

# Residential and Business Deemed Savings Table

## MEEIA 2019-21



## Ameren Missouri Deemed Savings Table Revision Log

Ameren Missouri Deemed Savings Table	Date	Ameren Missouri TRM			Description
		Volume 1: Overview and User Guide	Volume 2: C&I Measures	Volume 3: Residential Measures	
		Revision	Revision	Revision	
1.0	05/30/2018	1.0	1.0	1.0	Initial version filed for Commission approval.

BUSINESS PRESCRIPTIVE MEASURES

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PROGRAMS: All

Lighting

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	LED <=11 Watt Lamp Replacing Interior Halogen A 28-52 Watt Lamp	87.5	Lighting BUS	0.0001899635	0.0166	17.0	\$15.64	per measure
C&I	LED 7-20 Watt Lamp Replacing Interior Halogen 53-70 Watt Lamp	153.1	Lighting BUS	0.0001899635	0.0291	17.0	\$19.64	per measure
C&I	LED <=14 Watt Lamp Replacing Interior Halogen BR/R 45-65 Watt Lamp	201.5	Lighting BUS	0.0001899635	0.0383	11.0	\$48.27	per measure
C&I	LED <=13 Watt Lamp Replacing Interior Halogen MR-16 35-50 Watt Lamp	178.1	Lighting BUS	0.0001899635	0.0338	11.0	\$36.64	per measure
C&I	LED <=20 Watt Lamp Replacing Interior Halogen PAR 48-90 Watt Lamp	257.8	Lighting BUS	0.0001899635	0.0490	11.0	\$74.64	per measure
C&I	LED <=80 Watt Lamp or Fixture Replacing Interior HID 100-175 Watt Lamp or Fixture	576.5	Lighting BUS	0.0001899635	0.1095	11.0	\$191.39	per measure
C&I	LED 62 - 130 Watt Lamp or Fixture Replacing Interior HID 176-300 Watt Lamp or Fixture	703.0	Lighting BUS	0.0001899635	0.1335	11.0	\$233.64	per measure
C&I	LED 85 - 225 Watt Lamp or Fixture Replacing Interior HID 301-500 Watt Lamp or Fixture	1,209.1	Lighting BUS	0.0001899635	0.2297	11.0	\$361.64	per measure
C&I	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior <24/7 HID 100-175 Watt	439.5	Ext Lighting BUS	0.0000056160	0.0025	14.0	\$191.39	per measure
C&I	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior <24/7 HID 176-300 Watt	1,047.5	Ext Lighting BUS	0.0000056160	0.0059	9.0	\$233.64	per measure
C&I	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior <24/7 HID 301-500 Watt	956.2	Ext Lighting BUS	0.0000056160	0.0054	15.0	\$361.64	per measure
C&I	LED <=80 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 100-175 Watt Lamp or Fixture Misc.	1,077.5	Miscellaneous BUS	0.0001379439	0.1486	6.0	\$191.39	per measure
C&I	LED 62 - 130 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 176-300 Watt Lamp or Fixture Misc.	1,314.0	Miscellaneous BUS	0.0001379439	0.1813	6.0	\$233.64	per measure
C&I	LED 85 - 225 Watt Lamp or Fixture Replacing Garage or Exterior 24/7 HID 301-500 Watt Lamp or Fixture Misc.	2,452.8	Miscellaneous BUS	0.0001379439	0.3383	6.0	\$361.64	per measure
C&I	LED or Electroluminescent Replacing Interior Incandescent/CFL Exit Sign	253.1	Lighting BUS	0.0001899635	0.0481	16.0	\$45.25	per measure
C&I	LED Replacing Interior T5 Fluorescent	222.6	Lighting BUS	0.0001899635	0.0423	8.0	\$29.64	per measure
C&I	LED Replacing Interior T8 Fluorescent	82.4	Lighting BUS	0.0001899635	0.0157	9.0	\$29.64	per measure
C&I	LED Replacing Interior T12 Fluorescent	124.6	Lighting BUS	0.0001899635	0.0237	11.0	\$29.64	per measure
C&I	LED Specialty Lamp	102.2	Lighting BUS	0.0001899635	0.0194	11.0	\$11.94	per measure

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Fixture Mounted Occupancy Sensor Controlling >50 and <=200 Watts	107.6	Lighting BUS	0.0001899635	0.020433823	10.0	\$116.33	per measure
C&I	Fixture Mounted Occupancy Sensor Controlling >=201 and <=500 Watts	309.8	Lighting BUS	0.0001899635	0.05884941	10.0	\$116.33	per measure
C&I	Single Technology Occupancy Sensor Controlling Lighting Circuit >50 and <=120 Watts	86.1	Lighting BUS	0.0001899635	0.016347058	11.0	\$42.35	per measure
C&I	Single Technology Occupancy Sensor Controlling Lighting Circuit >120 Watts	444.9	Lighting BUS	0.0001899635	0.084514291	11.0	\$119.56	per measure
C&I	Dual Technology Occupancy Sensor Controlling Lighting Circuit >150 Watts	444.9	Lighting BUS	0.0001899635	0.084514291	8.0	\$128.00	per measure

Commercial Solid and Glass Door Refrigerators & Freezers

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	0 < V < 15 - Vertical Closed - Solid Door Refrigerator	379.9	Refrigeration BUS	0.0001357383	0.0516	12.0	\$150.00	per measure
C&I	15 ≤ V < 30 - Vertical Closed - Solid Door Refrigerator	626.4	Refrigeration BUS	0.0001357383	0.0850	12.0	\$400.00	per measure
C&I	30 ≤ V < 50 - Vertical Closed - Solid Door Refrigerator	982.5	Refrigeration BUS	0.0001357383	0.1334	12.0	\$550.00	per measure
C&I	V ≥ 50 - Vertical Closed - Solid Door Refrigerator	1,311.2	Refrigeration BUS	0.0001357383	0.1780	12.0	\$700.00	per measure
C&I	0 < V < 15 - Vertical Closed - Glass Door Refrigerator	354.3	Refrigeration BUS	0.0001357383	0.0481	12.0	\$250.00	per measure
C&I	15 ≤ V < 30 - Vertical Closed - Glass Door Refrigerator	217.3	Refrigeration BUS	0.0001357383	0.0295	12.0	\$500.00	per measure
C&I	30 ≤ V < 50 - Vertical Closed - Glass Door Refrigerator	226.5	Refrigeration BUS	0.0001357383	0.0307	12.0	\$1,307.00	per measure
C&I	V ≥ 50 - Vertical Closed - Glass Door Refrigerator	372.6	Refrigeration BUS	0.0001357383	0.0506	12.0	\$2,300.00	per measure
C&I	Horizontal Closed - Solid or Glass Door Refrigerator - All Volumes	1,219.9	Refrigeration BUS	0.0001357383	0.1656	12.0	\$525.00	per measure
C&I	0 < V < 15 - Vertical Closed - Solid Door Freezer	348.8	Refrigeration BUS	0.0001357383	0.0473	12.0	\$150.00	per measure
C&I	15 ≤ V < 30 - Vertical Closed - Solid Door Freezer	1,307.6	Refrigeration BUS	0.0001357383	0.1775	12.0	\$400.00	per measure
C&I	30 ≤ V < 50 - Vertical Closed - Solid Door Freezer	2,403.3	Refrigeration BUS	0.0001357383	0.3262	12.0	\$550.00	per measure
C&I	V ≥ 50 - Vertical Closed - Solid Door Freezer	2,951.2	Refrigeration BUS	0.0001357383	0.4006	12.0	\$700.00	per measure
C&I	0 < V < 15 - Vertical Closed - Glass Door Freezer	1,430.0	Refrigeration BUS	0.0001357383	0.1941	12.0	\$220.00	per measure
C&I	15 ≤ V < 30 - Vertical Closed - Glass Door Freezer	3,186.8	Refrigeration BUS	0.0001357383	0.4326	12.0	\$950.00	per measure
C&I	30 ≤ V < 50 - Vertical Closed - Glass Door Freezer	5,150.0	Refrigeration BUS	0.0001357383	0.6991	12.0	\$1,307.00	per measure
C&I	V ≥ 50 - Vertical Closed - Glass Door Freezer	5,884.2	Refrigeration BUS	0.0001357383	0.7987	12.0	\$2,300.00	per measure
C&I	Horizontal Closed - Solid or Glass Door Freezer - All Volumes	5,265.1	Refrigeration BUS	0.0001357383	0.7147	12.0	\$595.00	per measure

Refrigerators & Freezers Controls

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost (per door)	Units
C&I	Anti-Sweat Heater Controls Refrigerator	668.1	Refrigeration BUS	0.0001357383	0.0907	12.0	\$151.00	per door
C&I	Anti-Sweat Heater Controls Freezer	770.9	Refrigeration BUS	0.0001357383	0.1046	12.0	\$151.00	per door

BUSINESS PRESCRIPTIVE MEASURES

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PROGRAMS: All

Heat Pump Water Heaters

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Heat Pump Water Heater w/ 98% Efficiency 2.9-14.6 kW (10 to 50 MBH)	21,156.0	Water Heating BUS	0.0001811545	3.8325	15.0	\$4,000.00	per measure
C&I	Heat Pump Water Heater w/ 98% Efficiency 14.7-29.3 kW (50 to 100 MBH)	52,890.0	Water Heating BUS	0.0001811545	9.5813	15.0	\$7,000.00	per measure
C&I	Heat Pump Water Heater w/ 98% Efficiency 29.4-87.9 kW (100 to 300 MBH)	141,041.0	Water Heating BUS	0.0001811545	25.5502	15.0	\$10,000.00	per measure
C&I	Heat Pump Water Heater w/ 98% Efficiency 88-146.5 kW (300 to 500 MBH)	282,081.0	Water Heating BUS	0.0001811545	51.1002	15.0	\$14,000.00	per measure
C&I	Heat Pump Water Heater w/ 98% Efficiency >146.6 kW (above 500 MBH)	423,122.0	Water Heating BUS	0.0001811545	76.6505	15.0	\$18,000.00	per measure

Heat Pump Pool Heater

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
C&I	Pool Heater Heat Pump (Uncovered)	35,272.9	Water Heating BUS	0.0001811545	6.3898	15.00	\$1,000.00	per measure
C&I	Pool Heater Heat Pump (Covered)	6,206.9	Water Heating BUS	0.0001811545	1.1244	15.00	\$1,000.00	per measure

Pool Pump

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Pool Pump w/ Variable Frequency Drive	1,747.0	Motors BUS	0.0001379439	0.2410	15.00	\$246.00	per measure
C&I	Pool Pump Timer	601.3	Motors BUS	0.0001379439	0.0829	10.00	\$100.00	per measure

Steam Cookers

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	3 Pan ENERGY STAR® Steam Cooker	7,856.3	Cooking BUS	0.0001998949	1.5704	12.0	\$4,150.00	per measure
C&I	4 Pan ENERGY STAR® Steam Cooker	9,213.5	Cooking BUS	0.0001998949	1.8417	12.0	\$4,150.00	per measure
C&I	5 Pan ENERGY STAR® Steam Cooker	10,513.0	Cooking BUS	0.0001998949	2.1015	12.0	\$4,150.00	per measure
C&I	6 Pan ENERGY STAR® Steam Cooker	11,818.6	Cooking BUS	0.0001998949	2.3625	12.0	\$4,150.00	per measure

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PROGRAMS: All

Holding Cabinet

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	ENERGY STAR® Hot Holding Cabinet (0 < V <13)	709.5	Cooking BUS	0.0001998949	0.1418	12.00	\$1,783.00	per measure
C&I	ENERGY STAR® Hot Holding Cabinet (13 ≤ V <28)	2,772.2	Cooking BUS	0.0001998949	0.5542	12.00	\$1,783.00	per measure
C&I	ENERGY STAR® Hot Holding Cabinet (28 ≤ V)	4,438.3	Cooking BUS	0.0001998949	0.8872	12.00	\$1,783.00	per measure

HVAC

Program/Channel	Measure	Cooling Gross kWh Annual Savings (per Ton)	Heating Gross kWh Annual Savings (per ton)	Total Gross kWh Annual Savings	End Use	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Learning Thermostat	205.3	233.0	438.3	Cooling BUS	Heating BUS	0.0009106840	0.1870	10.00	\$224.00	per measure

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
C&I	VFD on Chilled Water Pump 1-75HP	1,289.6	Cooling BUS	0.0009106840	1.1745	15.00	\$179.00	per Hp
C&I	VFD on Hot Water Pump 1-75HP	1,696.6	HVAC BUS	0.0004439830	0.7533	15.00	\$179.00	per Hp

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
C&I	VFD on HVAC Fans 1-100HP	939.7	HVAC BUS	0.0004439830	0.4172	15.00	\$168.00	per Hp

Program/Channel	Measure	Gross kWh Annual Savings (per ton)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Packaged DX 135 - 240kbtu	154.0	Cooling BUS	0.0009106840	0.1402	15.0	\$100.00	per ton
C&I	Packaged DX 240 - 760kbtu	66.5	Cooling BUS	0.0009106840	0.0606	15.0	\$100.00	per ton
C&I	Packaged DX 65 - 135kbtu	98.6	Cooling BUS	0.0009106840	0.0898	15.0	\$100.00	per ton
C&I	Packaged DX >760kbtu	70.8	Cooling BUS	0.0009106840	0.0645	15.0	\$100.00	per ton
C&I	Packaged DX <65kbtu	69.4	Cooling BUS	0.0009106840	0.0632	15.0	\$100.00	per ton

Program/Channel	Measure	Cooling Gross kWh Annual Savings (per ton)	Heating Gross kWh Annual Savings (per ton)	Total Gross kWh Annual Savings	End Use	End Use	kW Factor	kW	EUL	Inc. Cost (per ton)	Units
C&I	GSHP <135kbtu; ≥17EER	36.7	28.0	64.7	Cooling BUS	Heating BUS	0.0009106840	0.0334	15.0	\$180.00	per ton
C&I	GSHP <135kbtu; ≥19EER	114.9	28.0	142.9	Cooling BUS	Heating BUS	0.0009106840	0.1047	15.0	\$180.00	per ton
C&I	ASHP 65 - 135kbtu	95.7	64.6	160.3	Cooling BUS	Heating BUS	0.0009106840	0.0872	15.0	\$100.00	per ton
C&I	ASHP 135 - 240kbtu	43.3	183.9	227.3	Cooling BUS	Heating BUS	0.0009106840	0.0395	15.0	\$100.00	per ton
C&I	ASHP >240kbtu	138.0	129.4	267.5	Cooling BUS	Heating BUS	0.0009106840	0.1257	15.0	\$100.00	per ton
C&I	ASHP <65kbtu	69.4	61.9	131.4	Cooling BUS	Heating BUS	0.0009106840	0.0632	15.0	\$100.00	per ton

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PROGRAMS: All

Program/Channel	Measure	Gross kWh Annual Savings (per ton)	End Use	kW Factor	kW	EUL	Inc. Cost (per ton)	Units
C&I	Air Cooled Chiller	411.0	Cooling BUS	0.0009106840	0.3743	20.0	\$106.23	per ton

Appliances

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Clothes Washer (Electric DHW; Electric Dryer)	907.6	Miscellaneous BUS	0.0001379439	0.1252	11.00	\$200.00	per measure
C&I	Clothes Washer (Gas DHW; Electric Dryer)	308.4	Miscellaneous BUS	0.0001379439	0.0425	11.00	\$200.00	per measure
C&I	Clothes Washer (Electric DHW; Gas Dryer)	750.8	Miscellaneous BUS	0.0001379439	0.1036	11.00	\$200.00	per measure
C&I	Clothes Washer (Gas DHW; Gas Dryer)	151.6	Miscellaneous BUS	0.0001379439	0.0209	11.00	\$200.00	per measure

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Clothes Dryer Vented Electric, Standard (≥ 4.4 ft3)	840.7	Miscellaneous BUS	0.0001379439	0.1160	14.00	\$75.00	per measure
C&I	Clothes Dryer Vented Electric, Compact (120V) (< 4.4 ft3)	307.3	Miscellaneous BUS	0.0001379439	0.0424	14.00	\$105.00	per measure
C&I	Clothes Dryer Vented Electric, Compact (240V) (<4.4 ft3)	340.1	Miscellaneous BUS	0.0001379439	0.0469	14.00	\$105.00	per measure
C&I	Clothes Dryer Ventless Electric, Compact (240V) (<4.4 ft3)	428.7	Miscellaneous BUS	0.0001379439	0.0591	14.00	\$105.00	per measure
C&I	Clothes Dryer Vented Gas	40.6	Miscellaneous BUS	0.0001379439	0.0056	14.00	\$75.00	per measure

Compressed Air

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	No Loss Condensate Drain (Reciprocating - On/off Control)	3,272.3	Air Comp BUS	0.0001379439	0.4514	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Reciprocating - Load/Unload)	2,418.6	Air Comp BUS	0.0001379439	0.3336	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Screw - Load/Unload)	2,703.2	Air Comp BUS	0.0001379439	0.3729	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Screw - Inlet Modulation)	978.1	Air Comp BUS	0.0001379439	0.1349	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Screw - Inlet Modulation w/ Unloading)	978.1	Air Comp BUS	0.0001379439	0.1349	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Screw - Variable Displacement)	2,721.0	Air Comp BUS	0.0001379439	0.3753	13.00	\$700.00	per measure
C&I	No Loss Condensate Drain (Screw - VFD)	3,165.6	Air Comp BUS	0.0001379439	0.4367	13.00	\$700.00	per measure

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Compressed Air Nozzle (Reciprocating - On/off Control)	1,547.2	Air Comp BUS	0.0001379439	0.2134	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Reciprocating - Load/Unload)	1,203.4	Air Comp BUS	0.0001379439	0.1660	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Screw - Load/Unload)	1,289.3	Air Comp BUS	0.0001379439	0.1779	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Screw - Inlet Modulation)	515.7	Air Comp BUS	0.0001379439	0.0711	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Screw - Inlet Modulation w/ Unloading)	515.7	Air Comp BUS	0.0001379439	0.0711	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Screw - Variable Displacement)	1,289.3	Air Comp BUS	0.0001379439	0.1779	15.00	\$77.00	per measure
C&I	Compressed Air Nozzle (Screw - VFD)	1,547.2	Air Comp BUS	0.0001379439	0.2134	15.00	\$77.00	per measure

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
C&I	VSD Air Compressor ≤ 40 HP	987.0	Air Comp BUS	0.0001379439	0.1362	10.00	\$1,573.00	per HP

Combination Oven

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Combination Oven (Pan Capacity < 15)	6,372.3	Cooking BUS	0.0001998949	1.2738	12.0	\$4,300.00	per measure
C&I	Combination Oven (Pan Capacity ≥ 15)	11,743.6	Cooking BUS	0.0001998949	2.3475	12.0	\$4,300.00	per measure

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**PROGRAMS: All**

**Fryer**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Standard Open Deep-Fat Fryer	952.3	Cooking BUS	0.0001998949	0.1904	12.0	\$210.00	per measure
C&I	Large Vat Open Deep-Fat Fryer	2,537.8	Cooking BUS	0.0001998949	0.5073	12.0	\$0.00	per measure

**Convection Oven**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Convection Oven (Full Size)	1,938.5	Cooking BUS	0.0001998949	0.3875	12.0	\$0.00	per measure
C&I	Convection Oven (Half Size)	192.1	Cooking BUS	0.0001998949	0.0384	12.0	\$0.00	per measure

**Griddle**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Griddle	1,910.4	Cooking BUS	0.0001998949	0.3819	12.0	\$0.00	per measure

**Kitchen Demand Ventilation Controls**

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per HP)	Units
C&I	Kitchen Demand Ventilation Controls	3,331.1	Cooking BUS	0.0001998949	0.6659	15.0	\$1,988.00	per HP

**Pre-Rinse Spray Valve**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Pre-Rinse Spray Valve	5,786.5	Cooking BUS	0.0001998949	1.1567	5.0	\$92.90	per measure

**Low Flow Faucet Aerator**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Low Flow Faucet Aerator	86.6	Water Heating BUS	0.0001811545	0.0157	9.0	\$8.00	per measure

**Circulator Pump**

Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Circulator Pump	651.0	Miscellaneous BUS	0.0001379439	0.0898	15.0	\$1,200.00	per measure

**Small Commercial Programmable Thermostats**

Program/Channel	Measure	Gross kWh Annual Savings (per sqft)	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
C&I	Small Commercial Programmable Thermostats	0.0289	Cooling BUS	0.0009106840	0.0000	8.0	\$181.00	per measure

**Demand Controlled Ventilation**

Program/Channel	Measure	Gross kWh Annual Savings (per sqft)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Demand Controlled Ventillation (Gas Heat)	0.7	Cooling BUS	0.0009106840	0.0006	10.00	Actual	per sq. ft.
C&I	Demand Controlled Ventillation (Electric Heat)	1.9	Cooling BUS	0.0009106840	0.0017	10.00	Actual	per sq. ft.
C&I	Demand Controlled Ventillation (Heat Pump)	1.1	Cooling BUS	0.0009106840	0.0010	10.00	Actual	per sq. ft.

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**PROGRAMS: All**

**Advanced RTU Controls**

Program/Channel	Measure	Gross kWh Annual Savings (per HP)	End Use	kW Factor	kW	EUL	Inc. Cost (per unit)	Units
C&I	Advanced RTU Controls	3,779.3	HVAC BUS	0.0004439830	1.6780	15.0	\$4,038.00	per measure

**PTAC & PTHP**

Program/Channel	Measure	Gross kWh Annual Savings (per ton) first 5 years	Gross kWh Annual Savings (per ton) next ten years	End Use	kW Factor	kW first 5 years	kW first 5 years	EUL	Inc. Cost (per ton)	Units
C&I	PTAC	411.3	10.5	Cooling BUS	0.0009106840	0.3745	0.010	15.0	\$1,047.00	per ton
C&I	PTHP	715.4	177.1	Cooling BUS	0.0009106840	0.3745	0.019	15.0	\$1,047.00	per ton

**Refrigerated Beverage Vending Machine**

Program/Channel	Measure	Gross kWh Annual Savings (per cubicft)	End Use	kW Factor	kW	EUL	Inc. Cost	Units
C&I	Refrigerated Beverage Vending Machine (Class A)	0.1307	Refrigeration BUS	0.0001357383	0.00002	12.0	\$140.00	per measure
C&I	Refrigerated Beverage Vending Machine (Class B)	0.3233	Refrigeration BUS	0.0001357383	0.00004	12.0	\$140.00	per measure

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

Program/Channel	Measure	Gross kWh Annual Savings (per motor)	End Use	kW Factor	kW	EUL	Inc. Cost (per motor)	Units
C&I	ECM for Walk-in & Reach-in Coolers/Freezers	1,409.0	Miscellaneous BUS	0.0001379439	0.1944	15.0	\$177.00	per motor



RESIDENTIAL LIGHTING

Lighting Program

\*\* CFL baseline is Post 2020, EISA baseline is pre-2020 \*\*

Measure Reference No.	Program/Channel	Measure	Gross 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
	Lighting	LED - 10.5W Downlight E26 (CFL baseline)	12.9	0.0019	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	12.9	0.0000000	0.0019	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 10.5W Downlight E26 (Halogen baseline)	33.2	0.0050	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	33.2	0.0000000	0.0050	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 10W (CFL baseline)	4.0	0.0006	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.0	0.0000000	0.0006	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 10W (Halogen baseline)	29.7	0.0044	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	29.7	0.0000000	0.0044	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 12W Dimmable Light Bulb (Replacing CFL)	7.8	0.0012	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	7.8	0.0000000	0.0012	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 12W Dimmable Light Bulb (Replacing Specialty Incandescent) LI DI	61.6	0.0092	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	61.6	0.0000000	0.0092	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W (Halogen baseline)	39.1	0.0058	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	39.1	0.0000000	0.0058	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W (CFL baseline)	7.7	0.0011	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	7.7	0.0000000	0.0011	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W Flood Light PAR30 Bulb (CFL baseline)	4.4	0.0007	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.4	0.0000000	0.0007	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W Flood Light PAR30 Bulb (Halogen baseline)	47.0	0.0070	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	47.0	0.0000000	0.0070	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 18W Flood Light PAR30 Bulb (CFL baseline)	4.6	0.0007	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.6	0.0000000	0.0007	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 18W Flood Light PAR38 Bulb (Halogen baseline)	75.7	0.0113	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	75.7	0.0000000	0.0113	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 20W (CFL baseline)	9.0	0.0013	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	9.0	0.0000000	0.0013	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 20W (Halogen baseline)	52.6	0.0079	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	52.6	0.0000000	0.0079	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 4W Candelabra (CFL baseline)	4.2	0.0006	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.2	0.0000000	0.0006	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 4W Candelabra (Replacing Specialty Incandescent)	33.1	0.0049	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	33.1	0.0000000	0.0049	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 8W Globe Light G25 Bulb (Replacing CFL)	4.7	0.0007	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.7	0.0000000	0.0007	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 8W Globe Light G25 Bulb (Replacing Specialty Incandescent)	33.4	0.0050	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	33.4	0.0000000	0.0050	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 10W (Halogen baseline) - Specialty Connected Light	29.7	0.0044	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	29.7	0.0000000	0.0044	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W (Halogen baseline) - Specialty Connected Light	39.1	0.0058	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	39.1	0.0000000	0.0058	0.0000	19.0	6.0	\$ 0.0000010	per bulb
	Lighting	LED - 15W Flood Light PAR30 Bulb (Halogen baseline) - Specialty Connected Light	47.0	0.0070	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	47.0	0.0000000	0.0070	0.0000	19.0	6.0	\$ 0.0000010	per bulb

\*The present value cost of multiple Halogen or CFL bulbs over the life of the measure is typically at or below \$0. For modeling purposes, use \$ 0.000001 to model these measures within DSMore.

\*\*EUL-BUS based on MO TRM - 20,000 hours total life; 3,351 annual hours of use for average building type.

RESIDENTIAL EFFICIENT PRODUCTS

Heat Pump Hot Water Heater

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kWh <sub>cool</sub>	kWh <sub>heat</sub> - Electric Resistance	kWh <sub>heat</sub> - Heat Pumps	kW	EUL	Inc. Cost	Units
	Efficient Products	Heat Pump Hot Water Heater	3719.9	Water Heating RES	0.0000887318	1117.18	581.51	342.06	0.3301	13.0	\$588.00	per measure

Learning Thermostat / Advanced Thermostat

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	Learning Thermostat - ASHP heating/cooling SF	192.5	Cooling RES	0.0009474181	0.1824	10.0	\$175.00	per measure
	Efficient Products	Learning Thermostat - ASHP heating/cooling SF	662.0	Heating RES	0.0000000000	0.0000	10.0		per measure
	Efficient Products	Learning Thermostat - electric furnace heating / central AC MF	192.5	Cooling RES	0.0009474181	0.1824	10.0	\$175.00	per measure
	Efficient Products	Learning Thermostat - electric furnace heating / central AC MF	710.4	Heating RES	0.0000000000	0.0000	10.0		per measure
	Efficient Products	Learning Thermostat - electric furnace heating / central AC SF	192.5	Cooling RES	0.0009474181	0.1824	10.0	\$175.00	per measure
	Efficient Products	Learning Thermostat - electric furnace heating / central AC SF	1093.0	Heating RES	0.0000000000	0.0000	10.0		per measure
	Efficient Products	Learning Thermostat - Gas Heated / central AC **	192.5	Cooling RES	0.0009474181	0.1824	10.0	\$175.00	per measure
	Efficient Products	Learning Thermostat - Gas Heated / central AC **	46.3	Heating RES	0.0000000000	0.0000	10.0		per measure
	Efficient Products	Learning Thermostat - Unknown **	192.5	Cooling RES	0.0009474181	0.1824	10.0	\$175.00	per measure
	Efficient Products	Learning Thermostat - Unknown **	377.6	Heating RES	0.0000000000	0.0000	10.0	\$175.00	per measure

ENERGY STAR Pool Pump and motor w auto controls - multi speed

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	ENERGY STAR Pool Pump and motor w auto controls - multi speed	1799.7	Pool Spa RES	0.0002354459	0.4237	10.0	\$235.00	per measure
	Efficient Products	ENERGY STAR VFDs on Residential Swimming Pool Pumps	2052.8	Pool Spa RES	0.0002354459	0.4833	10.0	\$549.00	per measure

Advanced Power Strips Tier 2 / Advanced Control Strategies

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	Advanced Tier 2 Power Strips - A	237.6	Miscellaneous RES	0.0001148238	0.0273	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - B	216.0	Miscellaneous RES	0.0001148238	0.0248	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - C	194.4	Miscellaneous RES	0.0001148238	0.0223	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - D	172.8	Miscellaneous RES	0.0001148238	0.0198	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - E	151.2	Miscellaneous RES	0.0001148238	0.0174	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - F	129.6	Miscellaneous RES	0.0001148238	0.0149	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - G	108.0	Miscellaneous RES	0.0001148238	0.0124	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - H	86.4	Miscellaneous RES	0.0001148238	0.0099	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - Average	162.0	Miscellaneous RES	0.0001148238	0.0186	10.0	\$30.00	per measure

ENERGY STAR Air Purifier

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	ENERGY STAR Air Purifier/Cleaner	555.6	Miscellaneous RES	0.0001148238	0.0638	9.0	\$70.00	per measure

ENERGY STAR Dehumidifier

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	ENERGY STAR Dehumidifier	204.0	Cooling RES	0.0009474181	0.1933	12.0	\$5.00	per measure

RESIDENTIAL EFFICIENT PRODUCTS

Energy Star Room AC

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	ENERGY STAR® Room AC (kWh w inst rate)	40.0	Cooling RES	0.0009474181	0.03787	9.0	\$20.00	per measure
	Efficient Products	ENERGY STAR® Room AC (kWh w/o inst rate)	41.0	Cooling RES	0.0009474181	0.03882	9.0	\$20.00	per measure
	Low-Income	AC - Energy Star® Room - Thru-Wall_MF: Low Income	41.0	Cooling RES	0.0009474181	0.03882	9.0	\$20.00	per measure
	Low-Income	AC - Energy Star® Room - Thru-Wall_SF: Low Income	41.0	Cooling RES	0.0009474181	0.03882	9.0	\$20.00	per measure
	Low Income	AC - Energy Star® Room_MF: Low Income	41.0	Cooling RES	0.0009474181	0.03882	9.0	\$20.00	per measure
	Low-Income	AC - Energy Star® Room_SF: Low Income	41.0	Cooling RES	0.0009474181	0.03882	9.0	\$20.00	per measure

**RESIDENTIAL ENERGY EFFICIENCY KITS**

**Dirty Filter Alarm**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units
	School	Dirty Filter Alarm_SF:Kits	68.1	HVAC RES	0.0004660805	43.08	25.03	0.0117	14.0	\$5.00	per measure
	School	Dirty Filter Alarm_MF:Kits	79.2	HVAC RES	0.0004660805	50.10	29.10	0.0136	14.0	\$5.00	per measure

**LEDs (per bulb)**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	School	LED - 10W (CFL baseline)	3.3	Lighting RES	0.0001492529	0.000	19.0	\$1.95	per measure
	Multifamily	LED - 10W (CFL baseline)	3.3	Lighting RES	0.0001492529	0.000	19.0	\$1.95	per measure
	School	LED - 10W (Halogen baseline)	24.5	Lighting RES	0.0001492529	0.004	19.0	\$1.95	per measure
	Multifamily	LED - 10W (Halogen baseline)	24.5	Lighting RES	0.0001492529	0.004	19.0	\$1.95	per measure
	School	LED - 10.5W Downlight E26 (CFL baseline)	25.9	Lighting RES	0.0001492529	0.004	19.0	\$1.95	per measure
	Multifamily	LED - 10.5W Downlight E26 (CFL baseline)	37.2	Lighting RES	0.0001492529	0.006	19.0	\$1.95	per measure

**Kit Faucet Aerators (Kitchen)**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
	School	Kit Faucet Aerator (Kitchen)	45.9	Water Heating RES	0.0000887318	0.079	0.0041	10.0	\$3.00	per measure
	Multifamily	Kit Faucet Aerator (Kitchen)	115.9	Water Heating RES	0.0000887318	0.079	0.0103	10.0	\$3.00	per measure

**Kit Faucet Aerators (Bathroom)**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
	School	Kit Faucet Aerator (Bathroom)	8.0	Water Heating RES	0.0000887318	0.062	0.0007	10.0	\$3.00	per measure
	Multifamily	Kit Faucet Aerator (Bathroom)	33.5	Water Heating RES	0.0000887318	0.062	0.0030	10.0	\$3.00	per measure

**Low Flow Showerheads**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
	School	Low Flow Showerheads	73.6	Water Heating RES	0.0000887318	0.109	0.0065	10.0	\$7.00	per measure

**Pipe Insulation**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
1272	School	Pipe Insulation	10.4	Water Heating RES	0.0000887318	0.0009	12.0	\$2.87	per foot
868	Multifamily	Pipe Insulation	16.5	Water Heating RES	0.0000887318	0.0015	12.0	\$2.87	per foot

RESIDENTIAL ENERGY EFFICIENCY KITS

Advanced Power Strips Tier 1 / Load Sensing

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	TOS/NC/DI - Home Office	Advanced Tier 1 Power Strips -TOS/NC/DI - Home Office	31.0	Miscellaneous RES	0.0001148238	0.0036	10.0	\$20.00	per measure
	Kits - Home Office	Advanced Tier 1 Power Strips -Kits - Home Office	24.2	Miscellaneous RES	0.0001148238	0.0028	10.0	\$20.00	per measure
	TOS/NC/DI - Home Entertainment	Advanced Tier 1 Power Strips -TOS/NC/DI - Home Entertainment	75.1	Miscellaneous RES	0.0001148238	0.0086	10.0	\$20.00	per measure
	Kits - Home Entertainment	Advanced Tier 1 Power Strips -Kits - Home Entertainment	58.6	Miscellaneous RES	0.0001148238	0.0067	10.0	\$20.00	per measure
	TOS/NC/DI - Unknown Location	Advanced Tier 1 Power Strips -TOS/NC/DI - Unknown Location	59.2	Miscellaneous RES	0.0001148238	0.0068	10.0	\$20.00	per measure
	Kits - Unknown Location	Advanced Tier 1 Power Strips -Kits - Unknown Location	42.1	Miscellaneous RES	0.0001148238	0.0048	10.0	\$20.00	per measure

RESIDENTIAL HVAC

ECM/ Blower Motor

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	Auto kWh	Continuous kWh	kW	EUL	Inc. Cost	Units
	HVAC: SF - ROF	ECM Auto Fan EUL Replacement -SF	591.9	HVAC RES	0.0004660805	265.2	4.70	321.99	-	0.0022	20.0	\$97.00	per measure
	HVAC: MF - ROF	ECM Auto Fan EUL Replacement -MF	591.9	HVAC RES	0.0004660805	265.2	4.70	321.99	-	0.0022	20.0	\$97.00	per measure
	HVAC: SF - ER1	ECM Auto Fan Early Replacement ER 1 (Full Cost) - SF	591.9	HVAC RES	0.0004660805	265.2	4.70	321.99	-	0.0022	6.0	\$475.00	per measure
	HVAC: SF - ER2	ECM Auto Fan Early Replacement ER2 (Remaining Life) - SF	591.9	HVAC RES ER2	0.0004660805	265.2	4.70	321.99	-	0.0022	12.0		per measure
	HVAC: MF - ER1	ECM Auto Fan Early Replacement ER 1 (Full Cost) - MF	591.9	HVAC RES	0.0004660805	265.2	4.70	321.99	-	0.0022	6.0	\$475.00	per measure
	HVAC: MF - ER2	ECM Auto Fan Early Replacement ER2 (Remaining Life) - MF	591.9	HVAC RES ER2	0.0004660805	265.2	4.70	321.99	-	0.0022	12.0		per measure
	HVAC: SF - ROF	ECM Continuous Fan EUL Replacement - SF	3,255.9	HVAC RES	0.0004660805	265.2	4.70	-	2,985.99	0.3409	20.0	\$97.00	per measure
	HVAC: MF - ROF	ECM Continuous Fan EUL Replacement - MF	3,255.9	HVAC RES	0.0004660805	265.2	4.70	-	2,985.99	0.3409	20.0	\$97.00	per measure
	HVAC: SF - ER1	ECM Continuous Fan Early Replacement ER 1 (Full Cost) - SF	3,255.9	HVAC RES	0.0004660805	265.2	4.70	-	2,985.99	0.3409	6.0	\$475.00	per measure
	HVAC: SF - ER2	ECM Continuous Fan Early Replacement ER2 (Remaining Life) - SF	3,255.9	HVAC RES ER2	0.0004660805	265.2	4.70	-	2,985.99	0.3409	12.0		per measure
	HVAC: MF - ER1	ECM Continuous Fan Early Replacement ER 1 (Full Cost) - MF	3,255.9	HVAC RES	0.0004660805	265.2	4.70	-	2,985.99	0.3409	6.0	\$475.00	per measure
	HVAC: MF - ER2	ECM Continuous Fan Early Replacement ER2 (Remaining Life) - MF	3,255.9	HVAC RES ER2	0.0004660805	265.2	4.70	-	2,985.99	0.3409	12.0		per measure

Central Air Conditioners

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
	HVAC: SF - ER1	CAC - SEER 14 ER1: HVAC SF	1,612.0	Cooling RES	0.0009474181	1.5273	6	\$637	3.00
	HVAC: SF - ER2	CAC - SEER 14 ER2: HVAC SF	925.3	Cooling RES ER2	0.0009474181	0.8766	12		3.00
	HVAC: SF -ROF	CAC - SEER 14 Replace at Fail: HVAC SF	203.4	Cooling RES	0.0009474181	0.1927	18		3.00
	HVAC: MF - ER1	CAC - SEER 14 ER1: HVAC MF	1,047.8	Cooling RES	0.0009474181	0.9927	6	\$637	3.00
	HVAC: MF - ER2	CAC - SEER 14 ER2: HVAC MF	601.4	Cooling RES ER2	0.0009474181	0.5698	12		3.00
	HVAC: MF -ROF	CAC - SEER 14 Replace at Fail: HVAC MF	132.2	Cooling RES	0.0009474181	0.1252	16		3.00
	HVAC: SF - ER1	CAC - SEER 15 ER1: HVAC SF	1,932.7	Cooling RES	0.0009474181	1.8310	6	\$1,057	3.30
	HVAC: SF - ER2	CAC - SEER 15 ER2: HVAC SF	1,177.3	Cooling RES ER2	0.0009474181	1.1154	12		3.30
	HVAC: SF -ROF	CAC - SEER 15 Replace at Fail: HVAC SF	334.7	Cooling RES	0.0009474181	0.3171	18	\$324	3.00
	HVAC: MF - ER1	CAC - SEER 15 ER1: HVAC MF	1,256.2	Cooling RES	0.0009474181	1.1902	6	\$1,057	3.30
	HVAC: MF - ER2	CAC - SEER 15 ER2: HVAC MF	765.2	Cooling RES ER2	0.0009474181	0.7250	12		3.30
	HVAC: MF -ROF	CAC - SEER 15 Replace at Fail: HVAC MF	217.5	Cooling RES	0.0009474181	0.2061	18	\$324	3.00
	HVAC: SF - ER1	CAC - SEER 16 ER1: HVAC SF	1,921.9	Cooling RES	0.0009474181	1.8208	6	\$1,343	3.10
	HVAC: SF - ER2	CAC - SEER 16 ER2: HVAC SF	1,212.3	Cooling RES ER2	0.0009474181	1.1485	12		3.10
	HVAC: SF -ROF	CAC - SEER 16 Replace at Fail: HVAC SF	436.2	Cooling RES	0.0009474181	0.4132	18	\$640.90	2.90
	HVAC: MF - ER1	CAC - SEER 16 ER1: HVAC MF	1,249.2	Cooling RES	0.0009474181	1.1835	6	\$1,343	3.10
	HVAC: MF - ER2	CAC - SEER 16 ER2: HVAC MF	788.0	Cooling RES ER2	0.0009474181	0.7465	12		3.10
	HVAC: MF -ROF	CAC - SEER 16 Replace at Fail: HVAC MF	283.5	Cooling RES	0.0009474181	0.2686	18	\$640.90	2.90
	HVAC: SF - ER1	CAC - SEER 17+ ER1: HVAC SF	2,040.7	Cooling RES	0.0009474181	1.9334	6	\$1,911	3.10
	HVAC: SF - ER2	CAC - SEER 17+ ER2: HVAC SF	1,331.1	Cooling RES ER2	0.0009474181	1.2611	12		3.10
	HVAC: SF -ROF	CAC - SEER 17+ Replace at Fail: HVAC SF	547.4	Cooling RES	0.0009474181	0.5186	18	\$1,172	2.90
	HVAC: MF - ER1	CAC - SEER 17+ ER1: HVAC MF	1,326.5	Cooling RES	0.0009474181	1.2567	6	\$1,911	3.10
	HVAC: MF - ER2	CAC - SEER 17+ ER2: HVAC MF	865.2	Cooling RES ER2	0.0009474181	0.8197	12		3.10
	HVAC: MF -ROF	CAC - SEER 17+ Replace at Fail: HVAC MF	355.8	Cooling RES	0.0009474181	0.3371	18	\$1,172	2.90

\*Incremental cost to be adjusted based on cost testing used

RESIDENTIAL HVAC

Ductless Heat Pumps

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
	HVAC: SF - ER1	Ductless AC - ER1 SF	2,022.5	Cooling RES	0.0009474181	1.9161	6.0	\$2,389.07	1.6
	HVAC: SF - ER2	Ductless AC - ER2 SF	572.3	Cooling RES ER2	0.0009474181	0.5422	12.0		
	HVAC: SF -ROF	Ductless AC - replace on fail SF	1,875.9	Cooling RES	0.0009474181	1.7773	18.0	\$1,648.00	1.6
	HVAC: SF -ROF	Ductless ASHP - replace on fail SF NC	548.4	Cooling RES	0.0009474181	0.5196	18.0	\$828.80	1.4
	HVAC: SF -ROF	Ductless ASHP - replace on fail SF NC	1,059.4	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: SF -ROF	Ductless ASHP - replace on fail SF ROF	548.4	Cooling RES	0.0009474181	0.5196	18.0	\$1,006.40	1.7
	HVAC: SF -ROF	Ductless ASHP - replace on fail SF ROF	1,059.4	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: SF-ER1	Ductless ASHP Replace Electric Resistance ER1 SF	1,495.2	Cooling RES	0.0009474181	1.4166	6.0	\$1,967.47	1.4
	HVAC: SF-ER1	Ductless ASHP Replace Electric Resistance ER1 SF	5,217.9	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: SF-ER2	Ductless ASHP Replace Electric Resistance ER2 SF	471.3	Cooling RES ER2	0.0009474181	0.4465	12.0		
	HVAC: SF-ER2	Ductless ASHP Replace Electric Resistance ER2 SF	1,115.9	Heating RES ER2	0.0000000000	0.0000	12.0		
	HVAC: SF -ROF	Ductless ASHP Replace Electric Resistance ROF	447.1	Cooling RES	0.0009474181	0.4236	18.0	\$1,121.07	1.6
	HVAC: SF -ROF	Ductless ASHP Replace Electric Resistance ROF	1,070.7	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: SF -ER1	Ductless ASHP ER1 SF	1,626.0	Cooling RES	0.0009474181	1.5405	6.0	\$2,246.27	1.7
	HVAC: SF -ER1	Ductless ASHP ER1 SF	2,932.9	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: SF -ER2	Ductless ASHP ER2 SF	527.5	Cooling RES ER2	0.0009474181	0.4997	12.0		
	HVAC: SF -ER2	Ductless ASHP ER2 SF	1,286.4	Heating RES ER2	0.0000000000	0.0000	12.0		
	HVAC: MF - ER1	Ductless AC - ER1 MF	1,314.6	Cooling RES	0.0009474181	1.2455	6.0	\$1,601.40	1.7
	HVAC: MF - ER2	Ductless AC - ER2 MF	372.0	Cooling RES ER2	0.0009474181	0.3524	12.0		
	HVAC: MF -ROF	Ductless AC - replace on fail MF	1,219.4	Cooling RES	0.0009474181	1.1552	18.0	\$1,043.73	1.6
	HVAC: MF -ROF	Ductless ASHP - replace on fail MF NC	356.5	Cooling RES	0.0009474181	0.3377	18.0	\$658.00	1.4
	HVAC: MF -ROF	Ductless ASHP - replace on fail MF NC	688.6	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: MF -ROF	Ductless ASHP - replace on fail MF ROF	356.5	Cooling RES	0.0009474181	0.3377	18.0	\$658.00	1.4
	HVAC: MF -ROF	Ductless ASHP - replace on fail MF ROF	688.6	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: MF-ER1	Ductless ASHP Replace Electric Resistance ER1 MF	971.9	Cooling RES	0.0009474181	0.9208	6.0	\$1,484.00	1.4
	HVAC: MF-ER1	Ductless ASHP Replace Electric Resistance ER1 MF	3,391.6	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: MF-ER2	Ductless ASHP Replace Electric Resistance ER2 MF	306.3	Cooling RES ER2	0.0009474181	0.2902	12.0		
	HVAC: MF-ER2	Ductless ASHP Replace Electric Resistance ER2 MF	725.3	Heating RES ER2	0.0000000000	0.0000	12.0		
	HVAC: MF -ROF	Ductless ASHP Replace Electric Resistance ROF MF	290.6	Cooling RES	0.0009474181	0.2754	18.0	\$752.00	1.6
	HVAC: MF -ROF	Ductless ASHP Replace Electric Resistance ROF MF	696.0	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: MF -ER1	Ductless ASHP ER1 MF	1,056.9	Cooling RES	0.0009474181	1.0013	6.0	\$1,632.00	1.7
	HVAC: MF -ER1	Ductless ASHP ER1 MF	1,906.4	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: MF -ER2	Ductless ASHP ER2 MF	342.8	Cooling RES ER2	0.0009474181	0.3248	12.0		
	HVAC: MF -ER2	Ductless ASHP ER2 MF	836.1	Heating RES ER2	0.0000000000	0.0000	12.0		

Dual Fuel Heat Pumps

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
	Income Eligible	DFHP - SEER 19 MF heat pump base	433.2	Cooling Res	0.0009474181	0.4104	18.0	\$2,936.60	3.4
	Income Eligible	DFHP - SEER 19 MF heat pump base	651.4	Heating Res	0.0000000000	0.0000	18.0		
	Income Eligible	DFHP - SEER 20 MF heat pump base	639.1	Cooling Res	0.0009474181	0.6055	18.0	\$3,176.60	4.4
	Income Eligible	DFHP - SEER 20 MF heat pump base	990.7	Heating Res	0.0000000000	0.0000	18.0		
	Income Eligible	DFHP - SEER 21 MF heat pump base	871.5	Cooling Res	0.0009474181	0.8257	18.0	\$3,626.60	5.4
	Income Eligible	DFHP - SEER 21 MF heat pump base	1,383.7	Heating Res	0.0000000000	0.0000	18.0		

Ground Source Heat Pumps

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
	HVAC: ROF	GSHP - EER 23 - replace electric furnace / CAC - Cooling	1,811.0	Cooling Res	0.0009474181	1.7158	18.0	\$4,717.00	4.4
	HVAC: ROF	GSHP - EER 23 - replace electric furnace / CAC - Heating	6,530.9	Heating RES	0.0000000000	0.0000	18.0		
	HVAC: ER1	GSHP - EER 23 - replace electric furnace / CAC ER1 - Cooling	4,715.6	Cooling Res	0.0009474181	4.4676	6.0	\$5,250.00	4.1
	HVAC: ER1	GSHP - EER 23 - replace electric furnace / CAC ER1 - Heating	6,530.9	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: ER2	GSHP - EER 23 - replace electric furnace / CAC ER2 - Cooling	1,717.0	Cooling Res ER2	0.0009474181	1.6267	12.0		
	HVAC: ER2	GSHP - EER 23 - replace electric furnace / CAC ER2 - Heating	6,530.9	Heating RES ER2	0.0000000000	0.0000	12.0		
	HVAC: ER1	GSHP EER 23 ER1 - Cooling	4,715.6	Cooling Res	0.0009474181	4.4676	6.0	\$4,859.00	4.1
	HVAC: ER1	GSHP EER 23 ER1 - Heating	6,530.9	Heating RES	0.0000000000	0.0000	6.0		
	HVAC: ER2	GSHP EER 23 ER2 - Cooling	1,460.4	Cooling Res ER2	0.0009474181	1.3836	12.0		
	HVAC: ER2	GSHP EER 23 ER2 - Heating	6,530.9	Heating RES ER2	0.0000000000	0.0000	12.0		
	HVAC: ROF	GSHP EER 23 Replace at Fail GSHP	1,535.7	Cooling Res	0.0009474181	1.4549	18.0	\$3,200.00	4.40
	HVAC: ROF	GSHP EER 23 Replace at Fail GSHP	7,008.7	Heating RES	0.0000000000	0.0000	18.0		

RESIDENTIAL HVAC

Air Source Heat Pumps

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
HVAC: SF - ER1	ASHP - SEER 15 ER Elec Resist Furnace: HVAC ER1		2,360.2	Cooling Res	0.0009474181	2.2361	6.0	\$2,365.13	2.8
HVAC: SF - ER1	ASHP - SEER 15 ER Elec Resist Furnace: HVAC ER1		12,036.5	Heating Res	0.0000000000	0.0000	6.0		
HVAC: SF - ER2	ASHP - SEER 15 ER Elec Resist Furnace: HVAC ER2		312.4	Cooling Res ER2	0.0009474181	0.2959	12.0		
HVAC: SF - ER2	ASHP - SEER 15 ER Elec Resist Furnace: HVAC ER2		12,036.5	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: SF - ER1	ASHP - SEER 15 ER with ASHP: HVAC ER1		2,349.0	Cooling Res	0.0009474181	2.2255	6.0	\$2,618.54	3.1
HVAC: SF - ER1	ASHP - SEER 15 ER with ASHP: HVAC ER1		5,147.8	Heating Res	0.0000000000	0.0000	6.0		
HVAC: SF - ER2	ASHP - SEER 15 ER with ASHP: HVAC ER2		168.2	Cooling Res ER2	0.0009474181	0.1594	12.0		
HVAC: SF - ER2	ASHP - SEER 15 ER with ASHP: HVAC ER2		523.8	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: SF - ROF	ASHP - SEER 15 Replace at Fail Elec Resist Furnace: HVAC		301.9	Cooling Res	0.0009474181	0.2860	18.0	\$787.80	3.3
HVAC: SF - ROF	ASHP - SEER 15 Replace at Fail Elec Resist Furnace: HVAC		11,093.0	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ROF	ASHP - SEER 15 Replace at Fail with ASHP: HVAC		168.2	Cooling Res	0.0009474181	0.1594	18.0	\$939.30	3.1
HVAC: SF - ROF	ASHP - SEER 15 Replace at Fail with ASHP: HVAC		523.8	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ER1	ASHP - SEER 16 - replace electric furnace / CAC - early replacement SF ER1		2,733.5	Cooling Res	0.0009474181	2.5898	6.0	\$2,896.61	3.1
HVAC: SF - ER1	ASHP - SEER 16 - replace electric furnace / CAC - early replacement SF ER1		13,965.9	Heating Res	0.0000000000	0.0000	6.0		
HVAC: SF - ER2	ASHP - SEER 16 - replace electric furnace / CAC - early replacement SF ER2		466.3	Cooling Res ER2	0.0009474181	0.4417	12.0		
HVAC: SF - ER2	ASHP - SEER 16 - replace electric furnace / CAC - early replacement SF ER2		13,965.9	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: SF - ER1	ASHP SEER 16 replace ASHP - early replacement SF ER1		2,628.7	Cooling Res	0.0009474181	2.4905	6.0	\$3,083.49	3.3
HVAC: SF - ER1	ASHP SEER 16 replace ASHP - early replacement SF ER1		6,250.0	Heating Res	0.0000000000	0.0000	6.0		
HVAC: SF - ER2	ASHP SEER 16 replace ASHP - early replacement SF ER2		307.3	Cooling Res ER2	0.0009474181	0.2911	12.0		
HVAC: SF - ER2	ASHP SEER 16 replace ASHP - early replacement SF ER2		1,327.6	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: SF - ROF	ASHP - SEER 16 - replace electric furnace / CAC SF		481.3	Cooling Res	0.0009474181	0.4560	18.0	\$1,256.64	3.2
HVAC: SF - ROF	ASHP - SEER 16 - replace electric furnace / CAC SF		14,670.2	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ROF	ASHP SEER 16 replace ASHP - replace on fail SF		307.3	Cooling Res	0.0009474181	0.2911	18.0	\$999.90	3.3
HVAC: SF - ROF	ASHP SEER 16 replace ASHP - replace on fail SF		1,584.0	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ER1	ASHP SEER 15 MF ER Replace ASHP: HVAC ER1		1,526.8	Cooling Res	0.0009474181	1.4466	6.0	\$2,618.54	3.1
HVAC: MF - ER1	ASHP SEER 15 MF ER Replace ASHP: HVAC ER1		3,346.1	Heating Res	0.0000000000	0.0000	6.0		
HVAC: MF - ER2	ASHP SEER 15 MF ER Replace ASHP: HVAC ER2		109.3	Cooling Res ER2	0.0009474181	0.1036	12.0		
HVAC: MF - ER2	ASHP SEER 15 MF ER Replace ASHP: HVAC ER2		340.5	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: MF - ER1	ASHP SEER 15 MF ER Replace Elec Resist Furnace: HVAC ER1		1,534.1	Cooling Res	0.0009474181	1.4535	6.0	\$2,365.13	2.8
HVAC: MF - ER1	ASHP SEER 15 MF ER Replace Elec Resist Furnace: HVAC ER1		7,823.7	Heating Res	0.0000000000	0.0000	6.0		
HVAC: MF - ER2	ASHP SEER 15 MF ER Replace Elec Resist Furnace: HVAC ER2		203.0	Cooling Res ER2	0.0009474181	0.1924	12.0		
HVAC: MF - ER2	ASHP SEER 15 MF ER Replace Elec Resist Furnace: HVAC ER2		7,823.7	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: MF - ROF	ASHP SEER 15 MF Replace at Fail Elec Resist Furnace: HVAC		196.2	Cooling Res	0.0009474181	0.1859	18.0	\$787.80	2.6
HVAC: MF - ROF	ASHP SEER 15 MF Replace at Fail Elec Resist Furnace: HVAC		7,210.5	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ER1	ASHP SEER 16 MF ER Replace ASHP: HVAC ER1		1,708.7	Cooling Res	0.0009474181	1.6188	6.0	\$3,083.49	3.3
HVAC: MF - ER1	ASHP SEER 16 MF ER Replace ASHP: HVAC ER1		4,062.5	Heating Res	0.0000000000	0.0000	6.0		
HVAC: MF - ER2	ASHP SEER 16 MF ER Replace ASHP: HVAC ER2		199.7	Cooling Res ER2	0.0009474181	0.1892	12.0		
HVAC: MF - ER2	ASHP SEER 16 MF ER Replace ASHP: HVAC ER2		863.0	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: MF - ROF	ASHP - SEER 16 -		199.7	Cooling Res	0.0009474181	0.1892	18.0	\$1,295.91	3.3
HVAC: MF - ROF	Replace on Fail MF ASHP - SEER 16 -		1,029.6	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ROF	ASHP - SEER 16 - replace electric furnace / CAC MF		312.8	Cooling Res	0.0009474181	0.2964	18.0	\$1,256.64	3.2
HVAC: MF - ROF	ASHP - SEER 16 - replace electric furnace / CAC MF		9,535.6	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ER1	ASHP - SEER 16 - replace electric furnace / CAC - early replacement MF ER1		1,776.8	Cooling Res	0.0009474181	1.6834	6.0	\$2,896.61	3.1
HVAC: MF - ER1	ASHP - SEER 16 - replace electric furnace / CAC - early replacement MF ER1		9,077.8	Heating Res	0.0000000000	0.0000	6.0		
HVAC: MF - ER2	ASHP - SEER 16 - replace electric furnace / CAC - early replacement MF ER2		303.1	Cooling Res ER2	0.0009474181	0.2871	12.0		
HVAC: MF - ER2	ASHP - SEER 16 - replace electric furnace / CAC - early replacement MF ER2		9,077.8	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: MF - ROF	ASHP SEER15 MF Replace at Fail ASHP: HVAC		109.3	Cooling Res	0.0009474181	0.1036	18.0	\$939.30	3.1
HVAC: MF - ROF	ASHP SEER15 MF Replace at Fail ASHP: HVAC		340.5	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ROF	ASHP - SEER 17 - replace electric furnace / CAC SF		2,576.3	Cooling Res	0.0009474181	2.4409	18.0	\$1,624.00	2.8
HVAC: SF - ROF	ASHP - SEER 17 - replace electric furnace / CAC SF		12,836.4	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ROF	ASHP - SEER 17 - replace electric furnace / CAC MF		1,674.6	Cooling Res	0.0009474181	1.5866	18.0	\$1,624.00	2.8
HVAC: MF - ROF	ASHP - SEER 17 - replace electric furnace / CAC MF		8,343.7	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ROF	ASHP - SEER 18 - replace electric furnace / CAC SF		2,671.7	Cooling Res	0.0009474181	2.5313	18.0	\$1,997.33	2.8
HVAC: SF - ROF	ASHP - SEER 18 - replace electric furnace / CAC SF		12,836.4	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ROF	ASHP - SEER 18 - replace electric furnace / CAC MF		1,736.6	Cooling Res	0.0009474181	1.6453	18.0	\$1,997.33	2.8
HVAC: MF - ROF	ASHP - SEER 18 - replace electric furnace / CAC MF		8,343.7	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ROF	ASHP - SEER 19 - replace electric furnace / CAC SF		2,757.1	Cooling Res	0.0009474181	2.6121	18.0	\$2,277.33	2.8
HVAC: SF - ROF	ASHP - SEER 19 - replace electric furnace / CAC SF		12,836.4	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ROF	ASHP - SEER 19 - replace electric furnace / CAC MF		1,792.1	Cooling Res	0.0009474181	1.6979	18.0	\$2,277.33	2.8
HVAC: MF - ROF	ASHP - SEER 19 - replace electric furnace / CAC MF		8,343.7	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ER1	ASHP - SEER 20 - replace electric furnace / CAC - early replacement SF ER1		3,137.6	Cooling Res	0.0009474181	2.9726	6.0	\$5,275.24	3.1
HVAC: SF - ER1	ASHP - SEER 20 - replace electric furnace / CAC - early replacement SF ER1		13,965.9	Heating Res	0.0000000000	0.0000	6.0		
HVAC: SF - ER2	ASHP - SEER 20 - replace electric furnace / CAC - early replacement SF ER2		870.3	Cooling Res ER2	0.0009474181	0.8246	12.0		
HVAC: SF - ER2	ASHP - SEER 20 - replace electric furnace / CAC - early replacement SF ER2		13,965.9	Heating Res ER2	0.0000000000	0.0000	12.0		
HVAC: SF - ROF	ASHP - SEER 20 - replace electric furnace / CAC SF		898.4	Cooling Res	0.0009474181	0.8512	18.0	\$3,712.00	3.2
HVAC: SF - ROF	ASHP - SEER 20 - replace electric furnace / CAC SF		14,670.2	Heating Res	0.0000000000	0.0000	18.0		
HVAC: MF - ROF	ASHP - SEER 20 - replace electric furnace / CAC MF		584.0	Cooling Res	0.0009474181	0.5533	18.0	\$3,596.00	3.1
HVAC: MF - ROF	ASHP - SEER 20 - replace electric furnace / CAC MF		9,535.6	Heating Res	0.0000000000	0.0000	18.0		
HVAC: SF - ER1	ASHP - SEER 21 - replace electric furnace / CAC - early replacement SF ER1		3,214.6	Cooling Res	0.0009474181	3.0455	6.0	\$5,275.24	0.0



RESIDENTIAL HVAC

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
HVAC: SF - ER1		ASHP - SEER 21 - Replace electric furnace / CAC - early replacement SF	13,965.9	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ER1 ASHP - SEER 21 - Replace electric furnace / CAC - early replacement SF	947.3	Cooling Res ER2	0.0009474181	0.8975	12.0		
HVAC: SF - ER2		ER2 ASHP - SEER 21 - Replace electric furnace / CAC - early replacement SF	13,965.9	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP - SEER 21 - Replace electric furnace / CAC - early replacement MF ER1	2,089.5	Cooling Res	0.0009474181	1.9796	6.0	\$5,275.24	3.1
HVAC: MF - ER1		ASHP - SEER 21 - Replace electric furnace / CAC - early replacement MF ER1	9,077.8	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP - SEER 21 - Replace electric furnace / CAC - early replacement MF ER2	615.7	Cooling Res ER2	0.0009474181	0.5834	12.0		
HVAC: MF - ER2		ASHP - SEER 21 - Replace electric furnace / CAC - early replacement MF ER2	9,077.8	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP - SEER 21 - replace electric furnace / CAC SF	977.9	Cooling Res	0.0009474181	0.9264	18.0	\$3,712.00	3.2
HVAC: SF - ROF		ASHP - SEER 21 - replace electric furnace / CAC SF	14,670.2	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ROF		ASHP - SEER 21+ Replace at Fail Elec Resist Furnace: HVAC	635.6	Cooling Res	0.0009474181	0.6022	18.0	\$3,712.00	3.2
HVAC: SF - ROF		ASHP - SEER 21+ Replace at Fail Elec Resist Furnace: HVAC	9,535.6	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ER1		ASHP SEER 17 replace ASHP - early replacement SF ER1	2,755.2	Cooling Res	0.0009474181	2.6104	6.0	\$3,701.58	3.3
HVAC: SF - ER1		ASHP SEER 17 replace ASHP - early replacement SF ER1	6,250.0	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP SEER 17 replace ASHP - early replacement SF ER2	433.8	Cooling Res ER2	0.0009474181	0.4110	12.0		
HVAC: SF - ER2		ASHP SEER 17 replace ASHP - early replacement SF ER2	1,327.6	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP SEER 17 replace ASHP - replace on fail SF	433.8	Cooling Res	0.0009474181	0.4110	18.0	\$1,914.00	3.3
HVAC: SF - ROF		ASHP SEER 17 replace ASHP - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ER1		ASHP SEER 18 replace ASHP - early replacement SF ER1	2,867.7	Cooling Res	0.0009474181	2.7169	6.0	\$4,141.58	3.3
HVAC: SF - ER1		ASHP SEER 18 replace ASHP - early replacement SF ER1	6,250.0	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP SEER 18 replace ASHP - early replacement SF ER2	546.2	Cooling Res ER2	0.0009474181	0.5175	12.0		
HVAC: SF - ER2		ASHP SEER 18 replace ASHP - early replacement SF ER2	1,327.6	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP SEER 18 replace ASHP - replace on fail SF	546.2	Cooling Res	0.0009474181	0.5175	18.0	\$2,354.00	3.3
HVAC: SF - ROF		ASHP SEER 18 replace ASHP - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ROF		ASHP - SEER 18 - replace on fail SF	546.2	Cooling Res	0.0009474181	0.5175	18.0	\$2,354.00	3.3
HVAC: SF - ROF		ASHP - SEER 18 - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ER1		ASHP SEER 19 replace ASHP - early replacement SF ER1	2,968.3	Cooling Res	0.0009474181	2.8122	6.0	\$4,471.58	3.3
HVAC: SF - ER1		ASHP SEER 19 replace ASHP - early replacement SF ER1	6,250.0	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP SEER 19 replace ASHP - early replacement SF ER2	646.8	Cooling Res ER2	0.0009474181	0.6128	12.0		
HVAC: SF - ER2		ASHP SEER 19 replace ASHP - early replacement SF ER2	1,327.6	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP SEER 19 replace ASHP - replace on fail SF	646.8	Cooling Res	0.0009474181	0.6128	18.0	\$2,684.00	3.3
HVAC: SF - ROF		ASHP SEER 19 replace ASHP - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: SF - ER1		ASHP - SEER 17 - replace electric furnace / CAC - early replacement SF ER1	2,852.4	Cooling Res	0.0009474181	2.7024	6.0	\$3,824.96	3.1
HVAC: SF - ER1		ASHP - SEER 17 - replace electric furnace / CAC - early replacement SF ER1	13,965.9	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP - SEER 17 - replace electric furnace / CAC - early replacement SF ER2	585.1	Cooling Res ER2	0.0009474181	0.5543	12.0		
HVAC: SF - ER2		ASHP - SEER 17 - replace electric furnace / CAC - early replacement SF ER2	13,965.9	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP - SEER 17 - replace electric furnace / CAC - early replacement MF ER1	1,854.0	Cooling Res	0.0009474181	1.7565	6.0	\$3,824.96	3.1
HVAC: MF - ER1		ASHP - SEER 17 - replace electric furnace / CAC - early replacement MF ER1	9,077.8	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP - SEER 17 - replace electric furnace / CAC - early replacement MF ER2	380.3	Cooling Res ER2	0.0009474181	0.3603	12.0		
HVAC: MF - ER2		ASHP - SEER 17 - replace electric furnace / CAC - early replacement MF ER2	9,077.8	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP SEER 17 replace ASHP - early replacement MF ER1	1,790.9	Cooling Res	0.0009474181	1.6967	6.0	\$6,101.99	3.1
HVAC: MF - ER1		ASHP SEER 17 replace ASHP - early replacement MF ER1	4,062.5	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP SEER 17 replace ASHP - early replacement MF ER2	282.0	Cooling Res ER2	0.0009474181	0.2671	12.0		
HVAC: MF - ER2		ASHP SEER 17 replace ASHP - early replacement MF ER2	863.0	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ER1		ASHP - SEER 18 - replace electric furnace / CAC - early replacement SF ER1	2,958.0	Cooling Res	0.0009474181	2.8025	6.0	\$4,279.63	2.6

RESIDENTIAL HVAC

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units (tons/measure)
HVAC: SF - ER1		ASHP - SEER 18 - replace electric furnace / CAC - early replacement SF ER1	13,965.9	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP - SEER 18 - replace electric furnace / CAC - early replacement SF ER2	690.7	Cooling Res ER2	0.0009474181	0.6544	12.0		
HVAC: SF - ER2		ASHP - SEER 18 - replace electric furnace / CAC - early replacement SF ER2	13,965.9	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP - SEER 18 - replace electric furnace / CAC - early replacement MF ER1	1,922.7	Cooling Res	0.0009474181	1.8216	6.0	\$4,279.63	2.6
HVAC: MF - ER1		ASHP - SEER 18 - replace electric furnace / CAC - early replacement MF ER1	9,077.8	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP - SEER 18 - replace electric furnace / CAC - early replacement MF ER2	449.0	Cooling Res ER2	0.0009474181	0.4254	12.0		
HVAC: MF - ER2		ASHP - SEER 18 - replace electric furnace / CAC - early replacement MF ER2	9,077.8	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP SEER 18 replace ASHP - early replacement MF ER1	1,864.0	Cooling Res	0.0009474181	1.7660	6.0	\$6,827.32	2.6
HVAC: MF - ER1		ASHP SEER 18 replace ASHP - early replacement MF ER1	4,062.5	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP SEER 18 replace ASHP - early replacement MF ER2	355.0	Cooling Res ER2	0.0009474181	0.3364	12.0		
HVAC: MF - ER2		ASHP SEER 18 replace ASHP - early replacement MF ER2	863.0	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ER1		ASHP - SEER 19 - replace electric furnace / CAC - early replacement SF ER1	3,052.5	Cooling Res	0.0009474181	2.8920	6.0	\$4,620.63	3.1
HVAC: SF - ER1		ASHP - SEER 19 - replace electric furnace / CAC - early replacement SF ER1	13,965.9	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP - SEER 19 - replace electric furnace / CAC - early replacement SF ER2	785.3	Cooling Res ER2	0.0009474181	0.7440	12.0		
HVAC: SF - ER2		ASHP - SEER 19 - replace electric furnace / CAC - early replacement SF ER2	13,965.9	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP - SEER 19 - replace electric furnace / CAC - early replacement MF ER1	1,984.1	Cooling Res	0.0009474181	1.8798	6.0	\$4,620.63	3.1
HVAC: MF - ER1		ASHP - SEER 19 - replace electric furnace / CAC - early replacement MF ER1	9,077.8	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP - SEER 19 - replace electric furnace / CAC - early replacement MF ER2	510.4	Cooling Res ER2	0.0009474181	0.4836	12.0		
HVAC: MF - ER2		ASHP - SEER 19 - replace electric furnace / CAC - early replacement MF ER2	9,077.8	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP SEER 19 replace ASHP - early replacement MF ER1	1,929.4	Cooling Res	0.0009474181	1.8280	6.0	\$7,371.32	3.1
HVAC: MF - ER1		ASHP SEER 19 replace ASHP - early replacement MF ER1	4,062.5	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP SEER 19 replace ASHP - early replacement MF ER2	420.5	Cooling Res ER2	0.0009474181	0.3983	12.0		
HVAC: MF - ER2		ASHP SEER 19 replace ASHP - early replacement MF ER2	863.0	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ER1		ASHP SEER 20 replace ASHP - early replacement SF ER1	3,058.9	Cooling Res	0.0009474181	2.8980	6.0	\$13,953.85	3.1
HVAC: SF - ER1		ASHP SEER 20 replace ASHP - early replacement SF ER1	6,250.0	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP SEER 20 replace ASHP - early replacement SF ER2	737.4	Cooling Res ER2	0.0009474181	0.6986	12.0		
HVAC: SF - ER2		ASHP SEER 20 replace ASHP - early replacement SF ER2	1,327.6	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP SEER 20 replace ASHP - replace on fail SF	737.4	Cooling Res	0.0009474181	0.6986	18.0	\$9,512.00	3.1
HVAC: SF - ROF		ASHP SEER 20 replace ASHP - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ER1		ASHP - SEER 20 - replace electric furnace / CAC - early replacement MF ER1	2,039.4	Cooling Res	0.0009474181	1.9322	6.0	\$13,953.85	3.1
HVAC: MF - ER1		ASHP - SEER 20 - replace electric furnace / CAC - early replacement MF ER1	9,077.8	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP - SEER 20 - replace electric furnace / CAC - early replacement MF ER2	565.7	Cooling Res ER2	0.0009474181	0.5360	12.0		
HVAC: MF - ER2		ASHP - SEER 20 - replace electric furnace / CAC - early replacement MF ER2	9,077.8	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ER1		ASHP SEER 20 replace ASHP - early replacement MF ER1	1,988.3	Cooling Res	0.0009474181	1.8837	6.0	\$14,804.70	3.1
HVAC: MF - ER1		ASHP SEER 20 replace ASHP - early replacement MF ER1	4,062.5	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP SEER 20 replace ASHP - early replacement MF ER2	479.3	Cooling Res ER2	0.0009474181	0.4541	12.0		
HVAC: MF - ER2		ASHP SEER 20 replace ASHP - early replacement MF ER2	863.0	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ER1		ASHP SEER 21 replace ASHP - early replacement SF ER1	3,140.8	Cooling Res	0.0009474181	2.9757	6.0	\$14,804.70	3.1
HVAC: SF - ER1		ASHP SEER 21 replace ASHP - early replacement SF ER1	6,250.0	Heating Res	0.000000000	0.0000	6.0		
HVAC: SF - ER2		ASHP SEER 21 replace ASHP - early replacement SF ER2	819.3	Cooling Res ER2	0.0009474181	0.7763	12.0		
HVAC: SF - ER2		ASHP SEER 21 replace ASHP - early replacement SF ER2	1,327.6	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: SF - ROF		ASHP SEER 21 replace ASHP - replace on fail SF	819.3	Cooling Res	0.0009474181	0.7763	18.0	\$9,976.00	3.1
HVAC: SF - ROF		ASHP SEER 21 replace ASHP - replace on fail SF	1,584.0	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ROF		ASHP - SEER 21 - replace electric furnace / CAC MF	556.2	Cooling Res	0.0009474181	0.5269	18.0	\$10,092.00	3.1
HVAC: MF - ROF		ASHP - SEER 21 - replace electric furnace / CAC MF	8,343.7	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ER1		ASHP SEER 21 replace ASHP - early replacement MF ER1	2,041.5	Cooling Res	0.0009474181	1.9342	6.0	\$15,995.88	3.1
HVAC: MF - ER1		ASHP SEER 21 replace ASHP - early replacement MF ER1	4,062.5	Heating Res	0.000000000	0.0000	6.0		
HVAC: MF - ER2		ASHP SEER 21 replace ASHP - early replacement MF ER2	532.6	Cooling Res ER2	0.0009474181	0.5046	12.0		
HVAC: MF - ER2		ASHP SEER 21 replace ASHP - early replacement MF ER2	863.0	Heating Res ER2	0.000000000	0.0000	12.0		
HVAC: MF - ROF		ASHP - SEER 17 - replace on fail MF	282.0	Cooling Res	0.0009474181	0.2671	18.0	\$1,914.00	3.3
HVAC: MF - ROF		ASHP - SEER 17 - replace on fail MF	1,029.6	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ROF		ASHP - SEER 18 - replace on fail MF	355.0	Cooling Res	0.0009474181	0.3364	18.0	\$2,354.00	3.3
HVAC: MF - ROF		ASHP - SEER 18 - replace on fail MF	1,029.6	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ROF		ASHP - SEER 19 - replace on fail MF	420.5	Cooling Res	0.0009474181	0.3983	18.0	\$2,684.00	3.3
HVAC: MF - ROF		ASHP - SEER 19 - replace on fail MF	1,029.6	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ROF		ASHP - SEER 20 - replace on fail MF	479.3	Cooling Res	0.0009474181	0.4541	18.0	\$3,828.00	3.3
HVAC: MF - ROF		ASHP - SEER 20 - replace on fail MF	1,029.6	Heating Res	0.000000000	0.0000	18.0		
HVAC: MF - ROF		ASHP - SEER 21 - replace on fail MF	532.6	Cooling Res	0.0009474181	0.5046	18.0	\$3,828.00	3.3
HVAC: MF - ROF		ASHP - SEER 21 - replace on fail MF	1,029.6	Heating Res	0.000000000	0.0000	18.0		

RESIDENTIAL HVAC

AC Tune-up

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	HVAC: SF	AC General Tune-Up (no charge or coil clean)	142.5	Cooling RES	0.0009474181	0.1350	2.0	\$70.00	per measure
	HVAC: SF	AC Tune-up / refrigerant charge SF	594.4	Cooling RES	0.0009474181	0.5631	2.0	\$81.00	per measure
	HVAC: SF	AC Tune-up / Indoor Coil (Evaporator) Cleaning SF	98.4	Cooling RES	0.0009474181	0.0932	2.0	\$63.00	per measure
	HVAC: SF	AC Tune-up / Outdoor Coil (Condenser) Cleaning SF	196.8	Cooling RES	0.0009474181	0.1864	2.0	\$31.00	per measure

HP Tune-up / refrigerant charge SF

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	HVAC: SF	General HP Tune-up (no charge or coil clean)	146.1	Cooling RES	0.0009474181	0.1384	2.0	\$70.00	per measure
	HVAC: SF	General HP Tune-up (no charge or coil clean)	157.9	Heating RES	0.0000000000	0.0000	2.0		per measure
	HVAC: SF	HP Tune-up / refrigerant charge SF	609.2	Cooling RES	0.0009474181	0.5772	2.0	\$81.00	per measure
	HVAC: SF	HP Tune-up / refrigerant charge SF	760.0	Heating RES	0.0000000000	0.0000	2.0		per measure
	HVAC: SF	HP Tune-up / Indoor Coil (Evaporator) Cleaning SF	100.8	Cooling RES	0.0009474181	0.0955	2.0	\$63.00	per measure
	HVAC: SF	HP Tune-up / Indoor Coil (Evaporator) Cleaning SF	107.6	Heating RES	0.0000000000	0.0000	2.0		per measure
	HVAC: SF	HP Tune-up / Outdoor Coil (Condenser) Cleaning SF	201.7	Cooling RES	0.0009474181	0.1911	2.0	\$31.00	per measure
	HVAC: SF	HP Tune-up / Outdoor Coil (Condenser) Cleaning SF	221.5	Heating RES	0.0000000000	0.0000	2.0		per measure

RESIDENTIAL INCOME ELIGIBLE

AC Tune-up

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
SF		AC General Tune-Up (no charge or coil clean) SF	142.5	Cooling RES	0.0009474181	0.1350	2.0	\$70.00	per measure
MF		AC General Tune-Up (no charge or coil clean) MF	92.6	Cooling RES	0.0009474181	0.0878	2.0	\$70.00	per measure
SF		AC Tune-up / Refrigerant charge SF	594.4	Cooling RES	0.0009474181	0.5631	2.0	\$81.00	per measure
MF		AC Tune-up / Refrigerant charge MF	386.4	Cooling RES	0.0009474181	0.3660	2.0	\$81.00	per measure
SF		AC Tune-up / Indoor Coil (Evaporator) Cleaning SF	98.4	Cooling RES	0.0009474181	0.0932	2.0	\$63.00	per measure
MF		AC Tune-up /Indoor Coil (Evaporator) Cleaning MF	63.9	Cooling RES	0.0009474181	0.0606	2.0	\$63.00	per measure
SF		AC Tune-up /Outdoor Coil (Condenser) Cleaning SF	196.8	Cooling RES	0.0009474181	0.1864	2.0	\$31.00	per measure
MF		AC Tune-up /Outdoor Coil (Condenser) Cleaning MF	127.9	Cooling RES	0.0009474181	0.1212	2.0	\$31.00	per measure

Air Sealing

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units (sq. ft)
MFLU		Air Sealing (Infiltration reduction) - 30% MF LI DI electric furnace base	295.7	Building Shell RES	0.0004660805	256.9	38.8	0.0181	15.0	\$108.19	902
MFLU		Air Sealing (Infiltration reduction) - 30% SF LI DI heat pump base	226.3	Building Shell RES	0.0004660805	187.5	38.8	0.0181	15.0	\$108.19	902
SFLU		Air Sealing (Infiltration reduction) - 30% SF LI DI electric furnace base	496.5	Building Shell RES	0.0004660805	427.2	69.4	0.0323	15.0	\$166.44	1387
SFLU		Air Sealing (Infiltration reduction) - 30% SF LI DI heat pump base	425.8	Building Shell RES	0.0004660805	356.5	69.4	0.0323	15.0	\$166.44	1387
SFLU		MH Adjusted Air Sealing (Infiltration reduction) - 30% SF LI DI electric furnace base	513.0	Building Shell RES	0.0004660805	446.0	67.0	0.0312	15.0	\$129.60	1080

Ceiling Insulation

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units - area of ceiling/attic (ft2)
MFLU		Ceiling Insulation R11-R49 MF LI DI electric furnace base	924.0	Building Shell RES	0.0004660805	836.2	87.78	0.040912	25.0	\$1,860.46	876
MFLU		Ceiling Insulation R11-R49 MF LI DI heat pump base	576.0	Building Shell RES	0.0004660805	479.5	96.46	0.044958	25.0	\$1,860.46	876
MFLU		Ceiling Insulation R11-R49 MF LI DI gas heat electric cool base	124.7	Building Shell RES	0.0004660805	37.0	87.78	0.040912	25.0	\$1,860.46	876
SFLU		Ceiling Insulation R11-R49 SF LI DI electric furnace base	1,421.6	Building Shell RES	0.0004660805	1,286.5	135.04	0.062941	25.0	\$2,862.25	1347
SFLU		Ceiling Insulation R11-R49 SF LI DI heat pump base	886.1	Building Shell RES	0.0004660805	737.7	148.40	0.069166	25.0	\$2,862.25	1347
SFLU		Ceiling Insulation R11-R49 SF LI DI gas heat electric cool base	191.9	Building Shell RES	0.0004660805	56.9	135.04	0.062941	25.0	\$2,862.25	1347
MFLU		Ceiling Insulation R5-R30 MF LI DI electric furnace base	1,232.2	Building Shell RES	0.0004660805	1,115.1	117.05	0.054555	25.0	\$836.16	719
MFLU		Ceiling Insulation R5-R30 MF LI DI heat pump base	768.1	Building Shell RES	0.0004660805	639.5	128.63	0.059951	25.0	\$836.16	719
MFLU		Ceiling Insulation R5-R30 MF LI DI gas heat electric cool base	166.4	Building Shell RES	0.0004660805	49.3	117.05	0.054555	25.0	\$836.16	719
SFLU		Ceiling Insulation R5-R30 SF LI DI electric furnace base	1,895.6	Building Shell RES	0.0004660805	1,715.5	180.08	0.083931	25.0	\$1,286.39	1106
SFLU		Ceiling Insulation R5-R30 SF LI DI heat pump base	1,181.7	Building Shell RES	0.0004660805	983.8	197.89	0.092232	25.0	\$1,286.39	1106
SFLU		Ceiling Insulation R5-R30 SF LI DI gas heat electric cool base	255.9	Building Shell RES	0.0004660805	75.8	180.08	0.083931	25.0	\$1,286.39	1106
MFLU		Ceiling Insulation R5-R38 MF LI DI electric furnace base	1,323.9	Building Shell RES	0.0004660805	1,198.1	125.76	0.058615	25.0	\$1,208.50	719
MFLU		Ceiling Insulation R5-R38 MF LI DI heat pump base	825.2	Building Shell RES	0.0004660805	687.0	138.20	0.064412	25.0	\$1,208.50	719
MFLU		Ceiling Insulation R5-R38 MF LI DI gas heat electric cool base	178.7	Building Shell RES	0.0004660805	53.0	125.76	0.058615	25.0	\$1,208.50	719
SFLU		Ceiling Insulation R5-R38 SF LI DI electric furnace base	2,036.7	Building Shell RES	0.0004660805	1,843.2	193.48	0.090177	25.0	\$1,859.23	1106
SFLU		Ceiling Insulation R5-R38 SF LI DI heat pump base	1,269.6	Building Shell RES	0.0004660805	1,057.0	212.61	0.099096	25.0	\$1,859.23	1106
SFLU		Ceiling Insulation R5-R38 SF LI DI gas heat electric cool base	275.0	Building Shell RES	0.0004660805	81.5	193.48	0.090177	25.0	\$1,859.23	1106
MFLU		Ceiling Insulation R5-R49 MF LI DI electric furnace base	1,405.6	Building Shell RES	0.0004660805	1,272.0	133.52	0.062233	25.0	\$1,846.68	719
MFLU		Ceiling Insulation R5-R49 MF LI DI heat pump base	876.2	Building Shell RES	0.0004660805	729.5	146.73	0.068388	25.0	\$1,846.68	719
MFLU		Ceiling Insulation R5-R49 MF LI DI gas heat electric cool base	189.8	Building Shell RES	0.0004660805	56.2	133.52	0.062233	25.0	\$1,846.68	719
SFLU		Ceiling Insulation R5-R49 SF LI DI electric furnace base	2,162.4	Building Shell RES	0.0004660805	1,957.0	205.42	0.095743	25.0	\$2,841.04	1106
SFLU		Ceiling Insulation R5-R49 SF LI DI heat pump base	1,348.0	Building Shell RES	0.0004660805	1,122.2	225.74	0.105213	25.0	\$2,841.04	1106
SFLU		Ceiling Insulation R5-R49 SF LI DI gas heat electric cool base	291.9	Building Shell RES	0.0004660805	86.5	205.42	0.095743	25.0	\$2,841.04	1106
MFLU		Ceiling Insulation R5-R60 MF LI DI electric furnace base	1,459.6	Building Shell RES	0.0004660805	1,321.0	138.66	0.064627	25.0	\$2,461.73	719
MFLU		Ceiling Insulation R5-R60 MF LI DI heat pump base	909.9	Building Shell RES	0.0004660805	757.5	152.37	0.071018	25.0	\$2,461.73	719
MFLU		Ceiling Insulation R5-R60 MF LI DI gas heat electric cool base	197.1	Building Shell RES	0.0004660805	58.4	138.66	0.064627	25.0	\$2,461.73	719
SFLU		Ceiling Insulation R5-R60 SF LI DI electric furnace base	2,245.6	Building Shell RES	0.0004660805	2,023.2	213.32	0.099426	25.0	\$3,787.28	1106
SFLU		Ceiling Insulation R5-R60 SF LI DI heat pump base	1,399.8	Building Shell RES	0.0004660805	1,165.4	234.42	0.109259	25.0	\$3,787.28	1106
SFLU		Ceiling Insulation R5-R60 SF LI DI gas heat electric cool base	303.2	Building Shell RES	0.0004660805	89.9	213.32	0.099426	25.0	\$3,787.28	1106

Floor Insulation

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units - area of floor (ft2)
MFLU		Floor Insulation R25 Mobile Home electric furnace/baseboard and electric cooling	2,641.1	Building Shell RES	0.0004660805	2389.3	251.9	0.1174	25.0	\$734.04	1080

Dirty Filter Alarm

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units
MFLU		Dirty Filter Alarm_MFLU	168.5	HVAC RES	0.0004660805	106.6	61.9	0.0289	14.0	\$5.00	per measure

Duct Insulation

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	ΔkWhCooling	ΔkWhHeating	Atherms	kW	EUL	Inc. Cost*	Units
SFLU		Duct Insulation - Electric Heating	1436.6	HVAC RES	0.0004660805	58.9	1377.7	0.00	0.6696	20.0	\$138.70	
SFLU		Mobile Home Adjusted Duct Insulation - Electric Heating	1267.6	HVAC RES	0.0004660805	52.0	1215.7	0.00	0.5908	20.0	\$138.70	
SFLU		Duct Insulation - Gas Heating	114.3	HVAC RES	0.0004660805	58.9	55.4	60.26	0.0533	20.0	\$138.70	

RESIDENTIAL INCOME ELIGIBLE

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.)
SFLU		Duct Repair (Sealing) - Electric Heating	183.233	HVAC RES	0.0004660805	30.2	153.1	0.0141	20.0	\$299.34	37
SFLU		Duct Repair (Sealing) - Electric Heating - MH Adjusted	218.613	HVAC RES	0.0004660805	30.2	188.4	0.0141	20.0	\$299.34	37

ECM/ Blower Motor

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	Auto kWh	Continuous kWh	kW	EUL	Inc. Cost	Units
SFLU		ECM Auto Fan EUL Replacement -SF	591.9	HVAC RES	0.0004660805	265.2	4.7	322.0	0.0	0.0022	20	\$97.00	per measure
SFLU		ECM Auto Fan Early Replacement ER 1 (Full Cost) - SF	794.5	HVAC RES	0.0004660805	315.7	156.8	322.0	0.0	0.0731	6	\$475.00	per measure
SFLU		ECM Auto Fan Early Replacement ER2 (Remaining Life) - SF	591.9	HVAC RES ER2	0.0004660805	265.2	4.7	322.0	0.0	0.0022	12	\$97.00	per measure
SFLU		ECM Continuous Fan EUL Replacement -SF	325.9	HVAC RES	0.0004660805	265.2	4.7	0.0	2986.0	0.0022	20	\$97.00	per measure
SFLU		ECM Continuous Fan Early Replacement ER 1 (Full Cost) - SF	3458.5	HVAC RES	0.0004660805	315.7	156.8	0.0	2986.0	0.0731	6	\$496.50	per measure
SFLU		ECM Continuous Fan Early Replacement ER2 (Remaining Life) - SF	3255.9	HVAC RES ER2	0.0004660805	265.2	4.7	0.0	2986.0	0.0022	12	\$97.00	per measure
MFLU		ECM Auto Fan EUL Replacement - MF	591.9	HVAC RES	0.0004660805	265.2	4.7	322.0	0.0	0.0022	20	\$97.00	per measure
MFLU		ECM Auto Fan Early Replacement ER 1 (Full Cost) - MF	794.5	HVAC RES	0.0004660805	315.7	156.8	322.0	0.0	0.0731	6	\$496.50	per measure
MFLU		ECM Auto Fan Early Replacement ER2 (Remaining Life) - MF	591.9	HVAC RES ER2	0.0004660805	265.2	4.7	322.0	0.0	0.0022	12	\$97.00	per measure
MFLU		ECM Continuous Fan EUL Replacement - MF	325.9	HVAC RES	0.0004660805	265.2	4.7	0.0	2986.0	0.0022	20	\$97.00	per measure
MFLU		ECM Continuous Fan Early Replacement ER 1 (Full Cost) - MF	3458.5	HVAC RES	0.0004660805	315.7	156.8	0.0	2986.0	0.0731	6	\$496.50	per measure
MFLU		ECM Continuous Fan Early Replacement ER2 (Remaining Life) - MF	3255.9	HVAC RES ER2	0.0004660805	265.2	4.7	0.0	2986.0	0.0022	12	\$97.00	per measure

Heat Pump (HP) Tune-up

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
SF		General HP tune-up (no charge or coil clean)	146.1	Cooling RES	0.000947181	0.1384	2.0	\$70.00	per measure
SF		General HP tune-up (no charge or coil clean)	157.9	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
MF		General HP tune-up (no charge or coil clean)	94.9	Cooling RES	0.000947181	0.0899	2.0	\$70.00	per measure
MF		General HP tune-up (no charge or coil clean)	102.6	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
SF		HP tune-up / Refrigerant charge SF	609.2	Cooling RES	0.000947181	0.5772	2.0	\$81.00	per measure
SF		HP tune-up / Refrigerant charge SF	760.0	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
MF		HP tune-up / Refrigerant charge MF	396.0	Cooling RES	0.000947181	0.3752	2.0	\$81.00	per measure
MF		HP tune-up / Refrigerant charge MF	494.0	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
SF		HP tune-up / Indoor Coil (Evaporator) Cleaning SF	100.8	Cooling RES	0.000947181	0.0955	2.0	\$63.00	per measure
SF		HP tune-up / Indoor Coil (Evaporator) Cleaning SF	107.6	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
MF		HP tune-up / Indoor Coil (Evaporator) Cleaning MF	65.5	Cooling RES	0.000947181	0.0621	2.0	\$63.00	per measure
MF		HP tune-up / Indoor Coil (Evaporator) Cleaning MF	69.9	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
SF		HP tune-up / Outdoor Coil (Condenser) Cleaning SF	201.7	Cooling RES	0.000947181	0.1911	2.0	\$31.00	per measure
SF		HP tune-up / Outdoor Coil (Condenser) Cleaning SF	221.5	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure
MF		HP tune-up / Outdoor Coil (Condenser) Cleaning MF	131.1	Cooling RES	0.000947181	0.1242	2.0	\$31.00	per measure
MF		HP tune-up / Outdoor Coil (Condenser) Cleaning MF	144.0	Heating RES	0.000000000	0.0000	2.0	\$0.00	per measure

Low Flow Faucet Aerators

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
MFLU		Low Flow Bathroom Faucet Aerator MFLU	38.8	Water heating RES	0.000887318	0.047	0.0034	10.0	\$11.33	per measure
MFLU DI		Low Flow Bathroom Faucet Aerator MFLU DI	37.9	Water heating RES	0.000887318	0.047	0.0034	10.0	\$11.33	per measure
SFLU DI		Low Flow Bathroom Faucet Aerator SFLU DI	37.9	Water heating RES	0.000887318	0.047	0.0034	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
MFLU		Low Flow Showerhead MFLU	205.5	Water heating RES	0.000887318	0.109	0.0182	10.0	\$7.00	per measure
MFLU DI		Low Flow Showerhead MFLU DI	219.8	Water heating RES	0.000887318	0.109	0.0195	10.0	\$7.00	per measure
SFLU DI		Low Flow Showerhead SFLU DI	193.6	Water heating RES	0.000887318	1.856	0.0172	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
MFLU		Pipe Insulation MFLU	16.47	Water heating RES	0.000887318	0.0015	12.0000	\$7.10	per foot
MFLU DI		Pipe Insulation MFLU DI	16.47	Water heating RES	0.000887318	0.0015	12.0000	\$7.10	per foot
SFLU DI		Pipe Insulation SFLU DI	16.47	Water heating RES	0.000887318	0.0015	12.0000	\$7.10	per foot

RESIDENTIAL INCOME ELIGIBLE

Programmable Thermostat

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
MFLU		Setback thermostat - full setback - ASHP heating/cooling MF	102.4	Cooling RES	0.0009474181	0.10	10.0	\$70.00	per measure
MFLU		Setback thermostat - full setback - ASHP heating/cooling MF	339.0	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
SFLU		Setback thermostat - full setback - ASHP heating/cooling SF	157.6	Cooling RES	0.0009474181	0.15	10.0	\$70.00	per measure
SFLU		Setback thermostat - full setback - ASHP heating/cooling SF	521.5	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
MFLU		Setback thermostat - full setback - elec furnace heating / central AC MF	102.4	Cooling RES	0.0009474181	0.10	10.0	\$70.00	per measure
MFLU		Setback thermostat - full setback - elec furnace heating / central AC MF	576.3	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
SFLU		Setback thermostat - full setback - elec furnace heating / central AC SF	157.6	Cooling RES	0.0009474181	0.15	10.0	\$70.00	per measure
SFLU		Setback thermostat - full setback - elec furnace heating / central AC SF	886.6	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
MFLU		Setback thermostat - full setback - gas heating / central AC MF	102.4	Cooling RES	0.0009474181	0.10	10.0	\$70.00	per measure
MFLU		Setback thermostat - full setback - gas heating / central AC MF	0.0	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
SFLU		Setback thermostat for SF - full setback - gas heating / central AC	157.6	Cooling RES	0.0009474181	0.15	10.0	\$70.00	per measure
SFLU		Setback thermostat for SF - full setback - gas heating / central AC	0.0	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
MFLU		Setback thermostat - full setback - Unknown MF	102.4	Cooling RES	0.0009474181	0.10	10.0	\$70.00	per measure
MFLU		Setback thermostat - full setback - Unknown MF	135.8	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure
SFLU		Setback thermostat for SF - full setback - Unknown	157.6	Cooling RES	0.0009474181	0.15	10.0	\$70.00	per measure
SFLU		Setback thermostat for SF - full setback - Unknown	209.0	Heating RES	0.0000000000	0.00	10.0	\$0.00	per measure

Thermostatic Restrictor Shower Valve

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
SFLU DI		Shower Start 1.5 gpm electric water heater SFU DI	41.7	Water heating RES	0.000887318	0.109	0.0037	10.0	\$50.00	per measure
MFLU DI		Shower Start 1.5 gpm electric water heater MFLU DI	47.3	Water heating RES	0.000887318	1.856	0.0042	10.0	\$50.00	per measure

Water Heater Wrap

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
SFLU		Water Heater Wrap SFU	100.5	Water heating RES	0.000887318	0.0089	12.0	\$58.00	per measure

Common Area Faucet Aerators

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
MFLU		Common Area Low Flow Bathroom Faucet Aerator	28.4	Water heating RES	0.000887318	0.071	0.0025	10.0	\$11.33	per measure

Common Area Low Flow Showerheads

Measure Reference No.	Program/Channel	Measure	kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
MFLU DI		Common Area Low Flow Showerhead	213.3	Water heating RES	0.000887318	0.109	0.0189	10.0	\$7.00	per measure

Lighting

\*\* CFL baseline is Post 2020, EISA baseline is pre-2020 \*\*

Measure Reference	Program/Channel	Measure	Gross 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	
Lighting		LED - 10.5W Downlight E26 (EISA baseline) LI DI	23.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	23.1	0.00000000	0.0035	19.0	6.0	\$6.00	\$3.30	per measure
Lighting		LED - 10W (Halogen baseline) LIDI	20.7	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	20.7	0.00000000	0.0031	19.0	6.0	\$6.00	\$3.68	per measure
Lighting		LED - 12W (Halogen baseline) LI DI	27.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	27.9	0.00000000	0.0042	19.0	6.0	\$6.00	\$4.72	per measure
Lighting		LED - 12W Dimmable Light Bulb (Replacing Specialty Incandescent) LI DI	42.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	42.9	0.00000000	0.0064	19.0	6.0	\$6.00	\$3.53	per measure
Lighting		LED - 15W (Halogen baseline) LIDI	27.2	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	27.2	0.00000000	0.0041	19.0	6.0	\$8.00	\$6.27	per measure
Lighting		LED - 15W Flood Light PAR30 Bulb (Halogen baseline) LI DI	32.7	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	32.7	0.00000000	0.0049	19.0	6.0	\$15.00	\$4.92	per measure
Lighting		LED - 18W Flood Light PAR30 Bulb (Halogen baseline) LI DI	52.7	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	52.7	0.00000000	0.0079	19.0	6.0	\$15.00	\$4.92	per measure
Lighting		LED - 20W (Halogen baseline) LIDI	36.6	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	36.6	0.00000000	0.0055	19.0	6.0	\$8.00	\$7.83	per measure
Lighting		LED - 4W Candelabra (Replacing Specialty Incandescent) LI DI	23.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	23.1	0.00000000	0.0034	19.0	6.0	\$7.00	\$3.27	per measure
Lighting		LED - 4W Candelabra (CFL baseline) LIDI	2.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	2.9	0.00000000	0.0004	19.0	6.0	\$7.00	\$3.27	per measure
Lighting		LED - 8W Globe Light G25 Bulb (Replacing Specialty Incandescent) LI DI	3.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	3.3	0.00000000	0.0005	19.0	6.0	\$7.00	\$3.27	per measure
Lighting		LED - 8W Globe Light G25 Bulb (Replacing CFL) LIDI	3.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	3.3	0.00000000	0.0005	19.0	6.0	\$7.00	\$3.27	per measure
Lighting		LED - 10W (CFL baseline) LIDI	2.8	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	2.8	0.00000000	0.0004	19.0	6.0	\$6.00	\$3.68	per measure
Lighting		LED - 10.5W Downlight E26 (CFL baseline) LIDI	9.0	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	9.0	0.00000000	0.0013	19.0	6.0	\$6.00	\$3.30	per measure
Lighting		LED - 12W Dimmable Light Bulb (Replacing CFL) LIDI	5.5	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.5	0.00000000	0.0008	19.0	6.0	\$6.00	\$3.53	per measure
Lighting		LED - 12W (Replacing CFL) LIDI	5.5	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.5	0.00000000	0.0008	19.0	6.0	\$6.00	\$4.72	per measure
Lighting		LED - 15W (CFL baseline) LIDI	5.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.3	0.00000000	0.0008	19.0	6.0	\$8.00	\$6.27	per measure
Lighting		LED - 15W Flood Light PAR30 Bulb (CFL baseline) LIDI	3.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	3.1	0.00000000	0.0005	19.0	6.0	\$10.00	\$4.92	per measure
Lighting		LED - 18W Flood Light PAR30 Bulb (CFL baseline) LIDI	3.2	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	3.2	0.00000000	0.0005	19.0	6.0	\$15.00	\$4.92	per measure
Lighting		LED - 20W (CFL baseline) LIDI	6.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	6.3	0.00000000	0.0009	19.0	6.0	\$8.00	\$7.83	per measure

RESIDENTIAL INCOME ELIGIBLE

Advanced Power Strips Tier 1 / Load Sensing

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	TOS/NC/DI - Home Office	Advanced Tier 1 Power Strips / TOS/NC/DI - Home Office	31.0	Miscellaneous RES	0.0001148238	0.0036	10.0	\$20.00	per measure
	Kits - Home Office	Advanced Tier 1 Power Strips / Kits - Home Office	24.2	Miscellaneous RES	0.0001148238	0.0028	10.0	\$20.00	per measure
	TOS/NC/DI - Home Entertainment	Advanced Tier 1 Power Strips / TOS/NC/DI - Home Entertainment	75.1	Miscellaneous RES	0.0001148238	0.0086	10.0	\$20.00	per measure
	Kits - Home Entertainment	Advanced Tier 1 Power Strips / Kits - Home Entertainment	58.6	Miscellaneous RES	0.0001148238	0.0067	10.0	\$20.00	per measure
	TOS/NC/DI - Unknown Location	Advanced Tier 1 Power Strips / TOS/NC/DI - Unknown Location	59.2	Miscellaneous RES	0.0001148238	0.0068	10.0	\$20.00	per measure
	Kits - Unknown Location	Advanced Tier 1 Power / Kits - Unknown Location	42.1	Miscellaneous RES	0.0001148238	0.0048	10.0	\$20.00	per measure
	Average	Advanced Tier 2 Power Strips / Average	162.0	Miscellaneous RES	0.0001148238	0.0186	10.0	\$30.00	per measure

(Class B and G are the 2 classes of power strip currently in the market, therefore the savings of class B and G were averaged for savings estimate (See efficient products deemed table)

Refrigerator

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Income Eligible	Refrigerator - early replacement ER1 (Full Cost)	564.7	Refrigeration RES	0.0001286107	0.0726	6.0	\$753.00	per measure
	Income Eligible	Refrigerator - early replacement ER2 (Remaining Life)	46.7	Refrigeration RES ER2	0.0001286107	0.0060	11.0	\$0.00	per measure

RESIDENTIAL HOME ENERGY REPORT

Home Energy Report

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
SF		Home Energy Report	150.0	Building Shell RES	0.0004660805	0.0699	1.0	\$0.00	per report



RESIDENTIAL MULTI-FAMILY MARKET RATE

AC Tune-up

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
MF Market Rate		General Tune-Up (no charge or coil clean) / MFMR	92.6	Cooling RES	0.0009474181	0.0878	2.0	\$70.00	per measure
MF Market Rate		AC Tune-up / refrigerant charge / MFMR	386.4	Cooling RES	0.0009474181	0.3660	2.0	\$81.00	per measure
MF Market Rate		Indoor Coil (Evaporator) Cleaning / MFMR	63.9	Cooling RES	0.0009474181	0.0606	2.0	\$63.00	per measure
MF Market Rate		Outdoor Coil (Condenser) Cleaning / MFMR	127.9	Cooling RES	0.0009474181	0.1212	2.0	\$31.00	per measure

Ceiling Insulation

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units - area of ceiling/attic (ft2)
MF Market Rate		Ceiling Insulation R11-R49 MFMR electric furnace base	924.0	Building Shell RES	0.0004660805	836.2	87.78	0.0409	25.0	\$1,860.46	876
MF Market Rate		Ceiling Insulation R11-R49 MFMR gas heat and electric cool base	466.2	Building Shell RES	0.0004660805	369.7	96.46	0.0450	25.0	\$1,860.46	876
MF Market Rate		Ceiling Insulation R5-R30 MFMR electric furnace base	1,232.2	Building Shell RES	0.0004660805	1115.1	117.05	0.0546	25.0	\$836.16	719
MF Market Rate		Ceiling Insulation R5-R30 MFMR gas heat and electric cool base	621.6	Building Shell RES	0.0004660805	493.0	128.63	0.0600	25.0	\$836.16	719
MF Market Rate		Ceiling Insulation R5-R38 MFMR electric furnace base	1,323.9	Building Shell RES	0.0004660805	1198.1	125.76	0.0586	25.0	\$1,208.50	719
MF Market Rate		Ceiling Insulation R5-R38 MFMR gas heat and electric cool base	667.9	Building Shell RES	0.0004660805	529.7	138.20	0.0644	25.0	\$1,208.50	719
MF Market Rate		Ceiling Insulation R5-R49 MFMR electric furnace base	1,405.6	Building Shell RES	0.0004660805	1272.0	133.52	0.0622	25.0	\$1,846.68	719
MF Market Rate		Ceiling Insulation R5-R49 MFMR gas heat and electric cool base	709.1	Building Shell RES	0.0004660805	562.4	146.73	0.0684	25.0	\$1,846.68	719
MF Market Rate		Ceiling Insulation R5-R60 MFMR electric furnace base	1,459.6	Building Shell RES	0.0004660805	1321.0	138.66	0.0646	25.0	\$2,461.73	719
MF Market Rate		Ceiling Insulation R5-R60 MFMR gas heat and electric cool base	736.4	Building Shell RES	0.0004660805	584.0	152.37	0.0710	25.0	\$2,461.73	719

Dirty Filter Alarm

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	kW	EUL	Inc. Cost	Units
	HVAC	Dirty Filter Alarm_MFMR	79.2	HVAC RES	0.0004660805	50.1	29.1	0.0136	14.0	\$5.00	per measure

ECM/ Blower Motor

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	Heating kWh	Cooling kWh	Auto kWh	Continuous kWh	kW	EUL*	Inc. Cost	Units
MF Market Rate		ECM Auto Fan Early Replacement ER1 (Full Cost) - MFMR	513.9	HVAC RES	0.0004660805	252.6	3.8	257.6	0.0	0.0018	6.0	\$475.00	per measure
MF Market Rate		ECM Auto Fan Early Replacement ER2 (Remaining Life) - MFMR	513.9	HVAC RES ER2	0.0004660805	252.6	3.8	257.6	0.0	0.0018	12.0		per measure

\*EUL rounded down from 20 to 18 total years to make values divisible by 3

Lighting

Measure Reference No.	Program/Channel	Measure	Gross 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
Lighting		LED - 10W (CFL baseline)	4.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	4.1	0.0	0.0006	19.0	6.0	\$2.03	per measure
Lighting		LED - 10W (Halogen baseline)	22.0	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	22.0	0.0	0.0033	19.0	6.0	\$2.03	per measure
Lighting		LED - 12W Dimmable Light Bulb (Replacing CFL)	5.5	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.5	0.0	0.0008	19.0	6.0	\$4.14	per measure
Lighting		LED - 12W Dimmable Light Bulb (Replacing Specialty Incandescent)	42.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	42.9	0.0	0.0064	19.0	6.0	\$4.14	per measure
Lighting		LED - 12W (Halogen baseline)	27.9	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	27.9	0.0	0.0042	19.0	6.0	\$4.72	per measure
Lighting		LED - 12W (Replacing CFL)	5.5	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.5	0.0	0.0008	19.0	6.0	\$4.72	per measure
Lighting		LED - 15W (Halogen baseline)	27.2	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	27.2	0.0	0.0041	19.0	6.0	\$6.27	per measure
Lighting		LED - 15W (CFL baseline)	5.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	5.3	0.0	0.0008	19.0	6.0	\$6.27	per measure
Lighting		LED - 20W (Halogen baseline)	36.6	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	36.6	0.0	0.0055	19.0	6.0	\$7.83	per measure
Lighting		LED - 20W (CFL baseline)	6.3	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	6.3	0.0	0.0009	19.0	6.0	\$7.83	per measure
Lighting		LED - 15W Flood Light PAR30 Bulb (Halogen baseline)	32.7	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	32.7	0.0	0.0049	19.0	6.0	\$3.05	per measure
Lighting		LED - 15W Flood Light PAR30 Bulb (CFL baseline)	3.1	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	3.1	0.0	0.0005	19.0	6.0	\$3.05	per measure
Lighting		LED Nightlights	22.0	Lighting RES	0.0001492529	Lighting BUS	0.0001899635	22.0	0.0	0.0033	19.0	6.0	\$0.35	per measure

Faucet Aerators (Kitchen)

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
MF Market Rate		Faucet Aerators (Kitchen) MFMR	115.9	Water Heating RES	0.000887318	0.079	0.0103	10.0	\$8.00	per measure

RESIDENTIAL MULTI-FAMILY MARKET RATE

Faucet Aerators (Bathroom)

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
	MF Market Rate	Faucet Aerators (Bathroom) MFMR	33.5	Water Heating RES	0.0000887318	0.062	0.0030	10.0	\$8.00	per measure

Low Flow Showerhead

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	EPG_electric	kW	EUL	Inc. Cost	Units
	MF Market Rate	Low Flow Showerhead MFMR	204.7	Water Heating RES	0.0000887318	0.109	0.0182	10.0	\$7.00	per measure

Advanced Power Strips Tier 1 / Load Sensing

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	TOS/NC/DI - Home Office	Advanced Tier 1 Power Strips / TOS/NC/DI - Home Office	31.0	Miscellaneous RES	0.0001148238	0.0036	10.0	\$20.00	per measure
	Kits - Home Office	Advanced Tier 1 Power Strips / Kits - Home Office	24.2	Miscellaneous RES	0.0001148238	0.0028	10.0	\$20.00	per measure
	TOS/NC/DI - Home Entertainment	Advanced Tier 1 Power Strips / TOS/NC/DI - Home Entertainment	75.1	Miscellaneous RES	0.0001148238	0.0086	10.0	\$20.00	per measure
	Kits - Home Entertainment	Advanced Tier 1 Power Strips / Kits - Home Entertainment	58.6	Miscellaneous RES	0.0001148238	0.0067	10.0	\$20.00	per measure
	TOS/NC/DI - Unknown Location	Advanced Tier 1 Power Strips / TOS/NC/DI - Unknown Location	59.2	Miscellaneous RES	0.0001148238	0.0068	10.0	\$20.00	per measure
	Kits - Unknown Location	Advanced Tier 1 Power / Kits - Unknown Location	42.1	Miscellaneous RES	0.0001148238	0.0048	10.0	\$20.00	per measure

Advanced Power Strips Tier 2 / Advanced Control Strategies

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Efficient Products	Advanced Tier 2 Power Strips - A	237.6	Miscellaneous RES	0.0001148238	0.0273	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - B	216.0	Miscellaneous RES	0.0001148238	0.0248	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - C	194.4	Miscellaneous RES	0.0001148238	0.0223	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - D	172.8	Miscellaneous RES	0.0001148238	0.0198	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - E	151.2	Miscellaneous RES	0.0001148238	0.0174	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - F	129.6	Miscellaneous RES	0.0001148238	0.0149	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - G	108.0	Miscellaneous RES	0.0001148238	0.0124	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - H	86.4	Miscellaneous RES	0.0001148238	0.0099	10.0	\$30.00	per measure
	Efficient Products	Advanced Tier 2 Power Strips - Average	162.0	Miscellaneous RES	0.0001148238	0.0186	10.0	\$30.00	per measure

High Efficiency Pool Pump

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kWh <sub>old</sub> /Day	kWh <sub>new</sub> /Day	kWh <sub>old</sub> /Day	kW	EUL	Inc. Cost	Units
	MF Market Rate	Variable Speed Pool Pump	2052.8	Pool Spa RES	0.0002354459	20.9760	1.58	2.52	0.4833	10.0	\$549.00	per measure

Refrigerator

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kWh <sub>base</sub>	kWh <sub>new</sub>	kW	EUL	Inc. Cost	Units
	MF Market Rate	Refrigerator - early replacement ER1 (full cost) - MFMR	564.7	Refrigeration RES	0.0001286107	985.16	467.22	0.0726	17.0	\$753.00	per measure
	MF Market Rate	Refrigerator - early replacement ER2 (remaining life) - MFMR	46.7	Refrigeration RES ER2	0.0001286107	N/A	467.22	0.0060	17.0	\$0.00	per measure

**RESIDENTIAL APPLIANCE RECYCLING**

**Refrigerator Recycling**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Appliance Recycling	Refrigerator recycling (pre-1990)	1027.5	Refrigeration RES	0.0001286107	0.132	8.0	\$140.00	per measure
	Appliance Recycling	Refrigerator recycling (post-1990)	520.0	Refrigeration RES	0.0001286107	0.067	8.0	\$141.00	per measure

**Freezer**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Appliance Recycling	Freezer recycling	891.2	Freezer RES	0.0001685722	0.150	8.0	\$140.00	per measure

**Room AC**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Appliance Recycling	Room AC recycling - Primary	302.5	Cooling RES	0.0009474181	0.2866	4.0	\$64.89	per measure
	Appliance Recycling	Room AC recycling - Secondary	195.6	Cooling RES	0.0009474181	0.1853	4.0	\$64.89	per measure

**Dehumidifier Recycling**

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW	EUL	Inc. Cost	Units
	Appliance Recycling	Dehumidifier Recycling	139	HVAC RES	0.0004660805	0.0648	5.0	\$42.76	per measure

\*EUL assumed to be 33% higher than Room AC EUL, based on TRM values for full equipment life (12 for dehumidifier and 9 for Room AC)

\*\*Cost assumed based on full cost of Dehumidifier equipment (\$230) and ratio of refrigerator recycling cost (\$140) to full refrigerator cost (\$742 + \$11) . Full cost of Dehumidifier is based on an internet search.

RESIDENTIAL DEMAND RESPONSE

Demand Response

Measure Reference No.	Program/Channel	Measure	Gross kWh Annual Savings	End Use	kW Factor	kW (Annual)*	EUL	Inc. Cost	Units
	DR	Demand Response Advanced Thermostat	177.0	HVAC RES	-	-	11.0	\$0.00	per thermostat

\* Demand savings are calculated for demand response events, therefore no demand savings are calculated based on the energy savings for this measure.