdoor Coil (Condenser) Cleaning MF	127.24	Cooling RES	0.0009474181	0.120549	2.0	\$31.00	per measure
400401_2024_12	MFIEc	AC Tune-up /Outdoor Coil (Condenser) Cleaning MF CompE	92.54	Cooling RES	0.0009474181	0.087674	2.0	\$31.00	per measure
400410_2024_12	SFIE	AC Tune-up / Packaged Service SF	368.11	Cooling RES	0.0009474181	0.348754	2.0	\$185.00	per measure
400411_2024_12	MFIE	AC Tune-up / Packaged Service MF	239.27	Cooling RES	0.0009474181	0.226689	2.0	\$185.00	per measure
400412_2024_12	MFIEc	AC Tune-up / Packaged Service MF CompE	174.01	Cooling RES	0.0009474181	0.16486	2.0	\$185.00	per measure

Air Sealing

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units (sq. ft)
400450_2024_12	MFIE	Air Sealing (Infiltration reduction) - 30% MF IE DI electric furnace base	0.330	Building Shell RES	0.0004660805	0.29	0.04	0.000154	20.0	\$0.12	1.0
400500_2024_12	MFIE	Air Sealing (Infiltration reduction) - 30% MF IE DI heat pump base	0.250	Building Shell RES	0.0004660805	0.21	0.04	0.000117	20.0	\$0.12	1.0
400501_2022_12	MFIE	Air Sealing (Infiltration reduction) - 30% MF IE DI gas furnace base	0.050	Building Shell RES	0.0004660805	0.01	0.04	0.000023	20.0	\$0.12	1.0
400550_2024_12	SFIE	Air Sealing (Infiltration reduction) - 30% SF IE DI electric furnace base	0.360	Building Shell RES	0.0004660805	0.308	0.05	0.000168	20.0	\$0.12	1.0
400551_2024_12	SFIE	Air Sealing (Infiltration reduction) - 30% SF IE DI Gas furnace base	0.060	Building Shell RES	0.0004660805	0.012	0.050	0.000028	20.0	\$0.12	1.0
400600_2024_12	SFIE	Air Sealing (Infiltration reduction) - 30% SF IE DI heat pump base	0.310	Building Shell RES	0.0004660805	0.26	0.05	0.000144	20.0	\$0.12	1.0
400650_2024_12	SFIE	MH Adjusted Air Sealing (Infiltration reduction) - 30% SF IE DI electric furnace base	0.480	Building Shell RES	0.0004660805	0.41	0.06	0.000224	20.0	\$0.12	1.0
400651_2024_12	SFIE	MH Adjusted Air Sealing (Infiltration reduction) - 30% SF IE DI heat pump base	0.450	Building Shell RES	0.0004660805	0.39	0.06	0.000210	20.0	\$0.12	1.0
400652_2024_12	SFIE	MH Adjusted Air Sealing (Infiltration reduction) - 30% SF IE DI gas furnace base	0.080	Building Shell RES	0.0004660805	0.02	0.06	0.000037	20.0	\$0.12	1.0

Ceiling Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units - area of ceiling/attic (ft2)
400700_2024_12	MFIE	Ceiling Insulation R11-R49 MF IE DI electric furnace base	0.91	Building Shell RES	0.0004660805	0.8	0.10	0.000424	30.0	\$2.12	1.0
400750_2024_12	MFIE	Ceiling Insulation R11-R49 MF IE DI heat pump base	0.61	Building Shell RES	0.0004660805	0.5	0.11	0.000284	30.0	\$2.12	1.0
400800_2024_12	MFIE	Ceiling Insulation R11-R49 MF IE DI gas heat electric cool base	0.14	Building Shell RES	0.0004660805	0.0	0.10	0.000065	30.0	\$2.12	1.0
400850_2024_12	SFIE	Ceiling Insulation R11-R49 SF IE DI electric furnace base	0.91	Building Shell RES	0.0004660805	0.8	0.10	0.000424	30.0	\$2.12	1.0
400900_2024_12	SFIE	Ceiling Insulation R11-R49 SF IE DI heat pump base	0.61	Building Shell RES	0.0004660805	0.5	0.11	0.000284	30.0	\$2.12	1.0
400950_2024_12	SFIE	Ceiling Insulation R11-R49 SF IE DI gas heat electric cool base	0.14	Building Shell RES	0.0004660805	0.0	0.10	0.000065	30.0	\$2.12	1.0
401000_2024_12	MFIE	Ceiling Insulation R5-R30 MF IE DI electric furnace base	1.49	Building Shell RES	0.0004660805	1.3	0.16	0.000694	30.0	\$1.16	1.0
401050_2024_12	MFIE	Ceiling Insulation R5-R30 MF IE DI heat pump base	1.00	Building Shell RES	0.0004660805	0.8	0.18	0.000466	30.0	\$1.16	1.0
401100_2024_12	MFIE	Ceiling Insulation R5-R30 MF IE DI gas heat electric cool base	0.22	Building Shell RES	0.0004660805	0.1	0.16	0.000103	30.0	\$1.16	1.0
401150_2024_12	SFIE	Ceiling Insulation R5-R30 SF IE DI electric furnace base	1.49	Building Shell RES	0.0004660805	1.3	0.16	0.000694	30.0	\$1.16	1.0
401200_2024_12	SFIE	Ceiling Insulation R5-R30 SF IE DI heat pump base	1.00	Building Shell RES	0.0004660805	0.8	0.18	0.000466	30.0	\$1.16	1.0
401250_2024_12	SFIE	Ceiling Insulation R5-R30 SF IE DI gas heat electric cool base	0.22	Building Shell RES	0.0004660805	0.1	0.16	0.000103	30.0	\$1.16	1.0
401300_2024_12	MFIE	Ceiling Insulation R5-R38 MF IE DI electric furnace base	1.60	Building Shell RES	0.0004660805	1.4	0.18	0.000746	30.0	\$1.68	1.0
401350_2024_12	MFIE	Ceiling Insulation R5-R38 MF IE DI heat pump base	1.07	Building Shell RES	0.0004660805	0.9	0.19	0.000499	30.0	\$1.68	1.0
401400_2024_12	MFIE	Ceiling Insulation R5-R38 MF IE DI gas heat electric cool base	0.24	Building Shell RES	0.0004660805	0.1	0.18	0.000112	30.0	\$1.68	1.0
401450_2024_12	SFIE	Ceiling Insulation R5-R38 SF IE DI electric furnace base	1.60	Building Shell RES	0.0004660805	1.4	0.18	0.000746	30.0	\$1.68	1.0
401500_2024_12	SFIE	Ceiling Insulation R5-R38 SF IE DI heat pump base	1.07	Building Shell RES	0.0004660805	0.9	0.19	0.000499	30.0	\$1.68	1.0
401550_2024_12	SFIE	Ceiling Insulation R5-R38 SF IE DI gas heat electric cool base	0.24	Building Shell RES	0.0004660805	0.1	0.18	0.000112	30.0	\$1.68	1.0
401600_2024_12	MFIE	Ceiling Insulation R5-R49 MF IE DI electric furnace base	1.69	Building Shell RES	0.0004660805	1.5	0.19	0.000788	30.0	\$2.57	1.0
401650_2024_12	MFIE	Ceiling Insulation R5-R49 MF IE DI heat pump base	1.14	Building Shell RES	0.0004660805	0.9	0.21	0.000531	30.0	\$2.57	1.0
401700_2024_12	MFIE	Ceiling Insulation R5-R49 MF IE DI gas heat electric cool base	0.25	Building Shell RES	0.0004660805	0.1	0.19	0.000117	30.0	\$2.57	1.0
401750_2024_12	SFIE	Ceiling Insulation R5-R49 SF IE DI electric furnace base	1.69	Building Shell RES	0.0004660805	1.5	0.19	0.000788	30.0	\$2.57	1.0
401800_2024_12	SFIE	Ceiling Insulation R5-R49 SF IE DI heat pump base	1.14	Building Shell RES	0.0004660805	0.9	0.21	0.000531	30.0	\$2.57	1.0
401850_2024_12	SFIE	Ceiling Insulation R5-R49 SF IE DI gas heat electric cool base	0.25	Building Shell RES	0.0004660805	0.1	0.19	0.000117	30.0	\$2.57	1.0
401900_2024_12	MFIE	Ceiling Insulation R5-R60 MF IE DI electric furnace base	1.76	Building Shell RES	0.0004660805	1.6	0.20	0.000820	30.0	\$3.42	1.0
401950_2024_12	MFIE	Ceiling Insulation R5-R60 MF IE DI heat pump base	1.18	Building Shell RES	0.0004660805	1.0	0.21	0.000550	30.0	\$3.42	1.0
402000_2024_12	MFIE	Ceiling Insulation R5-R60 MF IE DI gas heat electric cool base	0.26	Building Shell RES	0.0004660805	0.1	0.20	0.000121	30.0	\$3.42	1.0
402050_2024_12	SFIE	Ceiling Insulation R5-R60 SF IE DI electric furnace base	1.76	Building Shell RES	0.0004660805	1.6	0.20	0.000820	30.0	\$3.42	1.0
402100_2024_12	SFIE	Ceiling Insulation R5-R60 SF IE DI heat pump base	1.18	Building Shell RES	0.0004660805	1.0	0.21	0.000550	30.0	\$3.42	1.0
402150_2024_12	SFIE	Ceiling Insulation R5-R60 SF IE DI gas heat electric cool base	0.26	Building Shell RES	0.0004660805	0.1	0.20	0.000121	30.0	\$3.42	1.0

RESIDENTIAL INCOME ELIGIBLE

Floor Insulation

\*MH = Mobile Home

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units - area of floor (ft2)
402200_2024_12	SFIE	Floor Insulation R25 (R-3.96 base) MH electric furnace/baseboard and electric cooling	2.05	Building Shell RES	0.0004660805	1.81	0.24	0.000955	30.0	\$0.68	1.0
402201_2024_12	SFIE	Floor Insulation R25 (R-3.96 base) MH heat pump and electric cooling	1.36	Building Shell RES	0.0004660805	1.12	0.24	0.000634	30.0	\$0.68	1.0
402202_2024_12	SFIE	Floor Insulation R25 (R-3.96 base) MH gas furnace/baseboard and electric cooling	0.24	Building Shell RES	0.0004660805	0.00	0.24	0.000112	30.0	\$0.68	1.0
402203_2024_12	SFIE	Floor Insulation R25 (R-13 base) MH electric furnace/baseboard and electric cooling	0.20	Building Shell RES	0.0004660805	0.18	0.02	0.000093	30.0	\$0.68	1.0
402204_2024_12	SFIE	Floor Insulation R25 (R-13 base) MH heat pump and electric cooling	0.11	Building Shell RES	0.0004660805	0.09	0.02	0.000051	30.0	\$0.68	1.0
402205_2024_12	SFIE	Floor Insulation R25 (R-13 base) MH gas furnace/baseboard and electric cooling	0.02	Building Shell RES	0.0004660805	0.00	0.02	0.000009	30.0	\$0.68	1.0

Dirty Filter Alarm

\*MFIEc = Multifamily Income Eligible Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units
402250_2024_12	MFIE	Dirty Filter Alarm, MFIE	68.45	HVAC RES	0.0004660805	43.3	25.2	0.031903	5.0	\$5.00	per measure
402251_2024_12	MFIEc	Dirty Filter Alarm, MFIE, CompE	33.06	HVAC RES	0.0004660805	14.8	18.3	0.015409	5.0	\$5.00	per measure

Duct Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	ΔkWhCooling	ΔkWhHeating	Δtherms	kW	EUL	Inc. Cost*	Units - DuctLength (ft.)
402300_2024_12	SFIE	Duct Insulation - Electric Heating	22.80	HVAC RES	0.0004660805	1.3	21.5	0.00	0.010627	20.0	\$4.22	1.0
402350_2024_12	SFIE	Mobile Home Adjusted Duct Insulation - Electric Heating	22.80	HVAC RES	0.0004660805	1.3	21.5	0.00	0.010627	20.0	\$4.22	1.0
402400_2024_12	SFIE	Duct Insulation - Gas Heating	2.49	HVAC RES	0.0004660805	1.3	1.2	1.32	0.001161	20.0	\$4.22	1.0

Duct Repair (Duct Sealing and Repair - Methodology 3)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	ΔkWhCooling	ΔkWhHeating	kW	EUL	Inc. Cost*	Units - DuctLength (ft.)
402450_2024_12	SFIE	Duct Repair (Sealing) - Electric Heating SF	4.92	HVAC RES	0.0004660805	0.8	4.1	0.002293	20.0	\$8.04	1.0
402451_2024_12	SFIE	Duct Repair (Sealing) - Gas Heating SF	1.00	HVAC RES	0.0004660805	0.8	0.2	0.000466	20.0	\$8.04	1.0
402452_2024_12	MFIE	Duct Repair (Sealing) - Electric Heating MF Adjusted	4.11	HVAC RES	0.0004660805	0.70	3.41	0.001916	20.0	\$8.04	1.0
402453_2024_12	MFIE	Duct Repair (Sealing) - Gas Heating MF Adjusted	0.87	HVAC RES	0.0004660805	0.70	0.17	0.000405	20.0	\$8.04	1.0
402500_2024_12	SFIE	Duct Repair (Sealing) - Electric Heating MH Adjusted	6.01	HVAC RES	0.0004660805	1.0	5.1	0.002801	20.0	\$8.04	1.0
402501_2024_12	SFIE	Duct Repair (Sealing) - Gas Heating MH Adjusted	1.19	HVAC RES	0.0004660805	1.0	0.2	0.000555	20.0	\$8.04	1.0

ECM/ Blower Motor

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	Auto kWh	Continuous kWh	kW	EUL	Inc. Cost	Units
402600_2024_12	SFIE	ECM Auto Fan Early Replacement ER1 (Full Cost) - SF	579.09	HVAC RES	0.0004660805	264.1	28.2	286.7	0.0	0.269903	6	\$262.50	per measure
402600_2024_12	SFIE	ECM Auto Fan Early Replacement ER2 (Remaining Life) - SF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000	0	\$0.00	per measure
402700_2024_12	SFIE	ECM Continuous Fan Early Replacement ER1 (Full Cost) - SF	579.09	HVAC RES	0.0004660805	264.1	28.2	0.0	286.7	0.269903	6	\$262.50	per measure
402700_2024_12	SFIE	ECM Continuous Fan Early Replacement ER2 (Remaining Life) - SF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000	0	\$0.00	per measure
402800_2024_12	MFIE	ECM Auto Fan Early Replacement ER1 (Full Cost) - MF	579.09	HVAC RES	0.0004660805	264.1	28.2	286.7	0.0	0.269903	6	\$262.50	per measure
402800_2024_12	MFIE	ECM Auto Fan Early Replacement ER2 (Remaining Life) - MF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000	0	\$0.00	per measure
402900_2024_12	MFIE	ECM Continuous Fan Early Replacement ER1 (Full Cost) - MF	579.09	HVAC RES	0.0004660805	264.1	28.2	0.0	286.7	0.269903	6	\$262.50	per measure
402900_2024_12	MFIE	ECM Continuous Fan Early Replacement ER2 (Remaining Life) - MF	0.00	HVAC RES ER2	0.0004660805	0.0	0.0	0.0	0.0	0.000000	0	\$0.00	per measure

Note: As part of the Code of Federal Regulations, energy conservation standards for covered residential furnace fans became effective on July 3, 2019 (10 CFR 430.32(y)). This code requirement effectively makes ECMs part of the baseline for New Construction (NC). Replace-on-Fail (ROF), Time-of-Replacement (TOS), and Early Replacement (EREP) scenarios. Savings are only allowable for EREP measures, for the remaining useful life of the existing equipment (ER1, 6 years). Therefore, the EUL of the measure is assumed to be 6 years.

RESIDENTIAL INCOME ELIGIBLE

Heat Pump (HP) Tune-up

\*MFIEC = Multifamily Income Eligible Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
402950_2019_12	SFIE	General HP tune-up (no charge or coil clean)	141.72	Cooling RES	0.0009474181	0.134268	2.0	\$70.00	per measure
402950_2019_12	SFIE	General HP tune-up (no charge or coil clean)	114.06	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403000_2019_12	MFIE	General HP tune-up (no charge or coil clean)	87.28	Cooling RES	0.0009474181	0.082691	2.0	\$70.00	per measure
403000_2019_12	MFIE	General HP tune-up (no charge or coil clean)	70.25	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403050_2019_12	SFIE	HP tune-up / Refrigerant charge SF	591.08	Cooling RES	0.0009474181	0.560000	2.0	\$81.00	per measure
403050_2019_12	SFIE	HP tune-up / Refrigerant charge SF	549.10	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403100_2019_12	MFIE	HP tune-up / Refrigerant charge MF	364.03	Cooling RES	0.0009474181	0.344889	2.0	\$81.00	per measure
403100_2019_12	MFIE	HP tune-up / Refrigerant charge MF	338.18	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403101_2019_12	MFIEC	HP tune-up / Refrigerant charge MF CompE	264.75	Cooling RES	0.0009474181	0.250829	2.0	\$81.00	per measure
403101_2019_12	MFIEC	HP tune-up / Refrigerant charge MF CompE	115.29	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403150_2019_12	SFIE	HP tune-up / Indoor Coil (Evaporator) Cleaning SF	97.83	Cooling RES	0.0009474181	0.092686	2.0	\$63.00	per measure
403150_2019_12	SFIE	HP tune-up / Indoor Coil (Evaporator) Cleaning SF	77.73	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403200_2019_12	MFIE	HP tune-up / Indoor Coil (Evaporator) Cleaning MF	60.25	Cooling RES	0.0009474181	0.057082	2.0	\$63.00	per measure
403200_2019_12	MFIE	HP tune-up / Indoor Coil (Evaporator) Cleaning MF	47.87	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403201_2019_12	MFIEC	HP tune-up / Indoor Coil (Evaporator) Cleaning MF CompE	43.82	Cooling RES	0.0009474181	0.041516	2.0	\$63.00	per measure
403201_2019_12	MFIEC	HP tune-up / Indoor Coil (Evaporator) Cleaning MF CompE	16.32	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403250_2019_12	SFIE	HP tune-up / Outdoor Coil (Condenser) Cleaning SF	195.66	Cooling RES	0.0009474181	0.185372	2.0	\$31.00	per measure
403250_2019_12	SFIE	HP tune-up / Outdoor Coil (Condenser) Cleaning SF	160.04	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403300_2019_12	MFIE	HP tune-up / Outdoor Coil (Condenser) Cleaning MF	120.50	Cooling RES	0.0009474181	0.114164	2.0	\$31.00	per measure
403300_2019_12	MFIE	HP tune-up / Outdoor Coil (Condenser) Cleaning MF	98.57	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403301_2019_12	MFIEC	HP tune-up / Outdoor Coil (Condenser) Cleaning MF CompE	87.64	Cooling RES	0.0009474181	0.083032	2.0	\$31.00	per measure
403301_2019_12	MFIEC	HP tune-up / Outdoor Coil (Condenser) Cleaning MF CompE	33.60	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403310_2021_12	SFIE	HP tune-up / Packaged Service SF	367.93	Cooling RES	0.0009474181	0.348584	2.0	\$185.00	per measure
403310_2021_12	SFIE	HP tune-up / Packaged Service SF	1180.10	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403311_2021_12	MFIE	HP tune-up / Packaged Service MF	226.60	Cooling RES	0.0009474181	0.214685	2.0	\$185.00	per measure
403311_2021_12	MFIE	HP tune-up / Packaged Service MF	726.80	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure
403312_2021_12	MFIEC	HP tune-up / Packaged Service MF CompE	164.80	Cooling RES	0.0009474181	0.156135	2.0	\$185.00	per measure
403312_2021_12	MFIEC	HP tune-up / Packaged Service MF CompE	247.77	Heating RES	0.0000000000	0.000000	2.0	\$0.00	per measure

Low Flow Faucet Aerators (Bathroom)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
403350_2024_12	MFIE	Low Flow Bathroom Faucet Aerator MFIE	20.52	Water heating RES	0.0000887318	0.054	0.001821	10.0	\$3.00	per measure
403351_2024_12	SFIE	Low Flow Bathroom Faucet Aerator SFIE	20.52	Water heating RES	0.0000887318	0.054	0.001821	10.0	\$3.00	per measure
403400_2024_12	MFIE DI	Low Flow Bathroom Faucet Aerator MFIE DI	40.62	Water heating RES	0.0000887318	0.054	0.003604	10.0	\$11.33	per measure
403450_2024_12	SFIE DI	Low Flow Bathroom Faucet Aerator SFIE DI	40.62	Water heating RES	0.0000887318	0.054	0.003604	10.0	\$11.33	per measure

Low Flow Faucet Aerators (Kitchen)

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
403470_2024_12	MFIE	Low Flow Kitchen Faucet Aerator MFIE	51.03	Water Heating RES	0.0000887318	0.086	0.004528	10.0	\$3.00	per measure
403471_2024_12	SFIE	Low Flow Kitchen Faucet Aerator SFIE	51.03	Water Heating RES	0.0000887318	0.086	0.004528	10.0	\$3.00	per measure
403480_2024_12	MFIE DI	Low Flow Kitchen Faucet Aerator MFIE DI	121.19	Water Heating RES	0.0000887318	0.086	0.010753	10.0	\$11.33	per measure
403481_2024_12	SFIE DI	Low Flow Kitchen Faucet Aerator SFIE DI	121.19	Water Heating RES	0.0000887318	0.086	0.010753	10.0	\$11.33	per measure

Low Flow Showerheads

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
403500_2024_12	MFIE	Low Flow Showerhead MFIE	235.01	Water heating RES	0.0000887318	0.116	0.020853	10.0	\$7.00	per measure
403550_2024_12	MFIE DI	Low Flow Showerhead MFIE DI	248.01	Water heating RES	0.0000887318	0.116	0.022006	10.0	\$15.33	per measure
403551_2024_12	MFIE DI	Low Flow Handheld Showerhead MFIE DI	248.01	Water heating RES	0.0000887318	0.116	0.022006	10.0	\$23.35	per measure
403600_2024_12	SFIE DI	Low Flow Showerhead SFIE DI	207.70	Water heating RES	0.0000887318	0.116	0.018430	10.0	\$15.33	per measure
403601_2024_12	SFIE DI	Low Flow Handheld Showerhead SFIE DI	207.70	Water heating RES	0.0000887318	0.116	0.018430	10.0	\$23.35	per measure

Pipe Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
403750_2019_12	MFIE	Pipe Insulation MFIE	4.64	Water heating RES	0.0000887318	0.000412	12.0	\$7.10	per foot
403700_2019_12	MFIE DI	Pipe Insulation MFIE DI	4.64	Water heating RES	0.0000887318	0.000412	12.0	\$5.66	per foot
403750_2019_12	SFIE DI	Pipe Insulation SFIE DI	4.64	Water heating RES	0.0000887318	0.000412	12.0	\$5.66	per foot

RESIDENTIAL INCOME ELIGIBLE

Programmable Thermostat

\*MFLIC = Multifamily Low Income Comprehensive Envelope, CompE = Comprehensive Envelope

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
403800_2019_12	MFIE	Setback thermostat - full setback - ASHP heating/cooling MF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403800_2019_12	MFIE	Setback thermostat - full setback - ASHP heating/cooling MF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
403801_2019_12	MFIEc	Setback thermostat - full setback - ASHP heating/cooling MF_CompE	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403801_2019_12	MFIEc	Setback thermostat - full setback - ASHP heating/cooling MF_CompE	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
403850_2024_12	SFIE	Setback thermostat - full setback - ASHP heating/cooling SF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403850_2024_12	SFIE	Setback thermostat - full setback - ASHP heating/cooling SF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
403900_2019_12	MFIE	Setback thermostat - full setback - elec furnace heating / central AC MF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403900_2019_12	MFIE	Setback thermostat - full setback - elec furnace heating / central AC MF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
403901_2019_12	MFIEc	Setback thermostat - full setback - elec furnace heating / central AC MF_CompE	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403901_2019_12	MFIEc	Setback thermostat - full setback - elec furnace heating / central AC MF_CompE	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
403950_2024_12	SFIE	Setback thermostat - full setback - elec furnace heating / central AC SF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
403950_2024_12	SFIE	Setback thermostat - full setback - elec furnace heating / central AC SF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404000_2024_12	MFIE	Setback thermostat - full setback - gas heating / central AC MF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404000_2024_12	MFIE	Setback thermostat - full setback - gas heating / central AC MF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404001_2024_12	MFIEc	Setback thermostat - full setback - gas heating / central AC MF_CompE	0.0000	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404001_2024_12	MFIEc	Setback thermostat - full setback - gas heating / central AC MF_CompE	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404050_2019_12	SFIE	Setback thermostat for SF - full setback - gas heating / central AC	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404050_2019_12	SFIE	Setback thermostat for SF - full setback - gas heating / central AC	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404100_2019_12	MFIE	Setback thermostat - full setback - Unknown MF	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404100_2019_12	MFIE	Setback thermostat - full setback - Unknown MF	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404101_2019_12	MFIEc	Setback thermostat - full setback - Unknown MF_CompE	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404101_2019_12	MFIEc	Setback thermostat - full setback - Unknown MF_CompE	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure
404150_2024_12	SFIE	Setback thermostat for SF - full setback - Unknown	0.00	Cooling RES	0.0009474181	0.000000	10.0	\$70.00	per measure
404150_2024_12	SFIE	Setback thermostat for SF - full setback - Unknown	0.00	Heating RES	0.0000000000	0.000000	10.0	\$0.00	per measure

Lighting

\*\* CFL baseline is Post 2021, EISA baseline is pre-2021 \*\*

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use - RES	kW Factor - RES	End Use - BUS	kW Factor - BUS	kWh RES	kWh BUS	kW	EUL - RES	EUL - BUS**	Inc. Cost*		Units
													SF	MF	
404450_2024_12	SFIE / MFIE	LED - 10.5W Downlight E26 IE DI	44.6	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	44.6	0.0000000	0.006651	8.0	0.0	\$1.66	\$1.66	per measure
404500_2024_12	SFIE / MFIE	LED - 10W (750-899 lumens) IEDI	22.2	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	22.2	0.0000000	0.003316	8.0	0.0	\$1.45	\$1.45	per measure
404600_2024_12	SFIE / MFIE	LED - 12W Dimmable Light Bulb IE DI	58.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	58.3	0.0000000	0.008705	8.0	0.0	\$1.66	\$1.66	per measure
404650_2024_12	SFIE / MFIE	LED - 15W (900-1399 lumens) IEDI	27.8	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	27.8	0.0000000	0.004147	8.0	0.0	\$1.45	\$1.45	per measure
404651_2024_12	SFIE / MFIE	LED - 11W Flood Light BR30 Bulb IE DI	41.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	41.9	0.0000000	0.006260	8.0	0.0	\$1.66	\$1.66	per measure
404700_2024_12	SFIE / MFIE	LED - 15W Flood Light PAR30 Bulb IE DI	69.5	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	69.5	0.0000000	0.010368	8.0	0.0	\$1.66	\$1.66	per measure
404750_2024_12	SFIE / MFIE	LED - 18W Flood Light PAR38 Bulb IE DI	87.2	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	87.2	0.0000000	0.013009	8.0	0.0	\$1.66	\$1.66	per measure
404800_2024_12	SFIE / MFIE	LED - 20W (1400-1999 lumens) IEDI	37.4	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	37.4	0.0000000	0.005575	8.0	0.0	\$1.45	\$1.45	per measure
404850_2024_12	SFIE / MFIE	LED - 4W Candelabra Specialty IE DI	23.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	23.26	0.0000000	0.003472	8.0	0.0	\$1.66	\$1.66	per measure
404950_2024_12	SFIE / MFIE	LED - 8W Globe Light G25 Bulb Specialty IE DI	61.0	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	60.9	0.0000000	0.009097	8.0	0.0	\$1.66	\$1.66	per measure
405410_2024_12	SFIE / MFIE	LED - 6W (400-749 lumens) IEDI	15.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	15.1	0.0000000	0.002250	8.0	0.0	\$1.45	\$1.45	per measure
405430_2024_12	SFIE / MFIE	LED Nightlights	28.53	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	28.5	0.0000000	0.004258	8.0	0.0	\$3.35	\$3.35	per measure

Advanced Power Strips Tier 1 and 2

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
405450_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / TOS/NC - Home Office	29.450	Miscellaneous RES	0.0001148238	0.003382	10.0	\$20.00	per measure
405451_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / DI - Home Office	29.450	Miscellaneous RES	0.0001148238	0.003382	10.0	\$30.00	per measure
405500_2024_12	SFIE / MFIE	Advanced Tier 1 Power Strips / Kits - Home Office	29.080	Miscellaneous RES	0.0001148238	0.003339	10.0	\$20.00	per measure
405550_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / TOS/NC - Home Entertainment	71.350	Miscellaneous RES	0.0001148238	0.008193	10.0	\$20.00	per measure
405551_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / DI - Home Entertainment	71.350	Miscellaneous RES	0.0001148238	0.008193	10.0	\$30.00	per measure
405600_2024_12	SFIE / MFIE	Advanced Tier 1 Power Strips / Kits - Home Entertainment	70.440	Miscellaneous RES	0.0001148238	0.008088	10.0	\$20.00	per measure
405650_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / TOS/NC - Unknown Location	56.260	Miscellaneous RES	0.0001148238	0.006460	10.0	\$20.00	per measure
405651_2021_12	SFIE / MFIE	Advanced Tier 1 Power Strips / DI - Unknown Location	56.260	Miscellaneous RES	0.0001148238	0.006460	10.0	\$30.00	per measure
405700_2024_12	SFIE / MFIE	Advanced Tier 1 Power / Kits - Unknown Location	50.590	Miscellaneous RES	0.0001148238	0.005809	10.0	\$20.00	per measure
405750_2024_12	SFIE / MFIE	Advanced Tier 2 Power Strips: Infrared, TOS/NC	177.080	Miscellaneous RES	0.0001148238	0.020333	10.0	\$65.00	per measure
405751_2024_12	SFIE / MFIE	Advanced Tier 2 Power Strips: Infrared, DI	177.080	Miscellaneous RES	0.0001148238	0.020333	10.0	\$60.00	per measure
405752_2024_12	SFIE / MFIE	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, TOS/NC	110.680	Miscellaneous RES	0.0001148238	0.012709	10.0	\$65.00	per measure
405753_2024_12	SFIE / MFIE	Advanced Tier 2 Power Strips: Infrared & Occupancy Sensor, DI	110.680	Miscellaneous RES	0.0001148238	0.012709	10.0	\$60.00	per measure

Refrigerator

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
405800_2024_12	SFIE / MFIE	Refrigerator - early replacement ER1	643.50	Refrigeration RES	0.0001285253	0.082706	5.0	\$28.00	per measure
405800_2024_12	SFIE / MFIE	Refrigerator - early replacement ER2	41.53	Refrigeration RES ER2	0.0001285253	0.005338	10.0	\$0.00	per measure
405825_2024_12	SFIE / MFIE	Refrigerator - Pre 1993 - ER1	1298.55	Refrigeration RES	0.0001285253	0.166896	5.0	\$28.00	per measure
405825_2024_12	SFIE / MFIE	Refrigerator - Pre 1993 - ER2	41.53	Refrigeration RES ER2	0.0001285253	0.005338	10.0	\$0.00	per measure

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Energy Star Room AC

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
405850_2024_12	MFIE	AC - Energy Star Room_unknown size_Thru-Wall_MF	427.46	Cooling RES	0.0009474181	0.404983	12.0	\$300.00	per measure
405900_2024_12	SFIE	AC - Energy Star Room_unknown size_Thru-Wall_SF	400.38	Cooling RES	0.0009474181	0.379327	12.0	\$300.00	per measure
405950_2024_12	MFIE	AC - Energy Star Room_unknown size_MF	427.46	Cooling RES	0.0009474181	0.404983	12.0	\$300.00	per measure
406000_2024_12	SFIE	AC - Energy Star Room_unknown size_SF	400.38	Cooling RES	0.0009474181	0.379327	12.0	\$300.00	per measure
405851_2024_12	MFIE	AC - Energy Star Room_5kBtu_Thru-Wall_MF	181.97	Cooling RES	0.0009474181	0.172402	12.0	\$300.00	per measure
405901_2024_12	SFIE	AC - Energy Star Room_5kBtu_Thru-Wall_SF	193.94	Cooling RES	0.0009474181	0.183742	12.0	\$300.00	per measure
405951_2024_12	MFIE	AC - Energy Star Room_5kBtu_MF	181.97	Cooling RES	0.0009474181	0.172402	12.0	\$300.00	per measure
406001_2024_12	SFIE	AC - Energy Star Room_5kBtu_SF	193.94	Cooling RES	0.0009474181	0.183742	12.0	\$300.00	per measure
405852_2024_12	MFIE	AC - Energy Star Room_8kBtu_Thru-Wall_MF	291.16	Cooling RES	0.0009474181	0.275850	12.0	\$300.00	per measure
405902_2024_12	SFIE	AC - Energy Star Room_8kBtu_Thru-Wall_SF	310.30	Cooling RES	0.0009474181	0.293984	12.0	\$300.00	per measure
405952_2024_12	MFIE	AC - Energy Star Room_8kBtu_MF	291.16	Cooling RES	0.0009474181	0.275850	12.0	\$300.00	per measure
406002_2024_12	SFIE	AC - Energy Star Room_8kBtu_SF	310.30	Cooling RES	0.0009474181	0.293984	12.0	\$300.00	per measure
405853_2024_12	MFIE	AC - Energy Star Room_10kBtu_Thru-Wall_MF	363.95	Cooling RES	0.0009474181	0.344813	12.0	\$300.00	per measure
405903_2024_12	SFIE	AC - Energy Star Room_10kBtu_Thru-Wall_SF	387.88	Cooling RES	0.0009474181	0.367485	12.0	\$300.00	per measure
405953_2024_12	MFIE	AC - Energy Star Room_10kBtu_MF	363.95	Cooling RES	0.0009474181	0.344813	12.0	\$300.00	per measure
406003_2024_12	SFIE	AC - Energy Star Room_10kBtu_SF	387.88	Cooling RES	0.0009474181	0.367485	12.0	\$300.00	per measure
405854_2024_12	MFIE	AC - Energy Star Room_12kBtu_Thru-Wall_MF	436.74	Cooling RES	0.0009474181	0.413775	12.0	\$300.00	per measure
405904_2024_12	SFIE	AC - Energy Star Room_12kBtu_Thru-Wall_SF	465.46	Cooling RES	0.0009474181	0.440985	12.0	\$300.00	per measure
405954_2024_12	MFIE	AC - Energy Star Room_12kBtu_MF	436.74	Cooling RES	0.0009474181	0.413775	12.0	\$300.00	per measure
406004_2024_12	SFIE	AC - Energy Star Room_12kBtu_SF	465.46	Cooling RES	0.0009474181	0.440985	12.0	\$300.00	per measure
405855_2024_12	MFIE	AC - Energy Star Room_15kBtu_Thru-Wall_MF	545.92	Cooling RES	0.0009474181	0.517214	12.0	\$300.00	per measure
405905_2024_12	SFIE	AC - Energy Star Room_15kBtu_Thru-Wall_SF	581.82	Cooling RES	0.0009474181	0.551227	12.0	\$300.00	per measure
405955_2024_12	MFIE	AC - Energy Star Room_15kBtu_MF	545.92	Cooling RES	0.0009474181	0.517214	12.0	\$300.00	per measure
406005_2024_12	SFIE	AC - Energy Star Room_15kBtu_SF	581.82	Cooling RES	0.0009474181	0.551227	12.0	\$300.00	per measure

Storm Window

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
406025_2024_12	SFIE / MFIE	Storm Window - Single Pane, Double Hung - Electric Furnace	17.27	Building Shell RES	0.0004660805	0.008049	20	\$9.29	per sq ft
406050_2024_12	SFIE / MFIE	Storm Window - Single Pane, Double Hung - Heat Pump	11.47	Building Shell RES	0.0004660805	0.005346	20	\$9.29	per sq ft
406075_2024_12	SFIE / MFIE	Storm Window - Single Pane, Double Hung - Gas Heating	2.12	Building Shell RES	0.0004660805	0.000988	20	\$9.29	per sq ft
406100_2024_12	SFIE / MFIE	Storm Window - Double Pane, Double Hung - Electric Furnace	5.77	Building Shell RES	0.0004660805	0.002689	20	\$9.29	per sq ft
406125_2024_12	SFIE / MFIE	Storm Window - Double Pane, Double Hung - Heat Pump	3.96	Building Shell RES	0.0004660805	0.001846	20	\$9.29	per sq ft
406150_2024_12	SFIE / MFIE	Storm Window - Double Pane, Double Hung - Gas Heating	1.02	Building Shell RES	0.0004660805	0.000475	20	\$9.29	per sq ft
406175_2024_12	SFIE / MFIE	Storm Window - Single Pane, Fixed - Electric Furnace	17.26	Building Shell RES	0.0004660805	0.008045	20	\$9.29	per sq ft
406200_2024_12	SFIE / MFIE	Storm Window - Single Pane, Fixed - Heat Pump	11.47	Building Shell RES	0.0004660805	0.005346	20	\$9.29	per sq ft
406225_2024_12	SFIE / MFIE	Storm Window - Single Pane, Fixed - Gas Heating	2.12	Building Shell RES	0.0004660805	0.000988	20	\$9.29	per sq ft
406250_2024_12	SFIE / MFIE	Storm Window - Double Pane, Fixed - Electric Furnace	5.49	Building Shell RES	0.0004660805	0.002559	20	\$9.29	per sq ft
406275_2024_12	SFIE / MFIE	Storm Window - Double Pane, Fixed - Heat Pump	3.71	Building Shell RES	0.0004660805	0.001729	20	\$9.29	per sq ft
406300_2024_12	SFIE / MFIE	Storm Window - Double Pane, Fixed - Gas Heating	0.85	Building Shell RES	0.0004660805	0.000396	20	\$9.29	per sq ft

Learning Thermostat / Advanced Thermostat

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
406500_2024_12	SFIE	Learning Thermostat - ASHP heating/cooling SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406500_2024_12	SFIE	Learning Thermostat - ASHP heating/cooling SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406525_2024_12	MFIE	Learning Thermostat - ASHP heating/cooling MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406525_2024_12	MFIE	Learning Thermostat - ASHP heating/cooling MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406550_2024_12	MFIE	Learning Thermostat - electric furnace heating / central AC MF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406550_2024_12	MFIE	Learning Thermostat - electric furnace heating / central AC MF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406575_2024_12	SFIE	Learning Thermostat - electric furnace heating / central AC SF	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406575_2024_12	SFIE	Learning Thermostat - electric furnace heating / central AC SF	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406600_2024_12	SFIE	Learning Thermostat - Gas Heated / central AC SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406600_2024_12	SFIE	Learning Thermostat - Gas Heated / central AC SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406625_2024_12	MFIE	Learning Thermostat - Gas Heated / central AC MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406625_2024_12	MFIE	Learning Thermostat - Gas Heated / central AC MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406650_2024_12	SFIE	Learning Thermostat - Unknown SF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406650_2024_12	SFIE	Learning Thermostat - Unknown SF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure
406675_2024_12	MFIE	Learning Thermostat - Unknown MF**	0.00	Cooling RES	0.0009474181	0.000000	11.0	\$79.00	per measure
406675_2024_12	MFIE	Learning Thermostat - Unknown MF**	0.00	Heating RES	0.0000000000	0.000000	11.0		per measure

RESIDENTIAL INCOME ELIGIBLE

Cool Roofs

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
406800_2024_12	SFIE	Cool Roof: Single Family Vintage Up to 1979-Non-Electric Heating	136.00	Building Shell RES	0.0004660805	0.063387	15.0	\$7.84	per sq ft
406801_2024_12	SFIE	Cool Roof: Single Family Vintage 1980-1999-Non-Electric Heating	73.90	Building Shell RES	0.0004660805	0.034443	15.0	\$7.84	per sq ft
406802_2024_12	SFIE	Cool Roof: Single Family Vintage 2000-2009-Non-Electric Heating	33.30	Building Shell RES	0.0004660805	0.015520	15.0	\$7.84	per sq ft
406803_2024_12	SFIE	Cool Roof: Single Family Vintage 2010-2015-Non-Electric Heating	23.90	Building Shell RES	0.0004660805	0.011139	15.0	\$7.84	per sq ft
406804_2024_12	MFIE	Cool Roof: Multi-Family Vintage Up to 1979-Non-Electric Heating	114.00	Building Shell RES	0.0004660805	0.053133	15.0	\$7.84	per sq ft
406805_2024_12	MFIE	Cool Roof: Multi-Family Vintage 1980-1999-Non-Electric Heating	58.10	Building Shell RES	0.0004660805	0.027079	15.0	\$7.84	per sq ft
406806_2024_12	MFIE	Cool Roof: Multi-Family Vintage 2000-2009-Non-Electric Heating	24.90	Building Shell RES	0.0004660805	0.011605	15.0	\$7.84	per sq ft
406807_2024_12	MFIE	Cool Roof: Multi-Family Vintage 2010-2015-Non-Electric Heating	19.50	Building Shell RES	0.0004660805	0.009089	15.0	\$7.84	per sq ft
406808_2024_12	SFIE	Cool Roof: Single Family Vintage Up to 1979-Heat Pump Heating	57.12	Building Shell RES	0.0004660805	0.026623	15.0	\$7.84	per sq ft
406809_2024_12	SFIE	Cool Roof: Single Family Vintage 1980-1999-Heat Pump Heating	31.04	Building Shell RES	0.0004660805	0.014467	15.0	\$7.84	per sq ft
406810_2024_12	SFIE	Cool Roof: Single Family Vintage 2000-2009-Heat Pump Heating	13.99	Building Shell RES	0.0004660805	0.006520	15.0	\$7.84	per sq ft
406811_2024_12	SFIE	Cool Roof: Single Family Vintage 2010-2015-Heat Pump Heating	10.04	Building Shell RES	0.0004660805	0.004679	15.0	\$7.84	per sq ft
406812_2024_12	MFIE	Cool Roof: Multi-Family Vintage Up to 1979-Heat Pump Heating	47.88	Building Shell RES	0.0004660805	0.022316	15.0	\$7.84	per sq ft
406813_2024_12	MFIE	Cool Roof: Multi-Family Vintage 1980-1999-Heat Pump Heating	24.40	Building Shell RES	0.0004660805	0.011372	15.0	\$7.84	per sq ft
406814_2024_12	MFIE	Cool Roof: Multi-Family Vintage 2000-2009-Heat Pump Heating	10.46	Building Shell RES	0.0004660805	0.004875	15.0	\$7.84	per sq ft
406815_2024_12	MFIE	Cool Roof: Multi-Family Vintage 2010-2015-Heat Pump Heating	8.19	Building Shell RES	0.0004660805	0.003817	15.0	\$7.84	per sq ft

**PAY AS YOU SAVE**

**LED Lamp**

Measure Reference No.	Program/Channel	Measure *	kWh Annual Savings	kW	End Use - RES	kW Factor - RES	End Use - BUS	kW Factor - BUS	kWh RES	kWh BUS	KW RES	KW BUS	EUL - RES	EUL - BUS**	Inc. Cost	Units
450100_2024_12	PAYS	LED - 10W (750-899 lumens) DI	29.57	0.004414	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	29.57	0.00	0.0044	0.0000	2.0	0.0	\$ 1.45	per bulb
450110_2024_12	PAYS	LED - 10.5W Downlight E26 DI	55.71	0.008316	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	55.71	0.00	0.0083	0.0000	2.0	0.0	\$ 1.66	per bulb
450120_2024_12	PAYS	LED - 15W Flood Light PAR30 Bulb DI	49.78	0.007430	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	49.78	0.00	0.0074	0.0000	2.0	0.0	\$ 1.66	per bulb
450130_2024_12	PAYS	LED - 4W Candelabra Specialty DI	30.86	0.004606	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	30.86	0.00	0.0046	0.0000	2.0	0.0	\$ 1.66	per bulb
450140_2024_12	PAYS	LED - 4.5-5.5W Globe G25 Bulb (400-500 lumens) DI	30.00	0.004478	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	30.00	0.00	0.0045	0.0000	2.0	0.0	\$ 1.66	per bulb

**Pipe Insulation**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
450300_2024_12	PAYS	Pipe Insulation DI	4.92	Water heating RES	0.0000887318	0.000437	12.0	\$7.10	per foot

**Low Flow Showerheads**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
450400_2024_12	PAYS	Low Flow Showerhead SF DI	143.62	Water heating RES	0.0000887318	0.116	0.012744	10.0	\$15.33	per measure
450401_2024_12	PAYS	Low Flow Showerhead MF DI	167.23	Water heating RES	0.0000887318	0.116	0.014839	10.0	\$15.33	per measure

**Low Flow Faucet Aerators (Bathroom)**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
450500_2024_12	PAYS	Low Flow Bathroom Faucet Aerator SF DI	34.59	Water heating RES	0.0000887318	0.054	0.003069	10.0	\$11.33	per measure
450501_2024_12	PAYS	Low Flow Bathroom Faucet Aerator MF DI	34.59	Water heating RES	0.0000887318	0.054	0.003069	10.0	\$11.33	per measure

**Low Flow Faucet Aerators (Kitchen)**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
450600_2024_12	PAYS	Low Flow Kitchen Faucet Aerator SF DI	103.20	Water Heating RES	0.0000887318	0.086	0.009157	10.0	\$11.33	per measure
450601_2024_12	PAYS	Low Flow Kitchen Faucet Aerator MF DI	103.20	Water Heating RES	0.0000887318	0.086	0.009157	10.0	\$11.33	per measure

**Advanced Power Strips Tier 1 / Load Sensing**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
450700_2024_12	PAYS	Advanced Tier 1 Power Strips DI - Home Office	23.030	Miscellaneous RES	0.0001148238	0.002644	10.0	\$30.00	per measure

RESIDENTIAL DEMAND RESPONSE

←----- Use the "Grouping" Features to expand or hide the formulas/input variables

Demand Response Advanced Thermostat

Measure Reference No.	Program/Channel	Measure [1]	Gross kWh Annual Savings [2]	End Use [3]	kW Factor [4]	Summer kW (Annual) [5]	Winter kW (Annual) [6]	EUL	Inc. Cost	Units
600050_2024_12_	DR	Summer Demand Response Advanced Thermostat - with Program-driven Optimization	0.00	-	n/a	-	-	1.0	\$0.00	per thermostat
600060_2023_12_	DR	Winter Demand Response Advanced Thermostat - with Program-driven Optimization	0.00	-	n/a	-	-	1.0	\$0.00	per thermostat
600100_2021_12_	DR	Summer Demand Response Advanced Thermostat - without Program-Driven Optimization	0.00	-	n/a	-	-	1.0	\$0.00	per thermostat
600110_2023_12_	DR	Winter Demand Response Advanced Thermostat - without Program-Driven Optimization	0.00	-	n/a	-	-	1.0	\$0.00	per thermostat

TRM Section:

3.9.2

[Note 1] As advanced thermostats mature, some models include embedded optimization routines that achieve energy savings. The program differentiates between thermostats with "program-driven optimization," which achieve savings through program influence to operate optional optimization, and without "program-driven optimization," which achieve no energy savings due to either the default optimization baseline or no optimization routine employed.

Source for Savings: Ameren MO PY2023 Final Report  
Device Optimization Energy Savings Summary, Aggregate: Table 19.

[Note 2] Total Number of Devices Enrolled at the end of the 2023 event season: Ameren Missouri Demand Response PY2023 Program Tracking Data

Gross kWh Annual Savings are calculated as the total aggregate PY2023 energy savings (502.57 MWh) divided by the number of devices active at the end of the 2023 event season (8,140).

[Note 3] End Use should be "Cooling RES" for optimization routines that save energy only during the cooling season, and "Heating RES" for optimization routines that save energy only during the heating season. For optimization routines that save energy during both cooling and heating seasons and energy savings are aggregated, the End Use may be "HVAC RES."

[Note 4] The kW factor based on end use is not used because the actual demand impacts are directly measured.

Summer demand savings are calculated for demand response events, therefore no demand savings are calculated based on the energy savings for this measure. For planning estimates a value of 0.95 kW/thermostat is assumed based on the PY23 evaluation results; refer to Table 17. Residential DR Program: Event Day Energy Savings by Device Manufacturer for the number of devices and Table 13. Residential DR Program: Resource Capability Impacts for the per account kW impacts and number of accounts.

[Note 5]

Per device kW impact is calculated as the per account kW load impact (1.13) multiplied by the number of accounts (46,213) all divided by the number of devices (54,808).

[Note 6]

Winter demand savings are calculated for demand response events. For planning estimates a value of 1.3 kW/thermostat. Calculated by examining the average hourly kW reduction during a summer event, adjusting for winter conditions by reducing the estimate by 30%, and applying an adjustment factor of 0.78. (Source: ADM Associates, Inc., "py2024\_residential\_dr\_winter\_savings\_estimation\_07.12.2024.xlsx").

**Residential demand response:** For demand and energy savings associated with calling a demand response event, smart thermostat program participants will be randomly partitioned into two groups. In this scenario, on an event day, participants in one group receive a signal to initiate activity on the thermostat, while the other group of participants would not receive this signal. As a result, the participants who receive the signal will serve as the treatment group, and the participants who do not receive a signal will serve as the control group. Demand impacts will be estimated from the average of the hours over all event periods. Energy savings impacts will be estimated from comparing the 24 hours of the control group for each event day to the 24 hours of actual kWh consumption for each event day. However, if it is not practical or plausible to use this approach (such as everyone is dispatched), other quasi experimental design approaches may be used.

**Business demand response:** For demand and energy savings associated with calling a demand response event, a customer baseline load ("CBL") approach will be used. A CBL approach applies a model or algorithm to develop customer-specific baselines for each event that are used to estimate load impacts for each hour of the event. Demand impacts will be estimated from the average of the hours over all event periods. Energy savings impacts will be estimated from comparing the 24 hours of the CBL for each event day to the 24 hours of actual kWh consumption for each event day.



**RESIDENTIAL DEMAND RESPONSE**

**Demand Response Water Heater**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor [1]	Summer kW (Annual) [2]	Winter kW (Annual) [3]	EUL	Inc. Cost	Units
600401_2024_12_	DR	Demand Response Heat Pump Water Heater Switch	0.00	-	n/a	0.2700	-	1.0	\$149.00	per unit
600402_2024_12_	DR	Demand Response Electric Resistance Water Heater Switch	0.00	-	n/a	0.2200	-	1.0	\$149.00	per unit

TRM Section: 3.9.3  
 [Note 1] The kW factor based on end use is not used because the actual demand impacts are directly measured. Summer demand savings are calculated for demand response events, therefore no demand savings are calculated based on the energy savings for this measure. These values have not been reviewed through evaluation. The demand reduction impact planning values of 0.27 kW for Heat Pump Water Heaters and 0.22 kW for Electric Water Heaters were calculated based on the percent reduction by demand response (DR) applied to the coincident peak load. Specifically:

[Note 2] Heat Pump Water Heater: The 52% reduction applied to the coincident peak load of 0.52 kW results in a demand reduction impact of 0.27 kW. Electric Water Heater: The 42% reduction applied to the coincident peak load of 0.52 kW results in a demand reduction impact of 0.22 kW. These calculations utilize the EPRI end-use loadshape database to determine the coincident peak load, as specific loadshape or peak load data for Missouri was unavailable. Therefore, the coincident peak values were derived from the SERC region data.

[Note 3] Winter demand savings are calculated for demand response events.

**Demand Response Electric Vehicle Charger**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor [1]	Summer kW (Annual) [2]	Winter kW (Annual) [3]	EUL	Inc. Cost	Units
600500_2024_12_	DR	Demand Response Electric Vehicle Charger	0.00	-	n/a	0.1600	-	1.0	\$0.00	per unit

TRM Section: 3.9.4  
 [Note 1] The kW factor based on end use is not used because the actual demand impacts are directly measured. Summer demand savings are calculated for demand response events, focusing solely on demand reduction rather than energy savings. These values have not yet been reviewed through evaluation. The demand reduction impact planning value of 0.16 kW per EV charger was calculated based on the reduction in charging amperage during a DR event applied to the coincident peak load. Specifically:

[Note 2] EV Charger: The reduction from 48 amps (11.5 kW) to 16 amps (3.8 kW) during a DR event results in a raw potential reduction of 7.7 kW. However, this is adjusted using a normalization factor of 1.513, which reflects real-world charger engagement and behavior patterns, leading to a final demand reduction impact of 0.16 kW per charger. These calculations utilize the EVIPro model and average loadshape data for EV chargers, with assumptions about charging behavior based on an 80% home charging rate. The derived values consider typical charging patterns and the likelihood that not all chargers are actively charging during peak periods.

[Note 3] Winter demand savings are calculated for demand response events.

**Behavioral Demand Response**

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor [1]	Summer kW (Annual) [2]	Winter kW (Annual) [3]	EUL	Inc. Cost	Units
600600_2024_12_	DR	Behavioral Demand Response	0.00	-	n/a	-	-	1.0	\$0.00	per unit

TRM Section: 3.9.5  
 [Note 1] The kW factor based on end use is not used because the actual demand impacts are directly measured. Summer demand savings are calculated for demand response events, therefore no demand savings are calculated based on the energy savings for this measure. These values have not been reviewed through evaluation. The demand reduction impact planning value of 0.09 kW for Behavioral Demand Response (DR) was calculated by applying a 2.4% reduction to the coincident peak load of 3.7 kW. Specifically:

[Note 2] Behavioral Demand Response: The 2.4% reduction in peak load is based on data from the American Council for an Energy-Efficient Economy (ACEEE) study. When this reduction is applied to the coincident peak load of 3.7 kW, derived from the EPRI whole premise loadshape database, the resulting demand reduction impact is 0.09 kW. Since specific loadshape data for Missouri was unavailable, the coincident peak value used in this analysis was obtained from the EPRI database, with the nearest available loadshape for Illinois serving as a proxy. The EPRI whole premise loadshape was used to approximate the total load and determine the coincident peak for this calculation.

[Note 3] Winter demand savings are calculated for demand response events.



Table below calculates a weighted average kWh and Kw value for HVAC Early Replacement (ER) vs Replace on Fail (ROF) measures based on the TRM values and the ER % Entered below (cell "BC3").														
		ER ROF				60% 40%								
		Weighted Average				Weighted Average				Weighted Average Total				
MEASURE NAME		ID	ER1 Cooling kWh	ER1 Heating kWh	ER2 Cooling kWh	ER2 Heating kWh	ER1 Cooling kW	ER1 Heating kW	ER2 Cooling kW	ER2 Heating kW	ER1 Total kWh	ER2 Total kWh	ER1 Total kW	ER2 Total kW
Mini/MultiSplitAC_ER1_MF_CompE	351551	1,002.63	-	595.35	-	0.949910	-	0.564045	-	1,002.63	595.35	0.949910	0.564045	
Mini/MultiSplitAC_ROF_MF	351600	1,023.65	-	403.45	-	0.969825	-	0.382236	-	1,023.65	403.45	0.969825	0.382236	
Mini/MultiSplitAC_ROF_MF_CompE	351601	1,002.63	-	595.35	-	0.949910	-	0.564045	-	1,002.63	595.35	0.949910	0.564045	
Mini/MultiSplitASHP_ROF_MF_NC	351650	765.81	1,388.85	268.94	930.61	0.725542	-	0.254799	-	2,154.66	1,199.55	0.725542	0.254799	
Mini/MultiSplitASHP_ROF_MF_NC_CompE	351651	502.91	527.87	176.61	422.37	0.476466	-	0.167324	-	1,030.78	598.98	0.476466	0.167324	
Mini/MultiSplitASHP_ROF_MF	351700	765.81	1,388.85	268.94	930.61	0.725542	-	0.254799	-	2,154.66	1,199.55	0.725542	0.254799	
Mini/MultiSplitASHP_ROF_MF_CompE	351701	502.91	527.87	176.61	422.37	0.476466	-	0.167324	-	1,030.78	598.98	0.476466	0.167324	
Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF	351750	780.23	4,721.55	326.30	4,721.55	0.739204	-	0.309143	-	5,501.78	5,047.85	0.739204	0.309143	
Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ER1_MF_CompE	351751	512.37	1,929.13	214.28	1,929.13	0.485429	-	0.203013	-	2,441.50	2,143.41	0.485429	0.203013	
Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF	351752	745.90	-	326.30	-	0.706679	-	0.309143	-	745.90	326.30	0.706679	0.309143	
Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ER1_MF_CompE	351753	512.37	-	214.28	-	0.485429	-	0.203013	-	512.37	214.28	0.485429	0.203013	
Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF	351800	780.23	4,721.55	326.30	4,721.55	0.739204	-	0.309143	-	5,501.78	5,047.85	0.739204	0.309143	
Mini/MultiSplitASHP-Replace_CAC_ElectricHeat_ROF_MF_CompE	351801	512.37	1,929.13	214.28	1,929.13	0.485429	-	0.203013	-	2,441.50	2,143.41	0.485429	0.203013	
Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF	351802	745.90	-	326.30	-	0.706679	-	0.309143	-	745.90	326.30	0.706679	0.309143	
Mini/MultiSplitASHP-Replace_CAC_NonElectricHeat_ROF_MF_CompE	351803	512.37	-	214.28	-	0.485429	-	0.203013	-	512.37	214.28	0.485429	0.203013	
Mini/MultiSplitASHP_ER1_MF	351850	765.81	1,388.85	268.94	930.61	0.725542	-	0.254799	-	2,154.66	1,199.55	0.725542	0.254799	
Mini/MultiSplitASHP_ER1_MF_CompE	351851	502.91	527.87	176.61	422.37	0.476466	-	0.167324	-	1,030.78	598.98	0.476466	0.167324	
DFHP-SEER19-ROF_MF	351900	398.66	545.76	-	-	0.377698	-	-	-	944.42	-	0.377698	-	
DFHP-SEER19-ROF_MF_CompE	351901	289.93	248.74	-	-	0.274685	-	-	-	538.67	-	0.274685	-	
DFHP-SEER20-ROF_MF	351950	594.40	876.06	-	-	0.563145	-	-	-	1,470.46	-	0.563145	-	
DFHP-SEER20-ROF_MF_CompE	351951	432.29	399.28	-	-	0.409559	-	-	-	831.57	-	0.409559	-	
DFHP-SEER21-ROF_MF	352000	816.63	1,268.10	-	-	0.773690	-	-	-	2,084.73	-	0.773690	-	
DFHP-SEER21-ROF_MF_CompE	352001	593.92	577.95	-	-	0.562691	-	-	-	1,171.87	-	0.562691	-	
GSHP-EER23-Replace_CAC_ElectricHeat_ROF_SF	352050	3,478.20	15,960.03	1,577.17	15,960.03	3.295310	-	1.494239	-	19,438.23	17,537.20	3.295310	1.494239	
GSHP-EER23-Replace_CAC_ElectricHeat_ER1_SF	352100	3,478.20	15,960.03	1,577.17	15,960.03	3.295310	-	1.494239	-	19,438.23	17,537.20	3.295310	1.494239	
GSHP-EER23-Replace_ASHP_ER1_SF	352200	3,196.06	4,726.40	1,385.22	4,726.40	3.028005	-	1.312383	-	7,922.46	6,111.62	3.028005	1.312383	
GSHP-EER23_ROF_SF	352250	3,196.06	4,726.40	1,385.22	4,726.40	3.028005	-	1.312383	-	7,922.46	6,111.62	3.028005	1.312383	
GSHP-EER23-Replace_GSHP_ER1_SF	352260	3,196.06	4,726.40	1,385.22	4,726.40	3.028005	-	1.312383	-	7,922.46	6,111.62	3.028005	1.312383	
ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_SF	352300	1,312.07	8,563.13	269.26	8,563.13	1.243079	-	0.255102	-	9,875.20	8,832.39	1.243079	0.255102	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_SF	352310	1,312.07	-	269.26	-	1.243079	-	0.255102	-	1,312.07	269.26	1.243079	0.255102	
ASHP-SEER15_ER1_SF	352350	1,252.01	1,425.89	121.08	909.30	1.186177	-	0.114713	-	2,677.90	1,030.38	1.186177	0.114713	
ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_SF	352400	1,312.07	8,563.13	269.26	8,563.13	1.243079	-	0.255102	-	9,875.20	8,832.39	1.243079	0.255102	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_SF	352410	1,312.07	-	269.26	-	1.243079	-	0.255102	-	1,312.07	269.26	1.243079	0.255102	
ASHP-SEER15_ROF_SF	352450	1,252.01	1,425.89	121.08	909.30	1.186177	-	0.114713	-	2,677.90	1,030.38	1.186177	0.114713	
ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_SF	352500	1,447.94	8,676.99	390.30	8,676.99	1.371805	-	0.369777	-	10,124.93	9,067.29	1.371805	0.369777	
ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_SF	352510	1,447.94	-	390.30	-	1.371805	-	0.369777	-	1,447.94	390.30	1.371805	0.369777	
ASHP-SEER16_ER1_SF	352550	1,387.72	1,597.98	241.47	1,089.75	1.314751	-	0.228773	-	2,985.70	1,331.22	1.314751	0.228773	
ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_SF	352600	1,447.94	8,676.99	390.30	8,676.99	1.371805	-	0.369777	-	10,124.93	9,067.29	1.371805	0.369777	
ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_SF	352610	1,447.94	-	390.30	-	1.371805	-	0.369777	-	1,447.94	390.30	1.371805	0.369777	
ASHP-SEER16_ROF_SF	352650	1,387.72	1,597.98	241.47	1,089.75	1.314751	-	0.228773	-	2,985.70	1,331.22	1.314751	0.228773	
ASHP-SEER15_ER1_MF	352700	1,458.67	1,423.54	105.98	826.49	1.381970	-	0.100407	-	2,882.21	932.47	1.381970	0.100407	
ASHP-SEER15_ER1_MF_CompE	352701	1,060.85	485.30	77.08	281.75	1.005068	-	0.073027	-	1,546.15	358.83	1.005068	0.073027	
ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF	352750	1,507.64	8,701.40	251.94	8,701.40	1.428365	-	0.238693	-	10,209.04	8,953.34	1.428365	0.238693	
ASHP-SEER15-Replace_CAC_ElectricHeat_ER1_MF_CompE	352751	1,096.47	2,966.39	183.23	2,966.39	1.038816	-	0.173595	-	4,062.86	3,149.62	1.038816	0.173595	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF	352760	1,507.64	-	251.94	-	1.428365	-	0.238693	-	1,507.64	251.94	1.428365	0.238693	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ER1_MF_CompE	352761	1,096.47	-	183.23	-	1.038816	-	0.173595	-	1,096.47	183.23	1.038816	0.173595	
ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF	352800	1,507.64	8,701.40	251.94	8,701.40	1.428365	-	0.238693	-	10,209.04	8,953.34	1.428365	0.238693	
ASHP-SEER15-Replace_CAC_ElectricHeat_ROF_MF_CompE	352801	1,096.47	2,966.39	183.23	2,966.39	1.038816	-	0.173595	-	4,062.86	3,149.62	1.038816	0.173595	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF	352810	1,507.64	-	251.94	-	1.428365	-	0.238693	-	1,507.64	251.94	1.428365	0.238693	
ASHP-SEER15-Replace_CAC_NonElectricHeat_ROF_MF_CompE	352811	1,096.47	-	183.23	-	1.038816	-	0.173595	-	1,096.47	183.23	1.038816	0.173595	
ASHP-SEER16_ER1_MF	352850	1,322.71	1,703.72	216.95	1,133.67	1.253159	-	0.205542	-	3,026.43	1,350.62	1.253159	0.205542	
ASHP-SEER16_ER1_MF_CompE	352851	961.97	580.81	157.78	386.48	0.911388	-	0.149484	-	1,542.78	544.26	0.911388	0.149484	

Table below calculates a weighted average kWh and Kw value for HVAC Early Replacement (ER) vs Replace on Fail (ROF) measures based on the TRM values and the ER % Entered below (cell "BC3").														
		ER ROF				60% 40%								
		Weighted Average				Weighted Average				Weighted Average Total				
MEASURE NAME		ID	ER1 Cooling kWh	ER1 Heating kWh	ER2 Cooling kWh	ER2 Heating kWh	ER1 Cooling kW	ER1 Heating kW	ER2 Cooling kW	ER2 Heating kW	ER1 Total kWh	ER2 Total kWh	ER1 Total kW	ER2 Total kW
ASHP-SEER16-ROF_MF		352900	1,322.71	1,703.72	216.95	1,133.67	1.253159	-	0.205542	-	3,026.43	1,350.62	1.253159	0.205542
ASHP-SEER16-ROF_MF_CompE		352901	961.97	580.81	157.78	386.48	0.911388	-	0.149484	-	1,542.78	544.26	0.911388	0.149484
ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF		352950	1,366.79	8,588.48	354.08	8,588.48	1.294922	-	0.335462	-	9,955.27	8,942.56	1.294922	0.335462
ASHP-SEER16-Replace_CAC_ElectricHeat_ROF_MF_CompE		352951	994.02	2,927.89	257.52	2,927.89	0.941753	-	0.243979	-	3,921.91	3,185.41	0.941753	0.243979
ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF		352960	1,366.79	-	354.08	-	1.294922	-	0.335462	-	1,366.79	354.08	1.294922	0.335462
ASHP-SEER16-Replace_CAC_NonElectricHeat_ROF_MF_CompE		352961	994.02	-	257.52	-	0.941753	-	0.243979	-	994.02	257.52	0.941753	0.243979
ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF		353000	1,366.79	8,588.48	354.08	8,588.48	1.294922	-	0.335462	-	9,955.27	8,942.56	1.294922	0.335462
ASHP-SEER16-Replace_CAC_ElectricHeat_ER1_MF_CompE		353001	994.02	2,927.89	257.52	2,927.89	0.941753	-	0.243979	-	3,921.91	3,185.41	0.941753	0.243979
ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF		353010	1,366.79	-	354.08	-	1.294922	-	0.335462	-	1,366.79	354.08	1.294922	0.335462
ASHP-SEER16-Replace_CAC_NonElectricHeat_ER1_MF_CompE		353011	994.02	-	257.52	-	0.941753	-	0.243979	-	994.02	257.52	0.941753	0.243979
ASHP-SEER15-ROF_MF		353050	1,458.67	1,423.54	105.98	826.49	1.381970	-	0.100407	-	2,882.21	932.47	1.381970	0.100407
ASHP-SEER15-ROF_MF_CompE		353051	1,060.85	485.30	77.08	281.75	1.005068	-	0.073027	-	1,546.15	358.83	1.005068	0.073027
ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_SF		353100	1,539.94	9,694.92	510.85	9,694.92	1.458967	-	0.483989	-	11,234.86	10,205.77	1.458967	0.483989
ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_SF		353110	1,539.94	-	510.85	-	1.458967	-	0.483989	-	1,539.94	510.85	1.458967	0.483989
ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF		353150	891.85	6,541.11	319.21	6,541.11	0.844955	-	0.302425	-	7,432.96	6,860.32	0.844955	0.302425
ASHP-SEER17-Replace_CAC_ElectricHeat_ROF_MF_CompE		353151	648.62	2,229.92	232.15	2,229.92	0.614514	-	0.219943	-	2,878.54	2,462.07	0.614514	0.219943
ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF		353160	891.85	-	319.21	-	0.844955	-	0.302425	-	891.85	319.21	0.844955	0.302425
ASHP-SEER17-Replace_CAC_NonElectricHeat_ROF_MF_CompE		353161	648.62	-	232.15	-	0.614514	-	0.219943	-	648.62	232.15	0.614514	0.219943
ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_SF		353200	1,835.95	10,174.02	680.07	10,174.02	1.739412	-	0.644311	-	12,009.97	10,854.09	1.739412	0.644311
ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_SF		353210	1,835.95	-	680.07	-	1.739412	-	0.644311	-	1,835.95	680.07	1.739412	0.644311
ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF		353250	1,449.76	7,172.18	417.64	7,172.18	1.373529	-	0.395680	-	8,621.94	7,589.82	1.373529	0.395680
ASHP-SEER18-Replace_CAC_ElectricHeat_ROF_MF_CompE		353251	613.77	2,445.06	303.74	2,445.06	0.581497	-	0.287769	-	3,058.83	2,748.80	0.581497	0.287769
ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF		353260	1,449.76	-	417.64	-	1.373529	-	0.395680	-	1,449.76	417.64	1.373529	0.395680
ASHP-SEER18-Replace_CAC_NonElectricHeat_ROF_MF_CompE		353261	613.77	-	303.74	-	0.581497	-	0.287769	-	613.77	303.74	0.581497	0.287769
ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_SF		353300	1,873.15	12,063.70	840.97	12,063.70	1.774656	-	0.796750	-	13,936.85	12,904.67	1.774656	0.796750
ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_SF		353310	1,873.15	-	840.97	-	1.774656	-	0.796750	-	1,873.15	840.97	1.774656	0.796750
ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF		353350	1,027.17	6,541.11	454.53	6,541.11	0.973159	-	0.430630	-	7,568.28	6,995.64	0.973159	0.430630
ASHP-SEER19-Replace_CAC_ElectricHeat_ROF_MF_CompE		353351	739.58	2,229.92	323.12	2,229.92	0.700691	-	0.306130	-	2,969.50	2,553.04	0.700691	0.306130
ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF		353360	1,027.17	-	454.53	-	0.973159	-	0.430630	-	1,027.17	454.53	0.973159	0.430630
ASHP-SEER19-Replace_CAC_NonElectricHeat_ROF_MF_CompE		353361	739.58	-	323.12	-	0.700691	-	0.306130	-	739.58	323.12	0.700691	0.306130
ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_SF		353400	1,684.09	9,561.65	784.64	9,561.65	1.595537	-	0.743382	-	11,245.74	10,346.29	1.595537	0.743382
ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_SF		353410	1,684.09	-	784.64	-	1.595537	-	0.743382	-	1,684.09	784.64	1.595537	0.743382
ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_SF		353450	1,684.09	9,561.65	784.64	9,561.65	1.595537	-	0.743382	-	11,245.74	10,346.29	1.595537	0.743382
ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_SF		353460	1,684.09	-	784.64	-	1.595537	-	0.743382	-	1,684.09	784.64	1.595537	0.743382
ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF		353500	1,096.79	6,896.14	524.15	6,896.14	1.039119	-	0.496589	-	7,992.93	7,420.29	1.039119	0.496589
ASHP-SEER20-Replace_CAC_ElectricHeat_ROF_MF_CompE		353501	797.67	2,350.96	381.20	2,350.96	0.755727	-	0.361156	-	3,148.63	2,732.16	0.755727	0.361156
ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF		353510	1,096.79	-	524.15	-	1.039119	-	0.496589	-	1,096.79	524.15	1.039119	0.496589
ASHP-SEER20-Replace_CAC_NonElectricHeat_ROF_MF_CompE		353511	797.67	-	381.20	-	0.755727	-	0.361156	-	797.67	381.20	0.755727	0.361156
ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_SF		353550	1,891.78	12,171.69	970.53	12,171.69	1.792307	-	0.919498	-	14,063.47	13,142.22	1.792307	0.919498
ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_SF		353560	1,891.78	-	970.53	-	1.792307	-	0.919498	-	1,891.78	970.53	1.792307	0.919498
ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF		353600	1,118.18	6,541.11	545.53	6,541.11	1.059384	-	0.516845	-	7,659.29	7,086.64	1.059384	0.516845
ASHP-SEER21-Replace_CAC_ElectricHeat_ER1_MF_CompE		353601	813.22	2,229.92	396.75	2,229.92	0.770459	-	0.375888	-	3,043.14	2,626.67	0.770459	0.375888
ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF		353610	1,118.18	-	545.53	-	1.059384	-	0.516845	-	1,118.18	545.53	1.059384	0.516845
ASHP-SEER21-Replace_CAC_NonElectricHeat_ER1_MF_CompE		353611	813.22	-	396.75	-	0.770459	-	0.375888	-	813.22	396.75	0.770459	0.375888
ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_SF		353650	1,891.78	12,171.69	970.53	12,171.69	1.792307	-	0.919498	-	14,063.47	13,142.22	1.792307	0.919498
ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_SF		353660	1,891.78	-	970.53	-	1.792307	-	0.919498	-	1,891.78	970.53	1.792307	0.919498
ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF		353700	585.81	7,100.69	585.81	7,100.69	0.555007	-	0.555007	-	7,686.50	7,686.50	0.555007	0.555007
ASHP-SEER21+Replace_CAC_ElectricHeat_ROF_MF_CompE		353701	426.04	2,420.69	426.04	2,420.69	0.403638	-	0.403638	-	2,846.73	2,846.73	0.403638	0.403638
ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF		353710	585.81	-	585.81	-	0.555007	-	0.555007	-	585.81	585.81	0.555007	0.555007
ASHP-SEER21+Replace_CAC_NonElectricHeat_ROF_MF_CompE		353711	426.04	-	426.04	-	0.403638	-	0.403638	-	426.04	426.04	0.403638	0.403638
ASHP-SEER17_ER1_SF		353750	1,481.17	1,957.95	365.70	1,423.75	1.403287	-	0.346471	-	3,439.12	1,789.45	1.403287	0.346471
ASHP-SEER17-ROF_SF		353800	1,481.17	1,957.95	365.70	1,423.75	1.403287	-	0.346471	-	3,439.12	1,789.45	1.403287	0.346471

Table below calculates a weighted average kWh and Kw value for HVAC Early Replacement (ER) vs Replace on Fail (ROF) measures based on the TRM values and the ER % Entered below (cell "BC3").														
		ER ROF				60% 40%								
		Weighted Average				Weighted Average				Weighted Average Total				
MEASURE NAME		ID	ER1 Cooling kWh	ER1 Heating kWh	ER2 Cooling kWh	ER2 Heating kWh	ER1 Cooling kW	ER1 Heating kW	ER2 Cooling kW	ER2 Heating kW	ER1 Total kWh	ER2 Total kWh	ER1 Total kW	ER2 Total kW
ASHP-SEER18_ER1_SF		353850	1,767.26	2,325.49	513.61	1,744.75	1.674334	-	0.486603	-	4,092.75	2,258.36	1.674334	0.486603
ASHP-SEER18_ROF_SF		353950	1,767.26	2,325.49	513.61	1,744.75	1.674334	-	0.486603	-	4,092.75	2,258.36	1.674334	0.486603
ASHP-SEER19_ER1_SF		354000	1,804.03	2,886.01	666.44	2,128.37	1.709171	-	0.631397	-	4,690.04	2,794.81	1.709171	0.631397
ASHP-SEER19_ROF_SF		354050	1,804.03	2,886.01	666.44	2,128.37	1.709171	-	0.631397	-	4,690.04	2,794.81	1.709171	0.631397
ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_SF		354100	1,539.94	9,694.92	510.85	9,694.92	1.458967	-	0.483989	-	11,234.86	10,205.77	1.458967	0.483989
ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_SF		354110	1,539.94	-	510.85	-	1.458967	-	0.483989	-	1,539.94	510.85	1.458967	0.483989
ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF		354150	891.85	6,541.11	319.21	6,541.11	0.844955	-	0.302425	-	7,432.96	6,860.32	0.844955	0.302425
ASHP-SEER17-Replace_CAC_ElectricHeat_ER1_MF_CompE		354151	648.62	2,229.92	232.15	2,229.92	0.614514	-	0.219943	-	2,878.54	2,462.07	0.614514	0.219943
ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF		354160	891.85	-	319.21	-	0.844955	-	0.302425	-	891.85	319.21	0.844955	0.302425
ASHP-SEER17-Replace_CAC_NonElectricHeat_ER1_MF_CompE		354161	648.62	-	232.15	-	0.614514	-	0.219943	-	648.62	232.15	0.614514	0.219943
ASHP-SEER17_ER1_MF		354200	921.05	1,561.25	248.43	1,130.53	0.872619	-	0.235367	-	2,482.30	1,378.96	0.872619	0.235367
ASHP-SEER17_ER1_MF_CompE		354201	669.86	532.24	180.68	385.41	0.634637	-	0.171180	-	1,202.10	566.09	0.634637	0.171180
ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_SF		354250	1,835.95	10,174.02	680.07	10,174.02	1.739412	-	0.644311	-	12,009.97	10,854.09	1.739412	0.644311
ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_SF		354260	1,835.95	-	680.07	-	1.739412	-	0.644311	-	1,835.95	680.07	1.739412	0.644311
ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF		354300	1,449.76	7,172.18	417.64	7,172.18	1.373529	-	0.395680	-	8,621.94	7,589.82	1.373529	0.395680
ASHP-SEER18-Replace_CAC_ElectricHeat_ER1_MF_CompE		354301	613.77	2,445.06	303.74	2,445.06	0.581497	-	0.287769	-	3,058.83	2,748.80	0.581497	0.287769
ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF		354310	1,449.76	-	417.64	-	1.373529	-	0.395680	-	1,449.76	417.64	1.373529	0.395680
ASHP-SEER18-Replace_CAC_NonElectricHeat_ER1_MF_CompE		354311	613.77	-	303.74	-	0.581497	-	0.287769	-	613.77	303.74	0.581497	0.287769
ASHP-SEER18_ER1_MF		354350	1,607.47	1,881.59	353.46	1,379.59	1.522946	-	0.334874	-	3,489.06	1,733.05	1.522946	0.334874
ASHP-SEER18_ER1_MF_CompE		354351	1,169.07	641.45	257.06	470.32	1.107598	-	0.243543	-	1,810.52	727.38	1.107598	0.243543
ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_SF		354400	1,873.15	12,063.70	840.97	12,063.70	1.774656	-	0.796750	-	13,936.85	12,904.67	1.774656	0.796750
ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_SF		354410	1,873.15	-	840.97	-	1.774656	-	0.796750	-	1,873.15	840.97	1.774656	0.796750
ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF		354450	1,027.17	6,541.11	454.53	6,541.11	0.973159	-	0.430630	-	7,568.28	6,995.64	0.973159	0.430630
ASHP-SEER19-Replace_CAC_ElectricHeat_ER1_MF_CompE		354451	739.58	2,229.92	323.12	2,229.92	0.700691	-	0.306130	-	2,969.50	2,553.04	0.700691	0.306130
ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF		354460	1,027.17	-	454.53	-	0.973159	-	0.430630	-	1,027.17	454.53	0.973159	0.430630
ASHP-SEER19-Replace_CAC_NonElectricHeat_ER1_MF_CompE		354461	739.58	-	323.12	-	0.700691	-	0.306130	-	739.58	323.12	0.700691	0.306130
ASHP-SEER19_ER1_MF		354500	1,059.55	1,561.25	386.93	1,130.53	1.003837	-	0.366584	-	2,620.80	1,517.46	1.003837	0.366584
ASHP-SEER19_ER1_MF_CompE		354501	770.59	532.24	281.41	385.41	0.730071	-	0.266613	-	1,302.83	666.82	0.730071	0.266613
ASHP-SEER20_ER1_SF		354550	1,621.81	2,314.98	635.98	1,796.25	1.536532	-	0.602539	-	3,936.79	2,432.23	1.536532	0.602539
ASHP-SEER20_ROF_SF		354600	1,621.81	2,314.98	635.98	1,796.25	1.536532	-	0.602539	-	3,936.79	2,432.23	1.536532	0.602539
ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF		354650	1,096.79	6,896.14	524.15	6,896.14	1.039119	-	0.496589	-	7,992.93	7,420.29	1.039119	0.496589
ASHP-SEER20-Replace_CAC_ElectricHeat_ER1_MF_CompE		354651	797.67	2,350.96	381.20	2,350.96	0.755727	-	0.361156	-	3,148.63	2,732.16	0.755727	0.361156
ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF		354660	1,096.79	-	524.15	-	1.039119	-	0.496589	-	1,096.79	524.15	1.039119	0.496589
ASHP-SEER20-Replace_CAC_NonElectricHeat_ER1_MF_CompE		354661	797.67	-	381.20	-	0.755727	-	0.361156	-	797.67	381.20	0.755727	0.361156
ASHP-SEER20_ER1_MF		354700	1,118.42	1,561.25	445.80	1,130.53	1.059611	-	0.422359	-	2,679.67	1,576.33	1.059611	0.422359
ASHP-SEER20_ER1_MF_CompE		354701	813.40	532.24	324.22	385.41	0.770630	-	0.307172	-	1,345.64	709.63	0.770630	0.307172
ASHP-SEER21_ER1_SF		354750	1,827.33	3,098.09	810.37	2,426.61	1.731246	-	0.767759	-	4,925.42	3,236.98	1.731246	0.767759
ASHP-SEER21_ROF_SF		354800	1,827.33	3,098.09	810.37	2,426.61	1.731246	-	0.767759	-	4,925.42	3,236.98	1.731246	0.767759
ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF		354850	1,118.18	6,541.11	545.53	6,541.11	1.059384	-	0.516845	-	7,659.29	7,086.64	1.059384	0.516845
ASHP-SEER21-Replace_CAC_ElectricHeat_ROF_MF_CompE		354851	813.22	2,229.92	396.75	2,229.92	0.770459	-	0.375888	-	3,043.14	2,626.67	0.770459	0.375888
ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF		354860	1,118.18	-	545.53	-	1.059384	-	0.516845	-	1,118.18	545.53	1.059384	0.516845
ASHP-SEER21-Replace_CAC_NonElectricHeat_ROF_MF_CompE		354861	813.22	-	396.75	-	0.770459	-	0.375888	-	813.22	396.75	0.770459	0.375888
ASHP-SEER21_ER1_MF		354900	1,171.68	1,561.25	499.05	1,130.53	1.110071	-	0.472809	-	2,732.93	1,629.58	1.110071	0.472809
ASHP-SEER21_ER1_MF_CompE		354901	852.13	532.24	362.95	385.41	0.807323	-	0.343865	-	1,384.37	748.36	0.807323	0.343865
ASHP-SEER17_ROF_MF		354950	921.05	1,561.25	248.43	1,130.53	0.872619	-	0.235367	-	2,482.30	1,378.96	0.872619	0.235367
ASHP-SEER17_ROF_MF_CompE		354951	669.86	532.24	180.68	385.41	0.634637	-	0.171180	-	1,202.10	566.09	0.634637	0.171180
ASHP-SEER18_ROF_MF		355000	1,607.47	1,881.59	353.46	1,379.59	1.522946	-	0.334874	-	3,489.06	1,733.05	1.522946	0.334874
ASHP-SEER18_ROF_MF_CompE		355001	1,169.07	641.45	257.06	470.32	1.107598	-	0.243543	-	1,810.52	727.38	1.107598	0.243543
ASHP-SEER19_ROF_MF		355050	1,059.55	1,561.25	386.93	1,130.53	1.003837	-	0.366584	-	2,620.80	1,517.46	1.003837	0.366584
ASHP-SEER19_ROF_MF_CompE		355051	770.59	532.24	281.41	385.41	0.730071	-	0.266613	-	1,302.83	666.82	0.730071	0.266613
ASHP-SEER20_ROF_MF		355100	1,118.42	1,561.25	445.80	1,130.53	1.059611	-	0.422359	-	2,679.67	1,576.33	1.059611	0.422359
ASHP-SEER20_ROF_MF_CompE		355101	813.40	532.24	324.22	385.41	0.770630	-	0.307172	-	1,345.64	709.63	0.770630	0.307172

Table below calculates a weighted average kWh and Kw value for HVAC Early Replacement (ER) vs Replace on Fail (ROF) measures based on the TRM values and the ER % Entered below (cell "BC3").														
		ER 60%				ROF 40%								
		Weighted Average				Weighted Average				Weighted Average Total				
MEASURE NAME		ID	ER1 Cooling kWh	ER1 Heating kWh	ER2 Cooling kWh	ER2 Heating kWh	ER1 Cooling kW	ER1 Heating kW	ER2 Cooling kW	ER2 Heating kW	ER1 Total kWh	ER2 Total kWh	ER1 Total kW	ER2 Total kW
ASHP-SEER21-ROF_MF		355150	1,171.68	1,561.25	499.05	1,130.53	1.110071	-	0.472809	-	2,732.93	1,629.58	1.110071	0.472809
ASHP-SEER21-ROF_MF_CompE		355151	852.13	532.24	362.95	385.41	0.807323	-	0.343865	-	1,384.37	748.36	0.807323	0.343865
PTHP-SEER12-ER1_MF		356200	282.12	782.78	16.00	112.08	0.267286	-	0.015159	-	1,064.90	128.08	0.267286	0.015159
PTHP-SEER12-ER1_MF_CompE		356225	205.30	267.20	11.64	38.26	0.194505	-	0.011028	-	472.50	49.90	0.194505	0.011028
PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF		356250	319.95	2,610.79	16.00	2,610.79	0.303126	-	0.015159	-	2,930.74	2,626.79	0.303126	0.015159
PTHP-SEER12-Replace_PTAC_ElectricHeat_ER1_MF_CompE		356275	232.83	891.18	11.64	891.18	0.220587	-	0.011028	-	1,124.01	902.82	0.220587	0.011028
PTHP-SEER12-ROF_MF		356300	282.12	782.78	16.00	112.08	0.267286	-	0.015159	-	1,064.90	128.08	0.267286	0.015159
PTHP-SEER12-ROF_MF_CompE		356325	205.30	267.20	11.64	38.26	0.194505	-	0.011028	-	472.50	49.90	0.194505	0.011028
PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF		356350	319.95	2,610.79	16.00	2,610.79	0.303126	-	0.015159	-	2,930.74	2,626.79	0.303126	0.015159
PTHP-SEER12-Replace_PTAC_ElectricHeat_ROF_MF_CompE		356375	232.83	891.18	11.64	891.18	0.220587	-	0.011028	-	1,124.01	902.82	0.220587	0.011028
PTHP-SEER13-ER1_MF		356400	330.11	801.28	63.99	130.58	0.312752	-	0.060625	-	1,131.39	194.57	0.312752	0.060625
PTHP-SEER13-ER1_MF_CompE		356425	240.23	273.51	46.56	44.57	0.227598	-	0.044112	-	513.74	91.13	0.227598	0.044112
PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF		356450	367.94	2,629.29	63.99	2,629.29	0.348593	-	0.060625	-	2,997.23	2,693.28	0.348593	0.060625
PTHP-SEER13-Replace_PTAC_ElectricHeat_ER1_MF_CompE		356475	267.76	897.50	46.56	897.50	0.253681	-	0.044112	-	1,165.26	944.06	0.253681	0.044112
PTHP-SEER13-ROF_MF		356500	330.11	801.28	63.99	130.58	0.312752	-	0.060625	-	1,131.39	194.57	0.312752	0.060625
PTHP-SEER13-ROF_MF_CompE		356525	240.23	273.51	46.56	44.57	0.227598	-	0.044112	-	513.74	91.13	0.227598	0.044112
PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF		356550	367.94	2,629.29	63.99	2,629.29	0.348593	-	0.060625	-	2,997.23	2,693.28	0.348593	0.060625
PTHP-SEER13-Replace_PTAC_ElectricHeat_ROF_MF_CompE		356575	267.76	897.50	46.56	897.50	0.253681	-	0.044112	-	1,165.26	944.06	0.253681	0.044112
PTHP-SEER14-ER1_MF		356600	371.24	841.54	105.12	170.84	0.351719	-	0.099593	-	1,212.78	275.96	0.351719	0.099593
PTHP-SEER14-ER1_MF_CompE		356625	270.16	287.26	76.50	58.32	0.255954	-	0.072477	-	557.42	134.82	0.255954	0.072477
PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF		356650	409.07	2,669.55	105.12	2,669.55	0.387560	-	0.099593	-	3,078.62	2,774.67	0.387560	0.099593
PTHP-SEER14-Replace_PTAC_ElectricHeat_ER1_MF_CompE		356675	297.69	911.24	76.50	911.24	0.282037	-	0.072477	-	1,208.93	987.74	0.282037	0.072477
PTHP-SEER14-ROF_MF		356700	371.24	841.54	105.12	170.84	0.351719	-	0.099593	-	1,212.78	275.96	0.351719	0.099593
PTHP-SEER14-ROF_MF_CompE		356725	270.16	287.26	76.50	58.32	0.255954	-	0.072477	-	557.42	134.82	0.255954	0.072477
PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF		356750	409.07	2,669.55	105.12	2,669.55	0.387560	-	0.099593	-	3,078.62	2,774.67	0.387560	0.099593
PTHP-SEER14-Replace_PTAC_ElectricHeat_ROF_MF_CompE		356775	297.69	911.24	76.50	911.24	0.282037	-	0.072477	-	1,208.93	987.74	0.282037	0.072477
PTHP-SEER15-ER1_MF		356800	406.89	881.22	140.77	210.52	0.385495	-	0.133368	-	1,288.11	351.29	0.385495	0.133368
PTHP-SEER15-ER1_MF_CompE		356825	296.10	300.80	102.44	71.86	0.280530	-	0.097054	-	596.90	174.30	0.280530	0.097054
PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF		356850	444.72	2,709.23	140.77	2,709.23	0.421336	-	0.133368	-	3,153.95	2,850.00	0.421336	0.133368
PTHP-SEER15-Replace_PTAC_ElectricHeat_ER1_MF_CompE		356875	323.63	924.79	102.44	924.79	0.306613	-	0.097054	-	1,248.42	1,027.23	0.306613	0.097054
PTHP-SEER15-ROF_MF		356900	406.89	881.22	140.77	210.52	0.385495	-	0.133368	-	1,288.11	351.29	0.385495	0.133368
PTHP-SEER15-ROF_MF_CompE		356925	296.10	300.80	102.44	71.86	0.280530	-	0.097054	-	596.90	174.30	0.280530	0.097054
PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF		356950	444.72	2,709.23	140.77	2,709.23	0.421336	-	0.133368	-	3,153.95	2,850.00	0.421336	0.133368
PTHP-SEER15-Replace_PTAC_ElectricHeat_ROF_MF_CompE		356975	323.63	924.79	102.44	924.79	0.306613	-	0.097054	-	1,248.42	1,027.23	0.306613	0.097054