

Appendix E: Commercial Measure Assumptions

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
1	All/All	Refrigeration	Automatic Door Closer for Walk-in Coolers and Freezers	Walk-in cooler w/ automatic, hydraulic enclosure	Walk-in cooler w/o automatic enclosure	Retrofit	per unit	8	\$156.8	943	0.137	0.0
2	All/All	Refrigeration	Automatic Door Closer for Walk-in Coolers and Freezers	Walk-in freezer w/ automatic, hydraulic enclosure	Walk-in freezer w/o automatic enclosure	Retrofit	per unit	8	\$156.8	2307	0.309	0.0
3	All/All	Refrigeration	Beverage and Snack Machine Controls	Standard efficiency refrigerated vending machine w/ control system	Standard efficiency refrigerated vending machine w/o control system	Retrofit	per unit	5	\$180.0	1613	0.000	0.0
4	All/All	Refrigeration	Beverage and Snack Machine Controls	Standard efficiency non-refrigerated snack vending machine w/ control system	Standard efficiency non-refrigerated snack vending machine w/o control system	Retrofit	per unit	5	\$80.0	343	0.000	0.0
5	All/All	Refrigeration	Beverage and Snack Machine Controls	Glass front refrigerated cooler w/ control system	Glass front refrigerated cooler w/o control system	Retrofit	per unit	5	\$180.0	1210	0.000	0.0
6	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial glass door cooler w/ standard heated door w/ humidity controls	Commercial glass door cooler w/ standard heated door w/o controls - low temp (-35-0)	Retrofit	per unit	12	\$300.0	2555	0.000	0.0
7	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ humidity controls	Commercial refrigerator w/ standard heated door w/o controls - medium temp (0-20)	Retrofit	per unit	12	\$300.0	1082	0.000	0.0
8	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ humidity controls	Commercial refrigerator w/ standard heated door w/o controls - high temp (20-45)	Retrofit	per unit	12	\$300.0	1019	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
9	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial glass door cooler w/ standard heated door w/ conductivity controls	Commercial glass door cooler w/ standard heated door w/o controls - low temp (-35-0)	Retrofit	per unit	12	\$200.0	3252	0.000	0.0
10	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ conductivity controls	Commercial refrigerator w/ standard heated door w/o controls - medium temp (0-20)	Retrofit	per unit	12	\$200.0	1377	0.000	0.0
11	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ conductivity controls	Commercial refrigerator w/ standard heated door w/o controls - high temp (20-45)	Retrofit	per unit	12	\$200.0	1298	0.000	0.0
12	Restaurant/All	Refrigeration	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Baseline - Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Retrofit	per motor	15	\$50.0	411	0.033	0.0
13	Grocery/All	Refrigeration	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Baseline - Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Retrofit	per motor	15	\$50.0	392	0.051	0.0
14	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/o software	Existing standard vending machine - average # of cans	Time of Sale	per unit	14	\$500.0	1310	0.000	0.0
15	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w software	Existing standard vending machine - average # of cans	Time of Sale	per unit	14	\$500.0	1842	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
16	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/o software	New standard vending machine - average # of cans	New Construction	per unit	14	\$500.0	1310	0.000	0.0
17	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/ software	New standard vending machine - average # of cans	New Construction	per unit	14	\$500.0	1842	0.000	0.0
18	All/All	Refrigeration	Evaporator Fan Control	Evaporator fan controller that reduces fan power	Cooler w/ continuously running evaporator fan	Retrofit	per unit	16	\$291.0	481	0.060	0.0
19	All/All	Refrigeration	Strip Curtain for Walk-in Coolers and Freezers	Polyethylene strip curtain added to a walk-in freezer	Walk-in freezer w/ no strip curtain or old, ineffective strip curtain	Retrofit	per unit	6	\$286.2	2974	0.340	0.0
20	All/All	Refrigeration	Strip Curtain for Walk-in Coolers and Freezers	Polyethylene strip curtain added to a walk-in cooler	Walk-in cooler w/ no strip curtain or old, ineffective strip curtain	Retrofit	per unit	6	\$286.2	422	0.050	0.0
21	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, hermetic/semi-hermetic condenser	Retrofit	per unit	15	\$2,558.0	6426	3.265	0.0
22	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, scroll condenser	Retrofit	per unit	15	\$2,558.0	5686	2.889	0.0
23	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, discus condenser	Retrofit	per unit	15	\$2,558.0	5401	2.744	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
24	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Remote Condensing, Medium Temperature (35F - 55F)	Retrofit	per unit	5	\$126.0	393	0.000	0.0
25	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Remote Condensing, Low Temperature (0F - 30F)	Retrofit	per unit	5	\$126.0	888	0.000	0.0
26	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Self-Contained Medium Temperature (35F - 55F)	Retrofit	per unit	5	\$126.0	756	0.000	0.0
27	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Remote Condensing, Medium Temperature (35F - 55F)	Retrofit	per unit	5	\$126.0	120	0.000	0.0
28	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Remote Condensing, Low Temperature (0F - 30F)	Retrofit	per unit	5	\$126.0	273	0.000	0.0
29	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Self-Contained, Medium Temperature (35F - 55F)	Retrofit	per unit	5	\$126.0	363	0.000	0.0
30	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Self-Contained, Low Temperature (0F - 30F)	Retrofit	per unit	5	\$126.0	741	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
31	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	Rebuilt unit built to ENERGY STAR specifications - w/o software	Existing Standard vending machine unit - < 500 cans	Time of Sale	per unit	14	\$500.0	1310	0.000	0.0
32	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	Rebuilt unit built to ENERGY STAR specifications - w/ software	Existing Standard vending machine unit - 800+ cans	Time of Sale	per unit	14	\$500.0	1842	0.000	0.0
33	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New ENERGY STAR Unit - w/o software	New Standard vending machine unit	New Construction	per unit	14	\$500.0	1310	0.000	0.0
34	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New ENERGY STAR Unit - w/ software	New Standard vending machine unit	New Construction	per unit	14	\$500.0	1842	0.000	0.0
35	Warehouse/Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - single shift	Modulating compressor with blow down <= 40 hp - single shift	Time of Sale	per unit	10	\$2,081.0	1645	0.791	0.0
36	Warehouse/Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 2 shift	Modulating compressor with blow down <= 40 hp - 2 shift	Time of Sale	per unit	10	\$2,081.0	3290	0.791	0.0
37	Warehouse/Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 3 shift	Modulating compressor with blow down <= 40 hp - 3 shift	Time of Sale	per unit	10	\$2,081.0	4935	0.791	0.0
38	Warehouse/Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 4 shift	Modulating compressor with blow down <= 40 hp - 4 shift	Time of Sale	per unit	10	\$2,081.0	6926	0.791	0.0
39	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - single shift	Compressor w/ any control	Time of Sale	per unit	5	\$1,000.0	74	0.039	0.0
40	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 2 shift	Compressor w/ any control	Time of Sale	per unit	5	\$1,000.0	147	0.039	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
41	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 3 shift	Compressor w/ any control	Time of Sale	per unit	5	\$1,000.0	221	0.039	0.0
42	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 4 shift	Compressor w/ any control	Time of Sale	per unit	5	\$1,000.0	310	0.039	0.0
43	All/Total >100 kW	Miscellaneous	Compressed Air No-Loss Condensate Drains	Installation of no-loss condensate drains	Standard condensate drains (open valve, timer, or both)	Retrofit	per unit	10	\$700.0	1970	0.338	0.0
44	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, gas heating	Roof insulation equal to code requirements	Retrofit	per ft2	20	\$1.4	0	0.000	0.0
45	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, electric resistance heating	Roof insulation equal to code requirements	Retrofit	per ft2	20	\$1.4	0	0.000	0.0
46	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, heat pump heating	Roof insulation equal to code requirements	Retrofit	per ft2	20	\$1.4	0	0.000	0.0
47	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, gas heating	Roof insulation equal to code requirements	New Construction	per ft2	20	\$1.4	0	0.000	0.0
48	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, electric resistance heating	Roof insulation equal to code requirements	New Construction	per ft2	20	\$1.4	0	0.000	0.0
49	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, heat pump heating	Roof insulation equal to code requirements	New Construction	per ft2	20	\$1.4	0	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
50	All/All	Miscellaneous	Computer Power Management Software	Computer network with power management software	Computer network without software enforcing the power management capabilities in existing computers and monitors	Retrofit	per unit	5	\$29.0	161	0.000	0.0
51	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	4-Lamp 32W HPT8 with High-BF Ballast	200W Pulse Start Metal-Halide	Retrofit	per fixture	2	\$200.0	478	0.081	0.0
52	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	6-Lamp 32W HPT8 with High-BF Ballast	320W Pulse Start Metal-Halide	Retrofit	per fixture	4	\$225.0	717	0.122	0.0
53	All/All	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	8-Lamp 32W HPT8 with High-BF Ballast	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Retrofit	per fixture	4	\$250.0	1090	0.185	0.0
54	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	2-lamp High-Performance HPT8 Troffer	3-Lamp F32T8 w/ Elec. Ballast	Retrofit	per fixture	4	\$100.0	217	0.037	0.0
55	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	1-Lamp 32W HPT8 with Low-BF Ballast	1-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$50.0	39	0.007	0.0
56	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	2-Lamp 32W HPT8 with Low-BF Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$55.0	56	0.009	0.0
57	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	3-Lamp 32W HPT8 with Low-BF Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$60.0	89	0.015	0.0
58	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	4-Lamp 32W HPT8 with Low-BF Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$65.0	111	0.019	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
59	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Indirect	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	per fixture	4	\$30.0	72	0.012	0.0
60	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Indirect	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	per fixture	4	\$175.0	72	0.012	0.0
61	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	per fixture	4	\$30.0	72	0.012	0.0
64	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	1-Lamp F40T12 w/ EEMag Ballast	Retrofit	per fixture	4	\$70.0	96	0.016	0.0
65	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	per fixture	4	\$70.0	72	0.012	0.0
66	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Troffer/Wrap	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	per fixture	4	\$40.0	72	0.012	0.0
67	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Troffer/Wrap	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	per fixture	4	\$100.0	72	0.012	0.0
68	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Time of Sale	per fixture	4	\$100.0	313	0.051	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
69	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Indirect	3-Lamp F32T8 Equivalent w/ Elec. Ballast	Time of Sale	per fixture	4	\$30.0	144	0.024	0.0
70	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Indirect	3-Lamp F32T8 Equivalent w/ Elec. Ballast	Retrofit	per fixture	4	\$175.0	144	0.024	0.0
71	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$30.0	144	0.024	0.0
72	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	2-Lamp F40T12 w/ EEMag Ballast	Retrofit	per fixture	4	\$70.0	180	0.030	0.0
75	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per fixture	4	\$70.0	144	0.024	0.0
76	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Troffer/Wrap	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per fixture	4	\$40.0	144	0.024	0.0
77	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Troffer/Wrap	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per fixture	4	\$100.0	144	0.024	0.0
78	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Time of Sale	per fixture	4	\$100.0	313	0.051	0.0
79	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Retrofit	per fixture	4	\$200.0	313	0.051	0.0
80	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	per fixture	4	\$30.0	216	0.036	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
83	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	3-Lamp F40T12 w/ EEMag Ballast	Retrofit	per fixture	4	\$70.0	156	0.026	0.0
84	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	per fixture	4	\$70.0	216	0.036	0.0
85	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 High-Bay	320 Watt Pulse-Start Metal Halide	Time of Sale	per fixture	4	\$100.0	661	0.109	0.0
86	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 High-Bay	320 Watt Pulse-Start Metal Halide	Retrofit	per fixture	4	\$225.0	661	0.109	0.0
87	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	per fixture	4	\$30.0	301	0.049	0.0
88	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	4-Lamp F40T12 w/ EEMag Ballast	Retrofit	per fixture	4	\$70.0	325	0.053	0.0
91	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	per fixture	4	\$70.0	301	0.049	0.0
92	All/All	Lighting	T5 Fixtures and Lamps	6-Lamp T5 High-Bay	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Time of Sale	per fixture	4	\$100.0	697	0.115	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
93	All/All	Lighting	T5 Fixtures and Lamps	6-Lamp T5 High-Bay	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Retrofit	per fixture	4	\$250.0	697	0.115	0.0
94	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Round Signal	Incandescent	Retrofit	per signal	2	\$114.2	299	0.034	0.0
95	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Round Signal	Incandescent	Retrofit	per signal	2	\$150.2	694	0.079	0.0
96	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Flashing Signal	Incandescent	Retrofit	per signal	2	\$114.2	272	0.034	0.0
97	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Flashing Signal	Incandescent	Retrofit	per signal	2	\$150.2	631	0.079	0.0
98	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Round Signal	Incandescent	Retrofit	per signal	2	\$114.2	258	0.001	0.0
99	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Round Signal	Incandescent	Retrofit	per signal	2	\$150.2	600	0.003	0.0
100	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Flashing Signal	Incandescent	Retrofit	per signal	2	\$114.2	10	0.030	0.0
101	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Flashing Signal	Incandescent	Retrofit	per signal	2	\$150.2	24	0.069	0.0
102	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Round Signal	Incandescent	Retrofit	per signal	2	\$114.2	226	0.026	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
103	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Round Signal	Incandescent	Retrofit	per signal	2	\$150.2	520	0.059	0.0
104	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Turn Arrow	Incandescent	Retrofit	per signal	11	\$114.2	76	0.003	0.0
105	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Turn Arrow	Incandescent	Retrofit	per signal	11	\$150.2	75	0.003	0.0
106	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Turn Arrow	Incandescent	Retrofit	per signal	11	\$114.2	76	0.011	0.0
107	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Turn Arrow	Incandescent	Retrofit	per signal	11	\$150.2	76	0.011	0.0
108	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Hand/Man Pedestrian Signal	Incandescent	Retrofit	per signal	1	\$87.2	946	0.081	0.0
109	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Round Signal	Incandescent	Time of Sale	per signal	2	\$51.2	299	0.034	0.0
110	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Round Signal	Incandescent	Time of Sale	per signal	2	\$87.2	694	0.079	0.0
111	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Flashing Signal	Incandescent	Time of Sale	per signal	2	\$51.2	272	0.034	0.0
112	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Flashing Signal	Incandescent	Time of Sale	per signal	2	\$87.2	631	0.079	0.0
113	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Round Signal	Incandescent	Time of Sale	per signal	2	\$51.2	258	0.001	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
114	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Round Signal	Incandescent	Time of Sale	per signal	2	\$87.2	600	0.003	0.0
115	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Flashing Signal	Incandescent	Time of Sale	per signal	2	\$51.2	10	0.030	0.0
116	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Flashing Signal	Incandescent	Time of Sale	per signal	2	\$87.2	24	0.069	0.0
117	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Round Signal	Incandescent	Time of Sale	per signal	2	\$51.2	226	0.026	0.0
118	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Round Signal	Incandescent	Time of Sale	per signal	2	\$87.2	520	0.059	0.0
119	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Turn Arrow	Incandescent	Time of Sale	per signal	11	\$51.2	76	0.003	0.0
120	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Turn Arrow	Incandescent	Time of Sale	per signal	11	\$87.2	75	0.003	0.0
121	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Turn Arrow	Incandescent	Time of Sale	per signal	11	\$51.2	76	0.011	0.0
122	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Turn Arrow	Incandescent	Time of Sale	per signal	11	\$87.2	76	0.011	0.0
123	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Hand/Man Pedestrian Signal	Incandescent	Time of Sale	per signal	1	\$24.2	946	0.081	0.0
124	All/All	Lighting	Delamping	1-Lamp Standard 32W T8 w/ Elec Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per sensor	8	\$50.0	150	0.025	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
125	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per sensor	8	\$55.0	161	0.027	0.0
126	All/All	Lighting	Delamping	3-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per sensor	8	\$60.0	145	0.025	0.0
127	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	per sensor	8	\$55.0	306	0.052	0.0
128	All/All	Lighting	Delamping	1-Lamp Standard 32W T8 w/ Elec Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per sensor	8	\$4.4	150	0.025	0.0
129	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per sensor	8	\$5.6	161	0.027	0.0
130	All/All	Lighting	Delamping	3-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per sensor	8	\$6.8	145	0.025	0.0
131	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	per sensor	8	\$5.6	306	0.052	0.0
132	All/All	Lighting	LED Exit Signs	LED exit sign	non-LED light-source	Retrofit	per exit sign	1	\$30.0	250	0.034	0.0
133	All/Total >100 kW	Lighting	Commercial Standard CFL	15 W CFL	43W EISA compliant lamp	Time of Sale	per lamp	2	\$1.5	251	0.027	0.0
134	All/Total >100 kW	Lighting	Commercial Standard CFL	21 W CFL replacing EISA-exempt incandescent lamp	79W EISA-exempt incandescent lamp	Time of Sale	per lamp	2	\$5.0	322	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
135	All/All	Lighting	LED Bulbs and Fixtures	12.5 W Omni-directional Energystar LED	43W EISA compliant lamp	Retrofit	per lamp	2	\$2.5	270	0.029	0.0
136	All/All	Lighting	LED Bulbs and Fixtures	19 W LED replacing EISA-exempt incandescent lamp	79W EISA-exempt incandescent lamp	Retrofit	per lamp	2	\$10.0	341	0.000	0.0
137	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$716.0	710	0.103	953.5
138	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$802.0	710	0.103	989.4
139	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$1,038.0	710	0.103	1,025.2
140	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$1,275.0	710	0.103	1,061.0
141	All/All	Lighting	LED Bulbs and Fixtures	75 W Outdoor LED lamp	182W Equivalent Fixture per TRM	Time of Sale	per lamp	0	\$50.0	617	0.132	0.0
142	All/All	Lighting	LED Bulbs and Fixtures	75 W Outdoor LED lamp	182W Equivalent Fixture per TRM	Retrofit	per lamp	0	\$50.0	617	0.132	0.0
143	All/All	Lighting	LED Bulbs and Fixtures	LED 2x2 Recessed Light Fixture	T8 U-Tube 2L-FB32 w/ Elec - 2'	Time of Sale	per lamp	11	\$18.1	76	0.016	0.0
144	All/All	Lighting	LED Bulbs and Fixtures	LED 1.5x4 Recessed Light Fixture	T8 2.5L-F32 w/ Elec - 4'	Time of Sale	per lamp	11	\$5.8	145	0.031	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
145	All/All	Lighting	Delamping	4' T8 Lamp Removal with Reflector	4' T8 Lamp	Time of Sale	per lamp	11	\$25.0	175	0.030	0.0
146	All/All	Lighting	Delamping	8' T8 Lamp Removal with Reflector	8' T8 Lamp	Time of Sale	per lamp	11	\$30.0	350	0.059	0.0
147	All/All	Lighting	LED Bulbs and Fixtures	LED 2x2 Recessed Light Fixture	T8 U-Tube 2L-FB32 w/ Elec - 2'	Retrofit	per lamp	11	\$48.0	76	0.016	0.0
148	All/All	Lighting	LED Bulbs and Fixtures	LED 1.5x4 Recessed Light Fixture	T8 2.5L-F32 w/ Elec - 4'	Retrofit	per lamp	11	\$55.0	145	0.031	0.0
149	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$1,511.0	710	0.103	1,096.9
150	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	per unit	6	\$1,747.0	710	0.103	1,132.7
151	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$716.0	710	0.103	25.7
152	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$802.0	710	0.103	51.3
153	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$1,038.0	710	0.103	77.0
154	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$1,275.0	710	0.103	102.6
155	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$1,511.0	710	0.103	128.3

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
156	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	per unit	11	\$1,747.0	710	0.103	153.9
157	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 10 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Time of Sale	per unit	5	\$1,050.0	7905	0.900	0.0
158	All/Small Load (<=100 kW)	Hot Water	Low Flow Faucet Aerators - Electric DHW fuel	Bathroom faucet aerator, < 1.5 GPM	Bathroom faucet aerator, 2.25 GPM	Direct Install	per unit	9	\$8.0	122	0.032	0.0
159	All/Small Load (<=100 kW)	Hot Water	Low Flow Faucet Aerators - Electric DHW fuel	Kitchen faucet aerator, < 2.2 GPM	Kitchen faucet aerator, 2.75 GPM	Direct Install	per unit	9	\$8.0	149	0.039	0.0
160	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 2.0 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	per unit	10	\$12.0	748	0.031	0.0
161	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 1.75 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	per unit	10	\$12.0	1027	0.042	0.0
162	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 1.50 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	per unit	10	\$12.0	1306	0.054	0.0
163	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 10 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Retrofit	per unit	5	\$1,050.0	7905	0.900	0.0
165	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 15 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Time of Sale	per unit	5	\$1,950.0	12879	1.470	0.0
166	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 15 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Retrofit	per unit	5	\$1,950.0	12879	1.470	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
168	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 5 GPM	Electric commercial-grade tanked water heater > 50 gal, EF=< 0.9	Time of Sale	per unit	5	\$1,050.0	2992	0.340	0.0
169	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 5 GPM	Electric commercial-grade tanked water heater > 50 gal, EF=< 0.9	Retrofit	per unit	5	\$1,050.0	2992	0.340	0.0
171	All/Total >100 kW	Hot Water	Storage Water Heater	Electric, Storage Capacity = 50 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 50 gallons, input wattage: 12 kW - 54 kW	Time of Sale	per unit	5	\$1,050.0	1781	0.200	148.0
172	All/Total >100 kW	Hot Water	Ozone Laundry	Ozone Laundry System	Ozone Laundry System	Time of Sale	per lb capacity	10	\$79.8	3	0.000	37.9
173	All/Total >100 kW	Hot Water	Ozone Laundry	Ozone Laundry System	Ozone Laundry System	Retrofit	per lb capacity	10	\$79.8	3	0.000	37.9
174	All/Total >100 kW	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Time of Sale	per unit	15	\$1,200.0	651	0.000	2,962.7
175	All/Total >100 kW	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Retrofit	per unit	15	\$1,200.0	651	0.000	2,962.7
176	All/Small Load (<=100 kW)	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	New Construction	per unit	15	\$1,200.0	651	0.000	2,962.7
177	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EPart 2005-Compliant Freezer	Time of Sale	per unit	12	\$166.0	1272	0.136	0.0
178	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Freezer	EPart 2005-Compliant Freezer	New Construction	per unit	12	\$166.0	1272	0.136	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
179	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$166.0	3872	0.414	0.0
180	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Freezer	EAct 2005-Compliant Freezer	New Construction	per unit	12	\$166.0	3872	0.414	0.0
181	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$407.0	6794	0.726	0.0
182	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Freezer	EAct 2005-Compliant Freezer	New Construction	per unit	12	\$407.0	6794	0.726	0.0
183	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$142.0	1563	0.167	0.0
184	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Freezer	EAct 2005-Compliant Freezer	New Construction	per unit	12	\$142.0	1563	0.167	0.0
185	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$166.0	139	0.015	0.0
186	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Freezer	EAct 2005-Compliant Freezer	New Construction	per unit	12	\$166.0	139	0.015	0.0
187	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$166.0	1729	0.185	0.0
188	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Freezer	EAct 2005-Compliant Freezer	New Construction	per unit	12	\$166.0	1729	0.185	0.0
189	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$407.0	3494	0.374	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
190	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Freezer	EPAct 2005-Compliant Freezer	New Construction	per unit	12	\$407.0	3494	0.374	0.0
191	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EPAct 2005-Compliant Freezer	Time of Sale	per unit	12	\$142.0	458	0.049	0.0
192	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Freezer	EPAct 2005-Compliant Freezer	New Construction	per unit	12	\$142.0	458	0.049	0.0
193	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$164.0	672	0.072	0.0
194	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	per unit	12	\$164.0	672	0.072	0.0
195	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$164.0	729	0.078	0.0
196	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	per unit	12	\$164.0	729	0.078	0.0
197	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$249.0	891	0.095	0.0
198	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	per unit	12	\$249.0	891	0.095	0.0
199	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$143.0	721	0.077	0.0
200	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	per unit	12	\$143.0	721	0.077	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
201	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPA 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$164.0	459	0.049	0.0
202	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPA 2005-Compliant Refrigerator	New Construction	per unit	12	\$164.0	459	0.049	0.0
203	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Refrigerator	Existing EPA 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$164.0	791	0.085	0.0
204	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Refrigerator	EPA 2005-Compliant Refrigerator	New Construction	per unit	12	\$164.0	791	0.085	0.0
205	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPA 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$249.0	1105	0.118	0.0
206	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPA 2005-Compliant Refrigerator	New Construction	per unit	12	\$249.0	1105	0.118	0.0
207	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPA 2005-Compliant Refrigerator	Time of Sale	per unit	12	\$143.0	260	0.028	0.0
208	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPA 2005-Compliant Refrigerator	New Construction	per unit	12	\$143.0	260	0.028	0.0
209	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 3 pans	non-ENERGY STAR commercial steamer at end of life - 3 pans	Time of Sale	per unit	12	\$2,490.0	4876	0.897	0.0
210	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 4 pans	non-ENERGY STAR commercial steamer at end of life - 4 pans	Time of Sale	per unit	12	\$2,490.0	5752	1.059	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
211	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 5 pans	non-ENERGY STAR commercial steamer at end of life - 5 pans	Time of Sale	per unit	12	\$2,490.0	6668	1.227	0.0
212	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 6 pans	non-ENERGY STAR commercial steamer at end of life - 6 pans	Time of Sale	per unit	12	\$2,490.0	7554	1.390	0.0
213	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - under counter	non-ENERGYSTAR dishwasher at end of life - low temp - under counter - electric building and booster water heating	Time of Sale	per unit	10	\$530.0	1213	0.185	0.0
214	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - door type	non-ENERGYSTAR dishwasher at end of life - low temp - door type - electric building and booster water heating	Time of Sale	per unit	15	\$530.0	12135	1.846	0.0
215	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - single tank conventional - electric building and booster water heating	Time of Sale	per unit	20	\$170.0	11384	1.732	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
216	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - multi tank conventional - electric building and booster water heating	Time of Sale	per unit	20	\$0.0	17465	2.656	0.0
217	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - under counter	non-ENERGYSTAR dishwasher at end of life - high temp - under counter - electric building and booster water heating	Time of Sale	0	10	\$1,000.0	7471	1.136	0.0
218	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - door type	non-ENERGYSTAR dishwasher at end of life - high temp - door type - electric building and booster water heating	Time of Sale	0	15	\$500.0	14143	2.151	0.0
219	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - single tank conventional - electric building and booster water heating	Time of Sale	0	20	\$270.0	19235	2.926	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
220	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - multi tank conventional - electric building and booster water heating	Time of Sale	0	20	\$0.0	34153	5.195	0.0
221	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - under counter	non-ENERGYSTAR dishwasher at end of life - low temp - under counter - electric building and natural gas booster water heating	Time of Sale	per unit	10	\$530.0	9089	1.382	0.0
222	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - door type	non-ENERGYSTAR dishwasher at end of life - low temp - door type - electric building and natural gas booster water heating	Time of Sale	per unit	15	\$530.0	21833	3.321	0.0
223	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - single tank conventional - electric building and natural gas booster water heating	Time of Sale	per unit	20	\$170.0	24470	3.722	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
224	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - multi tank conventional - electric building and natural gas booster water heating	Time of Sale	per unit	20	\$0.0	29718	4.520	0.0
225	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - under counter	non-ENERGYSTAR dishwasher at end of life - high temp - under counter - electric building and natural gas booster water heating	Time of Sale	0	10	\$1,000.0	7208	1.096	110.0
226	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - door type	non-ENERGYSTAR dishwasher at end of life - high temp - door type - electric building and natural gas booster water heating	Time of Sale	0	15	\$500.0	19436	2.956	205.0
227	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - single tank conventional - electric building and natural gas booster water heating	Time of Sale	0	20	\$270.0	29792	4.531	258.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
228	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - multi tank conventional - electric building and natural gas booster water heating	Time of Sale	0	20	\$0.0	34974	5.320	503.0
229	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Electric Convection Oven	ENERGY STAR Electric Convection Oven	ENERGY STAR Electric Convection Oven	Time of Sale	per unit	12	\$900.0	2200	0.402	0.0
230	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Griddle	ENERGY STAR electric griddle with efficiency > 70%	Non-ENERGYSTAR electric griddle at end of use	Time of Sale	per unit	12	\$0.0	5811	0.535	0.0
231	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - Full Size (20 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	per unit	12	\$1,200.0	9314	0.686	0.0
232	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - 3/4 Size (12 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	per unit	12	\$1,800.0	3945	0.290	0.0
233	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - 1/2 Size (8 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	per unit	12	\$1,500.0	2630	0.194	0.0
234	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head <450 lbs made per day	Ice Making Head <450 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$312.0	388	0.073	0.0
235	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head >=450 lbs made per day	Ice Making Head >=450 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$1,485.0	875	0.164	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
236	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser <1000 lbs made per day	Remote Condensing Unit, w/o remote compressor <1000 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$981.0	677	0.127	0.0
237	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser >=1000 lbs made per day	Remote Condensing Unit, w/o remote compressor >=1000 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$1,821.0	1437	0.269	0.0
238	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser <934 lbs made per day	Remote Condensing Unit, w/ remote compressor <934 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$981.0	642	0.120	0.0
239	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser >=934 lbs made per day	Remote Condensing Unit, w/ remote compressor >=934 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$1,821.0	1400	0.263	0.0
240	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser <175 lbs made per day	Self Contained Unit <175 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$296.0	185	0.035	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
241	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser >=175 lbs made per day	Self Contained Unit >=175 lbs made per day meeting min. federal equipment standards	Time of Sale	per unit	10	\$312.0	376	0.071	0.0
242	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head <450 lbs made per day	Ice Making Head <450 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$312.0	388	0.073	0.0
243	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head >=450 lbs made per day	Ice Making Head >=450 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$1,485.0	875	0.164	0.0
244	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser <1000 lbs made per day	Remote Condensing Unit, w/o remote compressor <1000 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$981.0	677	0.127	0.0
245	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser >=1000 lbs made per day	Remote Condensing Unit, w/o remote compressor >=1000 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$1,821.0	1437	0.269	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
246	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser <934 lbs made per day	Remote Condensing Unit, w/ remote compressor <934 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$981.0	642	0.120	0.0
247	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser >=934 lbs made per day	Remote Condensing Unit, w/ remote compressor >=934 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$1,821.0	1400	0.263	0.0
248	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser <175 lbs made per day	Self Contained Unit <175 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$296.0	185	0.035	0.0
249	Restaurant/Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser >=175 lbs made per day	Self Contained Unit >=175 lbs made per day meeting min. federal equipment standards	New Construction	per unit	10	\$312.0	376	0.071	0.0
250	Restaurant/Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	per unit	5	\$100.0	890	0.000	39.3
251	Restaurant/Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	per unit	5	\$100.0	2671	0.000	117.9
252	Restaurant/Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	per unit	5	\$100.0	5341	0.000	235.8

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
253	Restaurant/Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	per unit	5	\$100.0	1385	0.000	61.1
254	Restaurant/Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	per unit	5	\$100.0	4154	0.000	183.4
255	Restaurant/Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	per unit	5	\$100.0	8309	0.000	366.8
256	Restaurant/Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	per unit	5	\$100.0	1385	0.000	61.1
257	Restaurant/Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	per unit	5	\$100.0	4154	0.000	183.4
258	Restaurant/Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	per unit	5	\$100.0	8309	0.000	366.8
259	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Kitchen Demand Ventilation Controls	Control system with sensors to vary exhaust rate	Kitchen ventilation with constant speed ventilation motor	Time of Sale	per fan	15	\$1,988.0	4486	0.760	7,529.0
260	Restaurant/Small Load (<=100 kW)	Food Service Equipment	Kitchen Demand Ventilation Controls	Control system with sensors to vary exhaust rate	Kitchen ventilation with constant speed ventilation motor	New Construction	per fan	15	\$1,000.0	4486	0.760	7,529.0
261	Warehouse/Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Miscellaneous	Engine Block Timer for Agricultural Equipment	Engine block heater operated by plug-in timer	Engine block heater manually plugged in	Retrofit	per unit	3	\$10.2	664	0.000	0.0
262	Warehouse/Medium Load (Over 100 kW <= 400 kW)	Miscellaneous	High Volume Low Speed Fans	20' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	per unit	10	\$4,150.0	6577	2408.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
263	Warehouse/Large Load (Over 400 kW <= 1,000 kW)	Miscellaneous	High Volume Low Speed Fans	22' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	per unit	10	\$4,180.0	8543	3128.000	0.0
264	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Volume Low Speed Fans	24' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	per unit	10	\$4,225.0	10018	3668.000	0.0
265	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 14.0cfm/W at 0.10 static pressure exhaust fan	24-35" exhaust fan	Time of Sale	per unit	7	\$150.0	372	0.118	0.0
266	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 17.1 cfm/W at 0.10 static pressure exhaust fan	36-47" exhaust fan	Time of Sale	per unit	7	\$150.0	625	0.198	0.0
267	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 20.3 cfm/W at 0.10 static pressure exhaust fan	48-71" exhaust fan	Time of Sale	per unit	7	\$150.0	1122	0.356	0.0
268	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 14.0cfm/W at 0.10 static pressure ventilation fan	24-35" ventilation fan	Time of Sale	per unit	7	\$150.0	372	0.118	0.0
269	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 17.1 cfm/W at 0.10 static pressure ventilation fan	36-47" ventilation fan	Time of Sale	per unit	7	\$150.0	625	0.198	0.0
270	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 20.3 cfm/W at 0.10 static pressure ventilation fan	48-71" ventilation fan	Time of Sale	per unit	7	\$150.0	1122	0.356	0.0
271	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 12.5 lbf/kW circulation fan	24-35" circulation fan	Time of Sale	per unit	7	\$150.0	372	0.118	0.0
272	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 18.2 lbf/kW circulation fan	36-47" circulation fan	Time of Sale	per unit	7	\$150.0	625	0.198	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
273	Warehouse/Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 23.0 lbf/kW circulation fan	48-71" circulation fan	Time of Sale	per unit	7	\$150.0	1122	0.356	0.0
274	Warehouse/Small Load (<=100 kW)	Miscellaneous	Live Stock Waterer	Electrically heated thermally insulated waterer w/ thermostat	Electric open waterer w/ sinking or floating water heater	Time of Sale	per unit	10	\$787.5	1593	0.525	0.0
275	All/Total >100 kW	HVAC	Air Conditioner Tune-up	Certified technician performs a package of services on unitary or split system air conditioner, 36 kBTU/h - 65 kBTU/h	Existing AC system w/o standing maintenance contract or tune up in last 3 years, 36 kBTU/h - 65 kBTU/h	Retrofit	per unit	3	\$400.0	4412	3.958	0.0
276	All/All	HVAC	Air Conditioner Tune-up	Certified technician performs a package of services on unitary or split system air conditioner, > 65 kBTU/h	Existing AC system w/o standing maintenance contract or tune up in last 3 years, > 65 kBTU/h	Retrofit	per unit	3	\$35.0	79	0.071	0.0
277	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	New Construction	per unit	20	\$127.0	428	0.049	0.0
278	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	New Construction	per unit	20	\$127.0	137	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
279	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - VAV Reheat, Economizer	New Construction	per unit	20	\$127.0	126	0.049	0.0
280	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	New Construction	per unit	20	\$22.0	266	0.049	0.0
281	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	New Construction	per unit	20	\$22.0	85	0.049	0.0
282	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - VAV, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - VAV, Economizer	New Construction	per unit	20	\$22.0	79	0.049	0.0
283	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, No Economizer	New Construction	per unit	20	\$128.0	266	0.049	0.0
284	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, Economizer	New Construction	per unit	20	\$128.0	85	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
285	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - VAV Reheat, Economizer	New Construction	per unit	20	\$128.0	79	0.049	0.0
286	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	New Construction	per unit	20	\$70.0	266	0.049	0.0
287	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	New Construction	per unit	20	\$70.0	85	0.049	0.0
288	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	New Construction	per unit	20	\$70.0	79	0.049	0.0
289	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	New Construction	per unit	20	\$48.0	266	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
290	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	New Construction	per unit	20	\$48.0	85	0.049	0.0
291	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	New Construction	per unit	20	\$48.0	79	0.049	0.0
292	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	Time of Sale	per unit	20	\$127.0	428	0.049	0.0
293	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	Time of Sale	per unit	20	\$127.0	137	0.049	0.0
294	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - VAV Reheat, Economizer	Time of Sale	per unit	20	\$127.0	126	0.049	0.0
295	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	Time of Sale	per unit	20	\$22.0	266	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
296	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	Time of Sale	per unit	20	\$22.0	85	0.049	0.0
297	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - VAV, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - VAV, Economizer	Time of Sale	per unit	20	\$22.0	79	0.049	0.0
298	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, No Economizer	Time of Sale	per unit	20	\$128.0	266	0.049	0.0
299	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, Economizer	Time of Sale	per unit	20	\$128.0	85	0.049	0.0
300	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - VAV Reheat, Economizer	Time of Sale	per unit	20	\$128.0	79	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
301	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Time of Sale	per unit	20	\$70.0	266	0.049	0.0
302	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Time of Sale	per unit	20	\$70.0	85	0.049	0.0
303	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Time of Sale	per unit	20	\$70.0	79	0.049	0.0
304	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Time of Sale	per unit	20	\$48.0	266	0.049	0.0
305	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Time of Sale	per unit	20	\$48.0	85	0.049	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
306	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Time of Sale	per unit	20	\$48.0	79	0.049	0.0
307	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - < 8000 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - < 8000 Btu/H	Time of Sale	per unit	9	\$40.0	15	0.028	0.0
308	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - 8000 to 13999 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - 8000 to 13999 Btu/H	Time of Sale	per unit	9	\$40.0	29	0.054	0.0
309	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - 14000 to 19999 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - 14000 to 19999 Btu/H	Time of Sale	per unit	9	\$40.0	44	0.083	0.0
310	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - >= 20000 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - >= 20000 Btu/H	Time of Sale	per unit	9	\$40.0	69	0.129	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
311	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	829	0.093	0.0
312	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	85	0.093	32.6
313	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTHP	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	387	0.093	0.0
314	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	234	0.082	0.0
315	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	142	0.082	4.1
316	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTHP	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	177	0.082	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
317	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, Central Hot Water Fan Coil w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	201	0.056	0.0
318	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, Central Hot Water Fan Coil w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	per room	15	\$260.0	109	0.056	4.1
319	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - < 65,000 Btu/h	Time of Sale	per unit	15	\$100.0	270	0.112	0.0
320	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 65,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 65,000 - 135,000 Btu/h	Time of Sale	per unit	15	\$249.5	230	0.184	0.0
321	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 135,000 - 240,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 135,000 - 240,000 Btu/h	Time of Sale	per unit	15	\$290.1	188	0.210	0.0
322	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - > 240,000 exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 240,000 - 760,000	Time of Sale	per unit	15	\$362.4	278	0.310	0.0
323	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - < 17,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - < 17,000 Btu/h	Time of Sale	per unit	15	\$100.0	163	0.095	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
324	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - 17,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - 17,000 - 135,000 Btu/h	Time of Sale	per unit	15	\$100.0	104	0.061	0.0
325	All/All	HVAC	Heat Pump Systems	Groundwater-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Groundwater-source Heat Pump - < 135,000 Btu/h	Time of Sale	per unit	15	\$100.0	78	0.046	0.0
326	All/All	HVAC	Heat Pump Systems	Ground-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Ground-source Heat Pump - < 135,000 Btu/h	Time of Sale	per unit	15	\$100.0	238	0.139	0.0
327	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - < 65,000 Btu/h	New Construction	per unit	15	\$100.0	270	0.112	0.0
328	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 65,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 65,000 - 135,000 Btu/h	New Construction	per unit	15	\$249.5	230	0.184	0.0
329	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 135,000 - 240,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 135,000 - 240,000 Btu/h	New Construction	per unit	15	\$290.1	188	0.210	0.0
330	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - > 240,000 exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 240,000 - 760,000	New Construction	per unit	15	\$362.4	278	0.310	0.0
331	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - < 17,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - < 17,000 Btu/h	New Construction	per unit	15	\$100.0	163	0.095	0.0
332	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - 17,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - 17,000 - 135,000 Btu/h	New Construction	per unit	15	\$100.0	104	0.061	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
333	All/All	HVAC	Heat Pump Systems	Groundwater-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Groundwater-source Heat Pump - < 135,000 Btu/h	New Construction	per unit	15	\$100.0	78	0.046	0.0
334	All/All	HVAC	Heat Pump Systems	Ground-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Ground-source Heat Pump - < 135,000 Btu/h	New Construction	per unit	15	\$100.0	238	0.139	0.0
335	All/All	HVAC	High Efficiency Furnace	AFUE 90% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$630.0	710	0.103	288.6
336	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$716.0	710	0.103	317.4
337	All/All	HVAC	High Efficiency Furnace	AFUE 92% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$802.0	710	0.103	346.3
338	All/All	HVAC	High Efficiency Furnace	AFUE 93% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$1,038.0	710	0.103	375.1
339	All/All	HVAC	High Efficiency Furnace	AFUE 94% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$1,275.0	710	0.103	404.0
340	All/All	HVAC	High Efficiency Furnace	AFUE 95% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$1,511.0	710	0.103	432.8
341	All/All	HVAC	High Efficiency Furnace	AFUE 96% Furnace	AFUE 80% Furnace	Time of Sale	per unit	17	\$1,747.0	710	0.103	461.7

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
342	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity = 50 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 50 gallons, input wattage: 12 kW - 54 kW	Retrofit	per unit	5	\$1,050.0	1781	0.200	148.0
344	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity =80 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 80 gallons, input wattage: 12 kW - 54 kW	Time of Sale	per unit	5	\$1,050.0	4963	0.570	148.0
345	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity =80 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 80 gallons, input wattage: 12 kW - 54 kW	Retrofit	per unit	5	\$1,050.0	4963	0.570	148.0
347	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity >= 100 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity >= 100 gallons, input wattage: 12 kW - 54 kW	Time of Sale	per unit	5	\$1,950.0	8274	0.940	148.0
348	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity >= 100 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity >= 100 gallons, input wattage: 12 kW - 54 kW	Retrofit	per unit	5	\$1,950.0	8274	0.940	148.0
351	All/All	Lighting	LED Bulbs and Fixtures	LED High- and Low-Bay Fixtures	MH 250 W CWA Pulse Start	Retrofit	per lamp	3	\$160.0	638	0.136	0.0
353	All/All	Lighting	LED Bulbs and Fixtures	LED High- and Low-Bay Fixtures	MH 250 W CWA Pulse Start	Time of Sale	per lamp	3	\$100.0	638	0.136	0.0
354	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	Time of Sale	per unit	15	\$84.0	182	0.140	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
355	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	Time of Sale	per unit	15	\$84.0	188	0.140	0.0
356	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012 w/ elec res htg	Time of Sale	per unit	15	\$84.0	4089	0.057	0.0
357	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012 w/ elec res htg	Time of Sale	per unit	15	\$84.0	3685	0.057	0.0
358	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	Time of Sale	per unit	15	\$84.0	394	0.057	0.0
359	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	Time of Sale	per unit	15	\$84.0	364	0.057	0.0
360	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	per unit	15	\$84.0	182	0.140	0.0
361	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	per unit	15	\$84.0	188	0.140	0.0
362	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	per unit	15	\$84.0	4089	0.057	0.0
363	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	per unit	15	\$84.0	3685	0.057	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
364	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	New Construction	per unit	15	\$84.0	152	0.057	0.0
365	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	New Construction	per unit	15	\$84.0	147	0.057	0.0
366	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled AC - < 65,000 Btu/h	Time of Sale	per unit	15	\$100.0	150	0.059	0.0
367	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Air-cooled AC - >= 760,000 , all other heating type	Time of Sale	per unit	15	\$100.0	106	0.041	0.0
368	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	74	0.029	0.0
369	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled condensing units - >135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled condensing units	Time of Sale	per unit	15	\$100.0	334	0.131	0.0
370	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Small-duct high-velocity - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Small-duct high-velocity - < 65,000 Btu/h	Time of Sale	per unit	15	\$100.0	419	0.164	0.0
371	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Through-the-wall AC - < 30,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Through-the-wall AC - < 30,000 Btu/h	Time of Sale	per unit	15	\$100.0	174	0.068	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
372	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Evaporatively cooled condensing units	Time of Sale	per unit	15	\$100.0	24	0.009	0.0
373	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Evaporatively-cooled AC - < 65,000 Btu/h	Time of Sale	per unit	15	\$100.0	164	0.064	0.0
374	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Evaporatively-cooled AC - >= 760,000 , all other heating type	Time of Sale	per unit	15	\$100.0	212	0.083	0.0
375	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	191	0.075	0.0
376	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	Time of Sale	per unit	15	\$100.0	180	0.070	0.0
377	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	159	0.062	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
378	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , all other heating section type	Time of Sale	per unit	15	\$100.0	139	0.055	0.0
379	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	170	0.066	0.0
380	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	Time of Sale	per unit	15	\$100.0	170	0.066	0.0
381	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	149	0.058	0.0
382	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Water-cooled AC - < 65,000 Btu/h	Time of Sale	per unit	15	\$100.0	164	0.064	0.0
383	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Water-cooled AC - >= 760,000 , all other heating type	Time of Sale	per unit	15	\$100.0	159	0.062	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
384	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	159	0.062	0.0
385	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	Time of Sale	per unit	15	\$100.0	129	0.051	0.0
386	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	110	0.043	0.0
387	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 240,000 - 760,000 , all other heating section type	Time of Sale	per unit	15	\$100.0	139	0.055	0.0
388	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	120	0.047	0.0
389	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	Time of Sale	per unit	15	\$100.0	170	0.066	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
390	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	Time of Sale	per unit	15	\$100.0	149	0.058	0.0
391	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Water-cooled condensing units	Time of Sale	per unit	15	\$100.0	24	0.009	0.0
392	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled AC - < 65,000 Btu/h	New Construction	per unit	15	\$100.0	150	0.059	0.0
393	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Through-the-wall AC - < 30,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Through-the-wall AC - < 30,000 Btu/h	New Construction	per unit	15	\$100.0	174	0.068	0.0
394	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Small-duct high-velocity - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Small-duct high-velocity - < 65,000 Btu/h	New Construction	per unit	15	\$100.0	419	0.164	0.0
395	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	74	0.029	0.0
396	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Air-cooled AC - >= 760,000 , all other heating type	New Construction	per unit	15	\$100.0	106	0.041	0.0
397	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Water-cooled AC - < 65,000 Btu/h	New Construction	per unit	15	\$100.0	164	0.064	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
398	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	149	0.058	0.0
399	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	170	0.066	0.0
400	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	110	0.043	0.0
401	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	129	0.051	0.0
402	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	120	0.047	0.0
403	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	per unit	15	\$100.0	139	0.055	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
404	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	159	0.062	0.0
405	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Water-cooled AC - >= 760,000 , all other heating type	New Construction	per unit	15	\$100.0	159	0.062	0.0
406	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Evaporatively-cooled AC - < 65,000 Btu/h	New Construction	per unit	15	\$100.0	164	0.064	0.0
407	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	149	0.058	0.0
408	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	170	0.066	0.0
409	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	159	0.062	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
410	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	180	0.070	0.0
411	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	170	0.066	0.0
412	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	per unit	15	\$100.0	139	0.055	0.0
413	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	191	0.075	0.0
414	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Evaporatively-cooled AC - >= 760,000 , all other heating type	New Construction	per unit	15	\$100.0	212	0.083	0.0
415	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled condensing units - >135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled condensing units	New Construction	per unit	15	\$100.0	334	0.131	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
416	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Water-cooled condensing units	New Construction	per unit	15	\$100.0	24	0.009	0.0
417	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Evaporatively cooled condensing units	New Construction	per unit	15	\$100.0	24	0.009	0.0
418	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type - 2018	Time of Sale	per unit	15	\$100.0	139	0.053	0.0
419	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) -2018	Time of Sale	per unit	15	\$100.0	135	0.043	0.0
420	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - 2018	Time of Sale	per unit	15	\$100.0	184	0.057	0.0
421	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - 2018	Time of Sale	per unit	15	\$100.0	178	0.045	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
422	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - 2018	Time of Sale	per unit	15	\$100.0	129	0.043	0.0
423	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) -2018	Time of Sale	per unit	15	\$100.0	125	0.034	0.0
424	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	125	0.034	0.0
425	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	129	0.043	0.0
426	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	135	0.043	0.0
427	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	139	0.053	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
428	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	178	0.045	0.0
429	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	per unit	15	\$100.0	184	0.057	0.0
432	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	1328	0.000	0.0
433	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	151	0.000	0.0
434	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	2836	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
435	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	227	0.000	0.0
438	Restaurant/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	251	0.000	0.0
439	Restaurant/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	70	0.000	0.0
440	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	727	0.000	0.0
441	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	76	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
442	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	280	0.000	0.0
443	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	per unit	4	\$181.0	51	0.000	0.0
448	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	1328	0.000	0.0
449	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	151	0.000	0.0
450	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	2836	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
451	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	227	0.000	0.0
452	Miscellaneous/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	647	0.000	0.0
453	Miscellaneous/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	45	0.000	0.0
454	Restaurant/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	251	0.000	0.0
455	Restaurant/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	70	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
456	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	727	0.000	0.0
457	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	76	0.000	0.0
458	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	280	0.000	0.0
459	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	per unit	4	\$181.0	51	0.000	0.0
462	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	456	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
463	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	431	0.000	0.0
464	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	450	0.000	0.0
465	Miscellaneous/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	509	0.000	0.0
466	Restaurant/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	515	0.000	0.0
467	Retail/Service/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	625	0.000	0.0
469	Grocery/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	603	0.000	0.0
470	School (K-12)/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	327	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
472	College/University/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	410	0.000	0.0
473	Medical/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	358	0.000	0.0
474	Hotel/Motel/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	578	0.000	0.0
475	Miscellaneous/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	per unit	10	\$1,500.0	482	0.000	0.0
480	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	1328	0.000	0.0
482	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	2836	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
484	Miscellaneous/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	647	0.000	0.0
486	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	251	0.000	0.0
487	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	70	0.000	0.0
488	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	727	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
489	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	76	0.000	0.0
490	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	280	0.000	0.0
491	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	per unit	2	\$70.3	51	0.000	0.0
496	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	1328	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
498	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	2836	0.000	0.0
500	Miscellaneous/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	647	0.000	0.0
502	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	251	0.000	0.0
503	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	70	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
504	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	727	0.000	0.0
505	Restaurant/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	76	0.000	0.0
506	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	280	0.000	0.0
507	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	per unit	2	\$70.3	51	0.000	0.0
510	All/All	HVAC	Small Business Furnace Tune-Up	Approved technician must complete the tune-up requirements	Furnace assumed not to have had a tune-up in the past 2 years	Retrofit	per unit	2	\$35.0	77	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
511	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,330.0	4527	0.000	0.0
512	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,330.0	4388	0.778	0.0
513	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,330.0	2424	0.338	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
514	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,330.0	1911	0.354	0.0
515	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,330.0	982	0.075	0.0
516	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,622.0	6809	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
517	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,622.0	6600	1.170	0.0
518	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,622.0	3645	0.509	0.0
519	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,622.0	2875	0.532	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
520	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,622.0	1477	0.114	0.0
521	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	10 hp VSD - 10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	per motor	10	\$1,898.0	9072	0.000	0.0
522	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,330.0	4527	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
523	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,330.0	4388	0.778	0.0
524	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,330.0	2424	0.338	0.0
525	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,330.0	1911	0.354	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
526	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,330.0	982	0.075	0.0
527	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,622.0	6809	0.000	0.0
528	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,622.0	6600	1.170	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
529	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,622.0	3645	0.509	0.0
530	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,622.0	2875	0.532	0.0
531	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,622.0	1477	0.114	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
532	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	10 hp VSD - 10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	per motor	10	\$1,898.0	9072	0.000	0.0
533	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- 2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type - 2023	Time of Sale	per unit	15	\$100.0	174	0.053	0.0
534	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- 2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) - 2023	Time of Sale	per unit	15	\$100.0	170	0.043	0.0
535	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- 2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - 2023	Time of Sale	per unit	15	\$100.0	200	0.057	0.0
536	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- 2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - 2023	Time of Sale	per unit	15	\$100.0	194	0.045	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
537	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - 2023	Time of Sale	per unit	15	\$100.0	180	0.043	0.0
538	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) - 2023	Time of Sale	per unit	15	\$100.0	176	0.034	0.0
539	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	176	0.034	0.0
540	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	180	0.043	0.0
541	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	170	0.043	0.0
542	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	174	0.053	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
543	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	194	0.045	0.0
544	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	per unit	15	\$100.0	200	0.057	0.0
545	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	239	0.093	0.0
546	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	246	0.096	0.0
547	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	198	0.078	0.0
548	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	per unit	15	\$100.0	205	0.080	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
549	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	per unit	15	\$100.0	274	0.107	0.0
550	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	per unit	15	\$100.0	284	0.111	0.0
551	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type - Current	Time of Sale	per unit	15	\$100.0	205	0.080	0.0
552	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) - Current	Time of Sale	per unit	15	\$100.0	198	0.078	0.0
553	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - Current	Time of Sale	per unit	15	\$100.0	284	0.111	0.0
554	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - Current	Time of Sale	per unit	15	\$100.0	274	0.107	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
555	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - Current	Time of Sale	per unit	15	\$100.0	246	0.096	0.0
556	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) - Current	Time of Sale	per unit	15	\$100.0	239	0.093	0.0
557	All/All	Lighting	Occupancy Sensor Lighting Controls	Wall-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	per sensor	8	\$42.0	814	0.261	0.0
558	All/All	Lighting	Occupancy Sensor Lighting Controls	Remote-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	per sensor	8	\$66.0	1366	0.437	0.0
559	All/All	Lighting	Occupancy Sensor Lighting Controls	Fixture-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	per sensor	8	\$125.0	124	0.054	0.0
560	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8/T5 Fixtures and Lamps	RWT8 - F32/25W T8/T5 Extra Lamp Life	F32 T8 standard lamp	Time of Sale	per fixture	3	\$2.0	17	0.003	0.0
561	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8/T5 Fixtures and Lamps	RWT8 - F32/25W T8/T5 Extra Lamp Life	F32 T8 standard lamp	Retrofit	per fixture	3	\$4.5	17	0.003	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
562	All/Medium Load (Over 100 kW <= 400 kW)	Lighting	Commercial Custom Measure	Custom Lighting Upgrades	Custom Lighting Baseline	Retrofit	per project	15	\$15,062.0	38325	4.400	0.0
563	All/Total >100 kW	Miscellaneous	Commercial Custom Measure	Custom Non-Lighting Upgrades	Custom Non-Lighting Baseline	Retrofit	per project	15	\$44,572.0	159187	6.900	0.0
564	All/Small Load (<=100 kW)	Lighting	Small Business Program Lighting Upgrades	Alternative SB Lighting Approach Saving 22773 kWh gross	Regular Lighting Approach	Retrofit	per project	11	\$3,257.6	22773	3.867	0.0
565	All/Small Load (<=100 kW)	Refrigeration	Small Business Program Refrigeration Upgrades	Alternative SB Refrigeration Approach Saving 2530 kWh gross	Regular Refrigeration Approach	Retrofit	per project	15	\$307.8	2530	0.203	0.0
566	All/Small Load (<=100 kW)	Miscellaneous	Sm New Const <=100K sq ft	More Efficient than IECC2015 construction	IECC2015 Code construction - Sm New Const	New Construction	per sq ft	15	\$0.4	4	0.001	0.0
567	All/Total >100 kW	Miscellaneous	Lrg New Const >100K sq ft	More Efficient than IECC2015 construction	IECC2015 Code construction - Lrg New Const	New Construction	per sq ft	15	\$0.4	2	0.001	0.0
4223	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2 airflow	Retrofit	per building	12	\$41,851.9	496692	57.000	0.0
4224	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2 airflow	Retrofit	per building	12	\$83,703.7	1379700	158.000	0.0
4225	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 airflow	Retrofit	per building	12	\$209,259.3	2385436	272.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
4226	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 airflow	Retrofit	per building	12	\$418,518.5	4763250	544.000	0.0
4227	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2	Retrofit	per building	12	\$24,814.8	115895	13.000	0.0
4228	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2	Retrofit	per building	12	\$49,629.6	197100	23.000	0.0
4229	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2	Retrofit	per building	12	\$124,074.1	493538	56.000	0.0
4230	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2	Retrofit	per building	12	\$248,148.1	985500	113.000	0.0
4231	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 No economizer	Retrofit	per building	12	\$370,370.4	1316102	150.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
4232	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 No economizer	Retrofit	per building	12	\$740,740.7	2628000	300.000	0.0
4233	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2 airflow	New Construction	per building	12	\$13,452.4	1545264	176.000	0.0
4234	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2 airflow	New Construction	per building	12	\$25,111.1	4599000	525.000	0.0
4235	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 airflow	New Construction	per building	12	\$62,777.8	7951452	908.000	0.0
4236	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 airflow	New Construction	per building	12	\$125,555.6	15877500	1813.000	0.0
4237	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2	New Construction	per building	12	\$12,963.0	331128	38.000	0.0
4238	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2	New Construction	per building	12	\$22,222.2	657000	75.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
4239	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2	New Construction	per building	12	\$55,555.6	1645128	188.000	0.0
4240	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2	New Construction	per building	12	\$111,111.1	3285000	375.000	0.0
4241	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 No economizer	New Construction	per building	12	\$111,111.1	4387008	501.000	0.0
4242	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 No economizer	New Construction	per building	12	\$222,222.2	8760000	1000.000	0.0
4246	All/Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Other	RetroCommissioning	Data Center RCx	Data Center RCx - Baseline	Retrofit	per sqft	5	\$0.3	5	0.000	0.0
4247	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Education RCx	Education RCx - Baseline	Retrofit	per sqft	5	\$0.1	1	0.000	0.0
4248	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Hospital RCx	Hospital RCx - Baseline	Retrofit	per sqft	5	\$0.1	1	0.000	0.0
4249	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Lodging RCx	Lodging RCx - Baseline	Retrofit	per sqft	5	\$0.1	1	0.000	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure Unit Name	Measure Life (Years)	Total Incremental Cost (\$)	Annual Energy Savings (kWh)	Annual PJM Capacity Savings (kW)	Annual Gas Savings (therms)
4250	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Office RCx	Office RCx - Baseline	Retrofit	per sqft	5	\$0.1	1	0.000	0.0
4251	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Other RCx	Other RCx - Baseline	Retrofit	per sqft	5	\$0.0	0	0.000	0.0
4252	All/Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Other	RetroCommissioning	Small Building - Data Center RCx	Small Building - Data Center RCx - Baseline	Retrofit	per sqft	5	\$0.1	3	0.000	0.0
4253	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Education RCx	Small Building - Education RCx - Baseline	Retrofit	per sqft	5	\$0.1	1	0.000	0.0
4254	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Hospital RCx	Small Building - Hospital RCx - Baseline	Retrofit	per sqft	5	\$0.0	1	0.000	0.0
4255	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Lodging RCx	Small Building - Lodging RCx - Baseline	Retrofit	per sqft	5	\$0.0	0	0.000	0.0
4256	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Office RCx	Small Building - Office RCx - Baseline	Retrofit	per sqft	5	\$0.0	1	0.000	0.0
4257	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Other RCx	Small Building - Other RCx - Baseline	Retrofit	per sqft	5	\$0.0	0	0.000	0.0
4258	All/Large Load (Over 400 kW <= 1,000 kW)	Other	DCEO Commercial	0	0	Retrofit	Program	10	\$28,252,781	\$131,942,344	19344.251	0.0
629	Multifamily/Gas Heating	Lighting	MF DI Lighting	0	0	Direct Install	per lamp	4	\$31	\$62	0.003	0.0
630	Multifamily/Electric Heating	Lighting	MF DI Lighting	0	0	Direct Install	per lamp	4	\$31	\$54	0.003	0.0

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
1	All/All	Refrigeration	Automatic Door Closer for Walk-in Coolers and Freezers	Walk-in cooler w/ automatic, hydraulic enclosure	Walk-in cooler w/o automatic enclosure	Retrofit	2.98	Yes	Yes	100%	12%	94%	IL TRM
2	All/All	Refrigeration	Automatic Door Closer for Walk-in Coolers and Freezers	Walk-in freezer w/ automatic, hydraulic enclosure	Walk-in freezer w/o automatic enclosure	Retrofit	7.30	Yes	Yes	100%	7%	94%	IL TRM
3	All/All	Refrigeration	Beverage and Snack Machine Controls	Standard efficiency refrigerated vending machine w/ control system	Standard efficiency refrigerated vending machine w/o control system	Retrofit	2.81	Yes	Yes	100%	4%	64%	IL TRM
4	All/All	Refrigeration	Beverage and Snack Machine Controls	Standard efficiency non-refrigerated snack vending machine w/ control system	Standard efficiency non-refrigerated snack vending machine w/o control system	Retrofit	1.34	Yes	Yes	100%	96%	64%	IL TRM
5	All/All	Refrigeration	Beverage and Snack Machine Controls	Glass front refrigerated cooler w/ control system	Glass front refrigerated cooler w/o control system	Retrofit	2.11	Yes	Yes	100%	100%	64%	IL TRM
6	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial glass door cooler w/ standard heated door w/ humidity controls	Commercial glass door cooler w/ standard heated door w/o controls - low temp (-35-0)	Retrofit	6.07	Yes	Yes	100%	100%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
7	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ humidity controls	Commercial refrigerator w/ standard heated door w/o controls - medium temp (0-20)	Retrofit	2.57	Yes	Yes	100%	100%	33%	IL TRM
8	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ humidity controls	Commercial refrigerator w/ standard heated door w/o controls - high temp (20-45)	Retrofit	2.42	Yes	Yes	100%	100%	33%	IL TRM
9	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial glass door cooler w/ standard heated door w/ conductivity controls	Commercial glass door cooler w/ standard heated door w/o controls - low temp (-35-0)	Retrofit	11.59	Yes	Yes	100%	100%	33%	IL TRM
10	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ conductivity controls	Commercial refrigerator w/ standard heated door w/o controls - medium temp (0-20)	Retrofit	4.90	Yes	Yes	100%	100%	33%	IL TRM
11	All/All	Refrigeration	Door Heater Controls for Cooler or Freezer	Commercial refrigerator w/ standard heated door w/ conductivity controls	Commercial refrigerator w/ standard heated door w/o controls - high temp (20-45)	Retrofit	4.62	Yes	Yes	100%	100%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
12	Restaurant/All	Refrigeration	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Baseline - Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Retrofit	7.03	Yes	Yes	100%	73%	100%	IL TRM
13	Grocery/All	Refrigeration	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Baseline - Electronically Commutated Motors (ECM) for Walk-in and Reach-in Coolers/Freezers	Retrofit	6.71	Yes	Yes	100%	64%	100%	IL TRM
14	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/o software	Existing standard vending machine - average # of cans	Time of Sale	2.12	Yes	Yes	100%	4%	64%	IL TRM
15	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w software	Existing standard vending machine - average # of cans	Time of Sale	2.98	Yes	Yes	100%	4%	64%	IL TRM
16	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/o software	New standard vending machine - average # of cans	New Construction	2.12	Yes	No	92%	4%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
17	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New or rebuilt to ENERGY STAR specifications - w/ software	New standard vending machine - average # of cans	New Construction	2.98	Yes	No	92%	4%	64%	IL TRM
18	All/All	Refrigeration	Evaporator Fan Control	Evaporator fan controller that reduces fan power	Cooler w/ continuously running evaporator fan	Retrofit	1.49	Yes	Yes	100%	100%	99%	IL TRM
19	All/All	Refrigeration	Strip Curtain for Walk-in Coolers and Freezers	Polyethylene strip curtain added to a walk-in freezer	Walk-in freezer w/ no strip curtain or old, ineffective strip curtain	Retrofit	3.91	Yes	Yes	100%	7%	62%	IL TRM
20	All/All	Refrigeration	Strip Curtain for Walk-in Coolers and Freezers	Polyethylene strip curtain added to a walk-in cooler	Walk-in cooler w/ no strip curtain or old, ineffective strip curtain	Retrofit	0.55	No	Yes	100%	12%	62%	IL TRM
21	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, hermetic/se mi-hermetic condenser	Retrofit	2.15	Yes	Yes	92%	13%	100%	IL TRM
22	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, scroll condenser	Retrofit	1.90	Yes	Yes	92%	13%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
23	All/Small Load (<=100 kW)	Refrigeration	Refrigeration Economizers	Economizer installed on a walk in refrigeration system	Walk-in refrigeration system without an economizer, discus condenser	Retrofit	1.81	Yes	Yes	92%	13%	100%	IL TRM
24	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Remote Condensing, Medium Temperature (35F - 55F)	Retrofit	0.98	No	Yes	100%	45%	100%	IL TRM
25	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Remote Condensing, Low Temperature (0F - 30F)	Retrofit	2.21	Yes	Yes	100%	45%	100%	IL TRM
26	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Vertical Open, Self-Contained Medium Temperature (35F - 55F)	Retrofit	1.88	Yes	Yes	100%	45%	100%	IL TRM
27	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Remote Condensing, Medium Temperature (35F - 55F)	Retrofit	0.30	No	Yes	100%	45%	100%	IL TRM
28	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Remote Condensing, Low Temperature (0F - 30F)	Retrofit	0.68	No	Yes	100%	45%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
29	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Self-Contained, Medium Temperature (35F - 55F)	Retrofit	0.90	No	Yes	100%	45%	100%	IL TRM
30	Grocery/All	Refrigeration	Night Covers for Open Refrigerated Display Cases	Curtains or covers on top of open refrigerated or freezer display cases	Horizontal Open, Self-Contained, Low Temperature (0F - 30F)	Retrofit	1.84	Yes	Yes	100%	45%	100%	IL TRM
31	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	Rebuilt unit built to ENERGY STAR specifications - w/o software	Existing Standard vending machine unit - < 500 cans	Time of Sale	2.12	Yes	Yes	100%	4%	64%	IL TRM
32	All/All	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	Rebuilt unit built to ENERGY STAR specifications - w/ software	Existing Standard vending machine unit - 800+ cans	Time of Sale	2.98	Yes	Yes	100%	4%	64%	IL TRM
33	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New ENERGY STAR Unit - w/o software	New Standard vending machine unit	New Construction	2.12	Yes	No	92%	4%	64%	IL TRM
34	All/Small Load (<=100 kW)	Refrigeration	ENERGY STAR Refrigerated Beverage Vending Machine	New ENERGY STAR Unit - w/ software	New Standard vending machine unit	New Construction	2.98	Yes	No	92%	4%	64%	IL TRM
35	Warehouse /Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - single shift	Modulating compressor with blow down <= 40 hp - single shift	Time of Sale	0.55	No	Yes	10%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
36	Warehouse /Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 2 shift	Modulating compressor with blow down <= 40 hp - 2 shift	Time of Sale	1.09	Yes	Yes	10%	100%	100%	IL TRM
37	Warehouse /Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 3 shift	Modulating compressor with blow down <= 40 hp - 3 shift	Time of Sale	1.64	Yes	Yes	10%	100%	100%	IL TRM
38	Warehouse /Total >100 kW	Miscellaneous	VSD Air Compressor	Compressor <= 40 hp w/ variable speed control - 4 shift	Modulating compressor with blow down <= 40 hp - 4 shift	Time of Sale	2.30	Yes	Yes	10%	100%	100%	IL TRM
39	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - single shift	Compressor w/ any control	Time of Sale	0.03	No	No	92%	100%	100%	IL TRM
40	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 2 shift	Compressor w/ any control	Time of Sale	0.05	No	No	92%	100%	100%	IL TRM
41	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 3 shift	Compressor w/ any control	Time of Sale	0.08	No	No	92%	100%	100%	IL TRM
42	All/Small Load (<=100 kW)	Miscellaneous	Compressed Air Low Pressure Drop Filters	Compressor w/ any control - 4 shift	Compressor w/ any control	Time of Sale	0.11	No	No	92%	100%	100%	IL TRM
43	All/Total >100 kW	Miscellaneous	Compressed Air No-Loss Condensate Drains	Installation of no-loss condensate drains	Standard condensate drains (open valve, timer, or both)	Retrofit	1.95	Yes	Yes	8%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
44	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, gas heating	Roof insulation equal to code requirements	Retrofit	0.12	No	No	92%	100%	100%	IL TRM
45	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, electric resistance heating	Roof insulation equal to code requirements	Retrofit	0.56	No	No	92%	100%	100%	IL TRM
46	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, heat pump heating	Roof insulation equal to code requirements	Retrofit	0.34	No	No	92%	100%	100%	IL TRM
47	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, gas heating	Roof insulation equal to code requirements	New Construction	0.05	No	No	92%	100%	100%	IL TRM
48	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, electric resistance heating	Roof insulation equal to code requirements	New Construction	0.23	No	No	92%	100%	100%	IL TRM
49	All/Small Load (<=100 kW)	Miscellaneous	Roof Insulation	Roof insulation above code requirements, heat pump heating	Roof insulation equal to code requirements	New Construction	0.12	No	No	92%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
50	All/All	Miscellaneous	Computer Power Management Software	Computer network with power management software	Computer network without software enforcing the power management capabilities in existing computers and monitors	Retrofit	1.76	Yes	Yes	100%	100%	100%	IL TRM
51	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	4-Lamp 32W HPT8 with High-BF Ballast	200W Pulse Start Metal-Halide	Retrofit	0.83	No	No	8%	58%	100%	IL TRM
52	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	6-Lamp 32W HPT8 with High-BF Ballast	320W Pulse Start Metal-Halide	Retrofit	1.11	Yes	No	8%	58%	100%	IL TRM
53	All/All	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	8-Lamp 32W HPT8 with High-BF Ballast	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Retrofit	1.52	Yes	Yes	100%	58%	100%	IL TRM
54	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	2-lamp High-Performance HPT8 Troffer	3-Lamp F32T8 w/ Elec. Ballast	Retrofit	0.76	No	No	8%	58%	100%	IL TRM
55	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	1-Lamp 32W HPT8 with Low-BF Ballast	1-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	0.27	No	No	8%	58%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
56	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	2-Lamp 32W HPT8 with Low-BF Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	0.35	No	No	8%	58%	100%	IL TRM
57	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	3-Lamp 32W HPT8 with Low-BF Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	0.52	No	No	8%	58%	100%	IL TRM
58	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8 Fixtures and Lamps	4-Lamp 32W HPT8 with Low-BF Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	0.60	No	No	8%	58%	100%	IL TRM
59	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Indirect	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	2.29	Yes	Yes	100%	10%	59%	IL TRM
60	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Indirect	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	0.39	No	Yes	100%	10%	59%	IL TRM
61	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	2.26	Yes	Yes	100%	10%	59%	IL TRM
64	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	1-Lamp F40T12 w/ EEMag Ballast	Retrofit	1.22	Yes	Yes	100%	10%	59%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
65	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	0.98	No	Yes	100%	10%	59%	IL TRM
66	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Troffer/Wrapper	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	1.70	Yes	Yes	100%	10%	59%	IL TRM
67	All/All	Lighting	T5 Fixtures and Lamps	1-Lamp T5 Troffer/Wrapper	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	0.69	No	Yes	100%	10%	59%	IL TRM
68	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Time of Sale	2.98	Yes	Yes	100%	10%	59%	IL TRM
69	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Indirect	3-Lamp F32T8 Equivalent w/ Elec. Ballast	Time of Sale	4.60	Yes	Yes	100%	10%	59%	IL TRM
70	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Indirect	3-Lamp F32T8 Equivalent w/ Elec. Ballast	Retrofit	0.79	No	Yes	100%	10%	59%	IL TRM
71	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	4.57	Yes	Yes	100%	10%	59%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
72	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	2-Lamp F40T12 w/ EEMag Ballast	Retrofit	2.28	Yes	Yes	100%	10%	59%	IL TRM
75	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Industrial/Strip	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	1.97	Yes	Yes	100%	10%	59%	IL TRM
76	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Troffer/Wrap	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	3.43	Yes	Yes	100%	10%	59%	IL TRM
77	All/All	Lighting	T5 Fixtures and Lamps	2-Lamp T5 Troffer/Wrap	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	1.38	Yes	Yes	100%	10%	59%	IL TRM
78	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Time of Sale	2.98	Yes	Yes	100%	10%	59%	IL TRM
79	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 High-Bay	200 Watt Pulse Start Metal-Halide	Retrofit	1.49	Yes	Yes	100%	10%	59%	IL TRM
80	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	6.88	Yes	Yes	100%	10%	59%	IL TRM
83	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	3-Lamp F40T12 w/ EEMag Ballast	Retrofit	1.86	Yes	Yes	100%	10%	59%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
84	All/All	Lighting	T5 Fixtures and Lamps	3-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	2.96	Yes	Yes	100%	10%	59%	IL TRM
85	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 High-Bay	320 Watt Pulse-Start Metal Halide	Time of Sale	6.32	Yes	Yes	100%	10%	59%	IL TRM
86	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 High-Bay	320 Watt Pulse-Start Metal Halide	Retrofit	2.81	Yes	Yes	100%	10%	59%	IL TRM
87	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Time of Sale	9.57	Yes	Yes	100%	10%	59%	IL TRM
88	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	4-Lamp F40T12 w/ EEMag Ballast	Retrofit	4.05	Yes	Yes	100%	10%	59%	IL TRM
91	All/All	Lighting	T5 Fixtures and Lamps	4-Lamp T5 Industrial/Strip	Proportionally Adjusted according to 2-Lamp T5 Equivalent to 3-Lamp T8	Retrofit	4.11	Yes	Yes	100%	10%	59%	IL TRM
92	All/All	Lighting	T5 Fixtures and Lamps	6-Lamp T5 High-Bay	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Time of Sale	6.67	Yes	Yes	100%	10%	59%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
93	All/All	Lighting	T5 Fixtures and Lamps	6-Lamp T5 High-Bay	Proportionally Adjusted according to 6-Lamp HPT8 Equivalent to 320 PSMH	Retrofit	2.67	Yes	Yes	100%	10%	59%	IL TRM
94	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Round Signal	Incandescent	Retrofit	0.77	No	Yes	100%	55%	100%	IL TRM
95	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Round Signal	Incandescent	Retrofit	1.36	Yes	Yes	100%	55%	100%	IL TRM
96	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Flashing Signal	Incandescent	Retrofit	0.70	No	Yes	100%	55%	100%	IL TRM
97	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Flashing Signal	Incandescent	Retrofit	1.24	Yes	Yes	100%	55%	100%	IL TRM
98	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Round Signal	Incandescent	Retrofit	0.67	No	Yes	100%	55%	100%	IL TRM
99	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Round Signal	Incandescent	Retrofit	1.18	Yes	Yes	100%	55%	100%	IL TRM
100	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Flashing Signal	Incandescent	Retrofit	0.03	No	Yes	100%	55%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
101	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Flashing Signal	Incandescent	Retrofit	0.05	No	Yes	100%	55%	100%	IL TRM
102	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Round Signal	Incandescent	Retrofit	0.58	No	Yes	100%	55%	100%	IL TRM
103	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Round Signal	Incandescent	Retrofit	1.02	Yes	Yes	100%	55%	100%	IL TRM
104	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Turn Arrow	Incandescent	Retrofit	0.20	No	Yes	100%	55%	100%	IL TRM
105	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Turn Arrow	Incandescent	Retrofit	0.15	No	Yes	100%	55%	100%	IL TRM
106	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Turn Arrow	Incandescent	Retrofit	0.20	No	Yes	100%	55%	100%	IL TRM
107	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Turn Arrow	Incandescent	Retrofit	0.15	No	Yes	100%	55%	100%	IL TRM
108	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Hand/Man Pedestrian Signal	Incandescent	Retrofit	3.19	Yes	Yes	100%	55%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
109	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Round Signal	Incandescent	Time of Sale	1.72	Yes	Yes	100%	55%	100%	IL TRM
110	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Round Signal	Incandescent	Time of Sale	2.34	Yes	Yes	100%	55%	100%	IL TRM
111	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Red Flashing Signal	Incandescent	Time of Sale	1.56	Yes	Yes	100%	55%	100%	IL TRM
112	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Red Flashing Signal	Incandescent	Time of Sale	2.13	Yes	Yes	100%	55%	100%	IL TRM
113	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Round Signal	Incandescent	Time of Sale	1.49	Yes	Yes	100%	55%	100%	IL TRM
114	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Round Signal	Incandescent	Time of Sale	2.03	Yes	Yes	100%	55%	100%	IL TRM
115	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Flashing Signal	Incandescent	Time of Sale	0.06	No	Yes	100%	55%	100%	IL TRM
116	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Flashing Signal	Incandescent	Time of Sale	0.08	No	Yes	100%	55%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
117	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Round Signal	Incandescent	Time of Sale	1.30	Yes	Yes	100%	55%	100%	IL TRM
118	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Round Signal	Incandescent	Time of Sale	1.76	Yes	Yes	100%	55%	100%	IL TRM
119	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Yellow Turn Arrow	Incandescent	Time of Sale	0.44	No	Yes	100%	55%	100%	IL TRM
120	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Yellow Turn Arrow	Incandescent	Time of Sale	0.25	No	Yes	100%	55%	100%	IL TRM
121	All/All	Lighting	LED Traffic and Pedestrian Signals	8" Green Turn Arrow	Incandescent	Time of Sale	0.44	No	Yes	100%	55%	100%	IL TRM
122	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Green Turn Arrow	Incandescent	Time of Sale	0.26	No	Yes	100%	55%	100%	IL TRM
123	All/All	Lighting	LED Traffic and Pedestrian Signals	12" Hand/Man Pedestrian Signal	Incandescent	Time of Sale	11.52	Yes	Yes	100%	55%	100%	IL TRM
124	All/All	Lighting	Delamping	1-Lamp Standard 32W T8 w/ Elec Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	1.67	Yes	Yes	100%	100%	59%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
125	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	1.63	Yes	Yes	100%	100%	59%	IL TRM
126	All/All	Lighting	Delamping	3-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	1.34	Yes	Yes	100%	100%	59%	IL TRM
127	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Retrofit	3.08	Yes	Yes	100%	100%	59%	IL TRM
128	All/All	Lighting	Delamping	1-Lamp Standard 32W T8 w/ Elec Ballast	2-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	18.84	Yes	Yes	100%	100%	59%	IL TRM
129	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	3-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	15.93	Yes	Yes	100%	100%	59%	IL TRM
130	All/All	Lighting	Delamping	3-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	11.77	Yes	Yes	100%	100%	59%	IL TRM
131	All/All	Lighting	Delamping	2-Lamp Standard 32W T8 w/ Elec Ballast	4-Lamp Standard 32W T8 w/ Elec Ballast	Time of Sale	30.20	Yes	Yes	100%	100%	59%	IL TRM
132	All/All	Lighting	LED Exit Signs	LED exit sign	non-LED light-source	Retrofit	3.56	Yes	Yes	100%	85%	59%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
133	All/Total >100 kW	Lighting	Commercial Standard CFL	15 W CFL	43W EISA compliant lamp	Time of Sale	21.71	Yes	No	8%	45%	52%	IL TRM
134	All/Total >100 kW	Lighting	Commercial Standard CFL	21 W CFL replacing EISA-exempt incandescent lamp	79W EISA-exempt incandescent lamp	Time of Sale	8.36	Yes	No	8%	45%	52%	IL TRM
135	All/All	Lighting	LED Bulbs and Fixtures	12.5 W Omni-directional Energystar LED	43W EISA compliant lamp	Retrofit	37.61	Yes	Yes	100%	96%	92%	IL TRM
136	All/All	Lighting	LED Bulbs and Fixtures	19 W LED replacing EISA-exempt incandescent lamp	79W EISA-exempt incandescent lamp	Retrofit	11.90	Yes	Yes	100%	96%	92%	IL TRM
137	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	2.86	No	No	100%	94%	100%	IL TRM
138	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	2.64	No	No	100%	94%	100%	IL TRM
139	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	2.11	No	No	100%	94%	100%	IL TRM
140	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	1.77	No	No	100%	94%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
141	All/All	Lighting	LED Bulbs and Fixtures	75 W Outdoor LED lamp	182W Equivalent Fixture per TRM	Time of Sale	3.06	Yes	Yes	100%	55%	92%	IL TRM
142	All/All	Lighting	LED Bulbs and Fixtures	75 W Outdoor LED lamp	182W Equivalent Fixture per TRM	Retrofit	3.06	Yes	Yes	100%	55%	92%	IL TRM
143	All/All	Lighting	LED Bulbs and Fixtures	LED 2x2 Recessed Light Fixture	T8 U-Tube 2L-FB32 w/ Elec - 2'	Time of Sale	4.37	Yes	Yes	100%	6%	98%	IL TRM
144	All/All	Lighting	LED Bulbs and Fixtures	LED 1.5x4 Recessed Light Fixture	T8 2.5L-F32 w/ Elec - 4'	Time of Sale	25.68	Yes	Yes	100%	6%	98%	IL TRM
145	All/All	Lighting	Delamping	4' T8 Lamp Removal with Reflector	4' T8 Lamp	Time of Sale	5.18	Yes	Yes	100%	100%	59%	IL TRM
146	All/All	Lighting	Delamping	8' T8 Lamp Removal with Reflector	8' T8 Lamp	Time of Sale	8.63	Yes	Yes	100%	100%	59%	IL TRM
147	All/All	Lighting	LED Bulbs and Fixtures	LED 2x2 Recessed Light Fixture	T8 U-Tube 2L-FB32 w/ Elec - 2'	Retrofit	1.64	Yes	Yes	100%	6%	98%	IL TRM
148	All/All	Lighting	LED Bulbs and Fixtures	LED 1.5x4 Recessed Light Fixture	T8 2.5L-F32 w/ Elec - 4'	Retrofit	2.72	Yes	Yes	100%	6%	98%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
149	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	1.54	No	No	100%	94%	100%	IL TRM
150	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Early Replacement	AFUE 90% Furnace	Early Replacement	1.37	No	No	100%	94%	100%	IL TRM
151	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.40	No	No	100%	94%	100%	IL TRM
152	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.42	No	No	100%	94%	100%	IL TRM
153	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.37	No	No	100%	94%	100%	IL TRM
154	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.34	No	No	100%	94%	100%	IL TRM
155	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.32	No	No	100%	94%	100%	IL TRM
156	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace - Remaining Measure Life	AFUE 90% Furnace	Early Replacement	0.30	No	No	100%	94%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
157	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 10 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Time of Sale	2.58	Yes	Yes	8%	30%	99%	IL TRM
158	All/Small Load (<=100 kW)	Hot Water	Low Flow Faucet Aerators - Electric DHW fuel	Bathroom faucet aerator, < 1.5 GPM	Bathroom faucet aerator, 2.25 GPM	Direct Install	9.30	Yes	Yes	92%	100%	68%	IL TRM
159	All/Small Load (<=100 kW)	Hot Water	Low Flow Faucet Aerators - Electric DHW fuel	Kitchen faucet aerator, < 2.2 GPM	Kitchen faucet aerator, 2.75 GPM	Direct Install	11.34	Yes	Yes	92%	100%	68%	IL TRM
160	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 2.0 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	41.69	Yes	Yes	92%	1%	68%	IL TRM
161	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 1.75 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	57.24	Yes	Yes	92%	1%	68%	IL TRM
162	All/Small Load (<=100 kW)	Hot Water	Low Flow Showerheads - Electric DHW fuel	Energy efficient showerhead rated at 1.50 GPM	Standard showerhead rated at 2.5 GPM	Direct Install	72.80	Yes	Yes	92%	1%	68%	IL TRM
163	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 10 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Retrofit	2.58	Yes	Yes	8%	30%	99%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
165	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 15 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Time of Sale	2.27	Yes	Yes	8%	30%	99%	IL TRM
166	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 15 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Retrofit	2.27	Yes	Yes	8%	30%	99%	IL TRM
168	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 5 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Time of Sale	0.98	No	Yes	8%	30%	99%	IL TRM
169	All/Total >100 kW	Hot Water	Tankless Water Heater	Electric tankless hot water heater, EF >= 0.98, output = 5 GPM	Electric commercial-grade tanked water heater > 50 gal, EF < 0.9	Retrofit	0.98	No	Yes	8%	30%	99%	IL TRM
171	All/Total >100 kW	Hot Water	Storage Water Heater	Electric, Storage Capacity = 50 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 50 gallons, input wattage: 12 kW - 54 kW	Time of Sale	0.86	No	Yes	8%	30%	100%	IL TRM
172	All/Total >100 kW	Hot Water	Ozone Laundry	Ozone Laundry System	Ozone Laundry System	Time of Sale	1.78	Yes	Yes	8%	100%	100%	IL TRM
173	All/Total >100 kW	Hot Water	Ozone Laundry	Ozone Laundry System	Ozone Laundry System	Retrofit	1.78	Yes	Yes	8%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
174	All/Total >100 kW	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Time of Sale	13.42	Yes	Yes	8%	100%	100%	IL TRM
175	All/Total >100 kW	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Retrofit	13.42	Yes	Yes	8%	100%	100%	IL TRM
176	All/Small Load (<=100 kW)	Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	Controls for Central Domestic Hot Water	New Construction	13.42	Yes	No	92%	100%	100%	IL TRM
177	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	5.46	Yes	No	93%	100%	65%	IL TRM
178	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	5.46	Yes	No	93%	100%	65%	IL TRM
179	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	16.62	Yes	Yes	93%	100%	65%	IL TRM
180	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	16.62	Yes	No	93%	100%	65%	IL TRM
181	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	11.89	Yes	Yes	93%	100%	65%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
182	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	11.89	Yes	No	93%	100%	65%	IL TRM
183	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	7.84	Yes	Yes	93%	100%	65%	IL TRM
184	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	7.84	Yes	No	93%	100%	65%	IL TRM
185	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	0.60	No	Yes	93%	100%	65%	IL TRM
186	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	0.60	No	No	93%	100%	65%	IL TRM
187	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	7.42	Yes	No	93%	100%	65%	IL TRM
188	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Freezer	EPAAct 2005-Compliant Freezer	New Construction	7.42	Yes	No	93%	100%	65%	IL TRM
189	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EPAAct 2005-Compliant Freezer	Time of Sale	6.12	Yes	No	93%	100%	65%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
190	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Freezer	EPAct 2005-Compliant Freezer	New Construction	6.12	Yes	No	93%	100%	65%	IL TRM
191	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Freezer	Existing EPAct 2005-Compliant Freezer	Time of Sale	2.30	Yes	No	93%	100%	65%	IL TRM
192	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Freezers - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Freezer	EPAct 2005-Compliant Freezer	New Construction	2.30	Yes	No	93%	100%	65%	IL TRM
193	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	2.92	Yes	No	93%	97%	65%	IL TRM
194	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 15 to 30ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	2.92	Yes	No	93%	97%	65%	IL TRM
195	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	3.17	Yes	No	93%	97%	65%	IL TRM
196	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - 30 to 50 ft3	ENERGY STAR Glass Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	3.17	Yes	No	93%	97%	65%	IL TRM
197	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	2.55	Yes	No	93%	97%	65%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
198	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - greater than 50 ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAAct 2005-Compliant Refrigerator	New Construction	2.55	Yes	No	93%	97%	65%	IL TRM
199	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Refrigerator	Existing EPAAct 2005-Compliant Refrigerator	Time of Sale	3.59	Yes	No	93%	97%	65%	IL TRM
200	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Glass Door - up to 15 ft3 capacity	ENERGY STAR Glass Door Refrigerator	EPAAct 2005-Compliant Refrigerator	New Construction	3.59	Yes	No	93%	97%	65%	IL TRM
201	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPAAct 2005-Compliant Refrigerator	Time of Sale	2.00	Yes	No	93%	97%	65%	IL TRM
202	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 15 to 30ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPAAct 2005-Compliant Refrigerator	New Construction	2.00	Yes	No	93%	97%	65%	IL TRM
203	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Refrigerator	Existing EPAAct 2005-Compliant Refrigerator	Time of Sale	3.44	Yes	No	93%	97%	65%	IL TRM
204	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - 30 to 50 ft3	ENERGY STAR Solid Door Refrigerator	EPAAct 2005-Compliant Refrigerator	New Construction	3.44	Yes	No	93%	97%	65%	IL TRM
205	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPAAct 2005-Compliant Refrigerator	Time of Sale	3.16	Yes	No	93%	97%	65%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
206	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - greater than 50 ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	3.16	Yes	No	93%	97%	65%	IL TRM
207	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Refrigerator	Existing EPAct 2005-Compliant Refrigerator	Time of Sale	1.29	Yes	No	93%	97%	65%	IL TRM
208	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Refrigerators - Solid Door - up to 15 ft3 capacity	ENERGY STAR Solid Door Refrigerator	EPAct 2005-Compliant Refrigerator	New Construction	1.29	Yes	No	93%	97%	65%	IL TRM
209	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 3 pans	non-ENERGY STAR commercial steamer at end of life - 3 pans	Time of Sale	1.40	Yes	No	93%	9%	82%	IL TRM
210	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 4 pans	non-ENERGY STAR commercial steamer at end of life - 4 pans	Time of Sale	1.65	Yes	No	93%	9%	82%	IL TRM
211	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 5 pans	non-ENERGY STAR commercial steamer at end of life - 5 pans	Time of Sale	1.91	Yes	No	93%	9%	82%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
212	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Commercial Steam Cooker	ENERGY STAR qualified electric steam cooker with cooking efficiency >= 50% - 6 pans	non-ENERGY STAR commercial steamer at end of life - 6 pans	Time of Sale	2.16	Yes	No	93%	9%	82%	IL TRM
213	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - under counter	non-ENERGYSTAR dishwasher at end of life - low temp - under counter - electric building and booster water heating	Time of Sale	1.39	Yes	Yes	93%	9%	33%	IL TRM
214	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - door type	non-ENERGYSTAR dishwasher at end of life - low temp - door type - electric building and booster water heating	Time of Sale	19.59	Yes	Yes	93%	9%	33%	IL TRM
215	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - single tank conventional - electric building and booster water heating	Time of Sale	70.83	Yes	No	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
216	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - multi tank conventional - electric building and booster water heating	Time of Sale	86.94	Yes	No	93%	9%	33%	IL TRM
217	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - under counter	non-ENERGYSTAR dishwasher at end of life - high temp - under counter - electric building and booster water heating	Time of Sale	4.54	Yes	No	93%	9%	33%	IL TRM
218	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - door type	non-ENERGYSTAR dishwasher at end of life - high temp - door type - electric building and booster water heating	Time of Sale	24.20	Yes	No	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
219	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - single tank conventional - electric building and booster water heating	Time of Sale	75.36	Yes	No	93%	9%	33%	IL TRM
220	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - multi tank conventional - electric building and booster water heating	Time of Sale	107.04	Yes	No	93%	9%	33%	IL TRM
221	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - under counter	non-ENERGYSTAR dishwasher at end of life - low temp - under counter - electric building and natural gas booster water heating	Time of Sale	10.43	Yes	Yes	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
222	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - door type	non-ENERGYSTAR dishwasher at end of life - low temp - door type - electric building and natural gas booster water heating	Time of Sale	35.25	Yes	Yes	93%	9%	33%	IL TRM
223	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - single tank conventional - electric building and natural gas booster water heating	Time of Sale	152.26	Yes	Yes	93%	9%	33%	IL TRM
224	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - low temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - low temp - multi tank conventional - electric building and natural gas booster water heating	Time of Sale	147.93	Yes	Yes	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
225	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - under counter	non-ENERGYSTAR dishwasher at end of life - high temp - under counter - electric building and natural gas booster water heating	Time of Sale	4.79	Yes	Yes	93%	9%	33%	IL TRM
226	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - door type	non-ENERGYSTAR dishwasher at end of life - high temp - door type - electric building and natural gas booster water heating	Time of Sale	35.40	Yes	Yes	93%	9%	33%	IL TRM
227	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - single tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - single tank conventional - electric building and natural gas booster water heating	Time of Sale	122.93	Yes	Yes	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
228	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Dishwasher	ENERGY STAR certified dishwasher - high temp - multi tank conventional	non-ENERGYSTAR dishwasher at end of life - high temp - multi tank conventional - electric building and natural gas booster water heating	Time of Sale	119.31	Yes	Yes	93%	9%	33%	IL TRM
229	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Electric Convection Oven	ENERGY STAR Electric Convection Oven	ENERGY STAR Electric Convection Oven	Time of Sale	1.74	Yes	Yes	93%	100%	100%	IL TRM
230	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Griddle	ENERGY STAR electric griddle with efficiency > 70%	Non-ENERGYSTAR electric griddle at end of use	Time of Sale	41,400.80	Yes	Yes	93%	9%	33%	IL TRM
231	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - Full Size (20 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	5.53	Yes	Yes	93%	9%	33%	IL TRM
232	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - 3/4 Size (12 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	1.56	Yes	Yes	93%	9%	33%	IL TRM
233	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Hot Food Holding Cabinets	ENERGY STAR HFHC - 1/2 Size (8 ft3)	Non-ENERGYSTAR electric HFHC at end of life	Time of Sale	1.25	Yes	Yes	93%	9%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
234	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head <450 lbs made per day	Ice Making Head <450 lbs made per day meeting min. federal equipment standards	Time of Sale	0.76	No	No	93%	63%	100%	IL TRM
235	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head >=450 lbs made per day	Ice Making Head >=450 lbs made per day meeting min. federal equipment standards	Time of Sale	0.36	No	No	93%	63%	100%	IL TRM
236	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser <1000 lbs made per day	Remote Condensing Unit, w/o remote compressor <1000 lbs made per day meeting min. federal equipment standards	Time of Sale	0.42	No	No	93%	63%	100%	IL TRM
237	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser >=1000 lbs made per day	Remote Condensing Unit, w/o remote compressor >=1000 lbs made per day meeting min. federal equipment standards	Time of Sale	0.48	No	No	93%	63%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
238	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser <934 lbs made per day	Remote Condensing Unit, w/ remote compressor <934 lbs made per day meeting min. federal equipment standards	Time of Sale	0.40	No	No	93%	63%	100%	IL TRM
239	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser >=934 lbs made per day	Remote Condensing Unit, w/ remote compressor >=934 lbs made per day meeting min. federal equipment standards	Time of Sale	0.47	No	No	93%	63%	100%	IL TRM
240	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser <175 lbs made per day	Self Contained Unit <175 lbs made per day meeting min. federal equipment standards	Time of Sale	0.38	No	No	93%	63%	100%	IL TRM
241	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser >=175 lbs made per day	Self Contained Unit >=175 lbs made per day meeting min. federal equipment standards	Time of Sale	0.73	No	No	93%	63%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
242	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head <450 lbs made per day	Ice Making Head <450 lbs made per day meeting min. federal equipment standards	New Construction	0.76	No	No	93%	63%	100%	IL TRM
243	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Ice Making Head >=450 lbs made per day	Ice Making Head >=450 lbs made per day meeting min. federal equipment standards	New Construction	0.36	No	No	93%	63%	100%	IL TRM
244	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser <1000 lbs made per day	Remote Condensing Unit, w/o remote compressor <1000 lbs made per day meeting min. federal equipment standards	New Construction	0.42	No	No	93%	63%	100%	IL TRM
245	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/o remote condenser >=1000 lbs made per day	Remote Condensing Unit, w/o remote compressor >=1000 lbs made per day meeting min. federal equipment standards	New Construction	0.48	No	No	93%	63%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
246	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser <934 lbs made per day	Remote Condensing Unit, w/ remote compressor <934 lbs made per day meeting min. federal equipment standards	New Construction	0.40	No	No	93%	63%	100%	IL TRM
247	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Remote Condensing Unit, w/ remote condenser >=934 lbs made per day	Remote Condensing Unit, w/ remote compressor >=934 lbs made per day meeting min. federal equipment standards	New Construction	0.47	No	No	93%	63%	100%	IL TRM
248	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser <175 lbs made per day	Self Contained Unit <175 lbs made per day meeting min. federal equipment standards	New Construction	0.38	No	No	93%	63%	100%	IL TRM
249	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	ENERGY STAR Ice Maker	ENERGY STAR Self Contained Unit, w/ remote condenser >=175 lbs made per day	Self Contained Unit >=175 lbs made per day meeting min. federal equipment standards	New Construction	0.73	No	No	93%	63%	100%	IL TRM
250	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	3.99	Yes	Yes	93%	9%	68%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
251	Restaurant/ Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	11.97	Yes	Yes	7%	9%	68%	IL TRM
252	Restaurant/ Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.6 gpm	Existing pre-rinse spray valve w/ flow rate of 1.6 gpm	Time of Sale	23.94	Yes	Yes	0%	9%	68%	IL TRM
253	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	6.21	Yes	Yes	93%	9%	68%	IL TRM
254	Restaurant/ Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	18.62	Yes	Yes	7%	9%	68%	IL TRM
255	Restaurant/ Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Retrofit	37.24	Yes	Yes	0%	9%	68%	IL TRM
256	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	6.21	Yes	Yes	93%	9%	68%	IL TRM
257	Restaurant/ Medium Load (Over 100 kW <= 400 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	18.62	Yes	Yes	7%	12%	68%	IL TRM
258	Restaurant/ Large Load (Over 400 kW <= 1,000 kW)	Food Service Equipment	High Efficiency Pre-Rinse Spray Valve	New pre-rinse spray valve w/ flow rate of < 1.9 gpm	Existing pre-rinse spray valve w/ flow rate of 1.9 gpm	Direct Install	37.24	Yes	Yes	0%	12%	68%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
259	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Kitchen Demand Ventilation Controls	Control system with sensors to vary exhaust rate	Kitchen ventilation with constant speed ventilation motor	Time of Sale	22.00	Yes	Yes	93%	9%	100%	IL TRM
260	Restaurant/ Small Load (<=100 kW)	Food Service Equipment	Kitchen Demand Ventilation Controls	Control system with sensors to vary exhaust rate	Kitchen ventilation with constant speed ventilation motor	New Construction	43.73	Yes	No	93%	9%	100%	IL TRM
261	Warehouse /Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Miscellaneous	Engine Block Timer for Agricultural Equipment	Engine block heater operated by plug-in timer	Engine block heater manually plugged in	Retrofit	6.34	Yes	Yes	0%	100%	100%	IL TRM
262	Warehouse /Medium Load (Over 100 kW <= 400 kW)	Miscellaneous	High Volume Low Speed Fans	20' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	1.10	Yes	Yes	8%	100%	100%	IL TRM
263	Warehouse /Large Load (Over 400 kW <= 1,000 kW)	Miscellaneous	High Volume Low Speed Fans	22' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	1.41	Yes	No	2%	100%	100%	IL TRM
264	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Volume Low Speed Fans	24' Fan classified as HVLS and has a VFD	Multiple non-HVLS fans	Time of Sale	1.64	Yes	Yes	90%	100%	100%	IL TRM
265	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 14.0cfm/W at 0.10 static pressure exhaust fan	24-35" exhaust fan	Time of Sale	1.23	Yes	Yes	90%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
266	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 17.1 cfm/W at 0.10 static pressure exhaust fan	36-47" exhaust fan	Time of Sale	2.07	Yes	Yes	90%	100%	100%	IL TRM
267	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 20.3 cfm/W at 0.10 static pressure exhaust fan	48-71" exhaust fan	Time of Sale	3.71	Yes	Yes	90%	100%	100%	IL TRM
268	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 14.0cfm/W at 0.10 static pressure ventilation fan	24-35" ventilation fan	Time of Sale	1.23	Yes	Yes	90%	100%	100%	IL TRM
269	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 17.1 cfm/W at 0.10 static pressure ventilation fan	36-47" ventilation fan	Time of Sale	2.07	Yes	Yes	90%	100%	100%	IL TRM
270	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 20.3 cfm/W at 0.10 static pressure ventilation fan	48-71" ventilation fan	Time of Sale	3.71	Yes	Yes	90%	100%	100%	IL TRM
271	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	24-35" 12.5 lbf/kW circulation fan	24-35" circulation fan	Time of Sale	1.23	Yes	Yes	90%	100%	100%	IL TRM
272	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	36-47" 18.2 lbf/kW circulation fan	36-47" circulation fan	Time of Sale	2.07	Yes	Yes	90%	100%	100%	IL TRM
273	Warehouse /Small Load (<=100 kW)	Miscellaneous	High Speed Fans	48-71" 23.0 lbf/kW circulation fan	48-71" circulation fan	Time of Sale	3.71	Yes	Yes	90%	100%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
274	Warehouse /Small Load (<=100 kW)	Miscellaneous	Live Stock Waterer	Electrically heated thermally insulated waterer w/ thermostat	Electric open waterer w/ sinking or floating water heater	Time of Sale	0.69	No	Yes	90%	100%	100%	IL TRM
275	All/Total >100 kW	HVAC	Air Conditioner Tune-up	Certified technician performs a package of services on unitary or split system air conditioner, 36 kBtu/h - 65 kBtu/h	Existing AC system w/o standing maintenance contract or tune up in last 3 years, 36 kBtu/h - 65 kBtu/h	Retrofit	11.34	Yes	Yes	8%	100%	20%	IL TRM
276	All/All	HVAC	Air Conditioner Tune-up	Certified technician performs a package of services on unitary or split system air conditioner, > 65 kBtu/h	Existing AC system w/o standing maintenance contract or tune up in last 3 years, > 65 kBtu/h	Retrofit	1.16	Yes	No	100%	100%	20%	IL TRM
277	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	New Construction	3.51	Yes	No	100%	2%	100%	IL TRM
278	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	New Construction	1.92	Yes	No	100%	2%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
279	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - VAV Reheat, Economizer	New Construction	1.87	Yes	No	100%	2%	100%	IL TRM
280	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	New Construction	15.18	Yes	No	100%	1%	100%	IL TRM
281	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	New Construction	9.49	Yes	No	100%	1%	100%	IL TRM
282	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - VAV, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - VAV, Economizer	New Construction	9.29	Yes	No	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
283	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, No Economizer	New Construction	2.61	Yes	No	100%	1%	100%	IL TRM
284	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, Economizer	New Construction	1.63	Yes	No	100%	1%	100%	IL TRM
285	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - VAV Reheat, Economizer	New Construction	1.60	Yes	No	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
286	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	New Construction	4.77	Yes	No	100%	1%	100%	IL TRM
287	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	New Construction	2.98	Yes	No	100%	1%	100%	IL TRM
288	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	New Construction	2.92	Yes	No	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
289	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	New Construction	6.96	Yes	No	100%	1%	100%	IL TRM
290	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	New Construction	4.35	Yes	No	100%	1%	100%	IL TRM
291	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	New Construction	4.26	Yes	No	100%	1%	100%	IL TRM
292	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	Time of Sale	3.51	Yes	Yes	100%	2%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
293	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	Time of Sale	1.92	Yes	Yes	100%	2%	100%	IL TRM
294	All/All	HVAC	Electric Chillers	Air-cooled Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Air-cooled Chiller meeting IECC 2009 Standards - VAV Reheat, Economizer	Time of Sale	1.87	Yes	Yes	100%	2%	100%	IL TRM
295	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, No Economizer	Time of Sale	15.18	Yes	Yes	100%	1%	100%	IL TRM
296	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - CV Reheat, Economizer	Time of Sale	9.49	Yes	Yes	100%	1%	100%	IL TRM
297	All/All	HVAC	Electric Chillers	Water-cooled Reciprocating Chiller exceeding IECC 2009 Standards - VAV, Economizer	Water-cooled Reciprocating Chiller meeting IECC 2009 Standards - VAV, Economizer	Time of Sale	9.29	Yes	Yes	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
298	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, No Economizer	Time of Sale	2.61	Yes	Yes	100%	1%	100%	IL TRM
299	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - CV Reheat, Economizer	Time of Sale	1.63	Yes	Yes	100%	1%	100%	IL TRM
300	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards < 150 tons - VAV Reheat, Economizer	Time of Sale	1.60	Yes	Yes	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
301	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, No Economizer	Time of Sale	4.77	Yes	Yes	100%	1%	100%	IL TRM
302	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - CV Reheat, Economizer	Time of Sale	2.98	Yes	Yes	100%	1%	100%	IL TRM
303	All/All	HVAC	Electric Chillers	Water-cooled Rotary Screw and Scroll Chiller exceeding IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Water-cooled Rotary Screw and Scroll Chiller meeting IECC 2009 Standards >= 150 tons and < 300 tons - VAV Reheat, Economizer	Time of Sale	2.92	Yes	Yes	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
304	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, No Economizer	Time of Sale	6.96	Yes	Yes	100%	1%	100%	IL TRM
305	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - CV Reheat, Economizer	Time of Sale	4.35	Yes	Yes	100%	1%	100%	IL TRM
306	All/All	HVAC	Electric Chillers	Water-cooled Rotary and Screw Chiller exceeding IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Water-cooled Rotary and Screw Chiller meeting IECC 2009 Standards >= 300 tons - VAV Reheat, Economizer	Time of Sale	4.26	Yes	Yes	100%	1%	100%	IL TRM
307	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - < 8000 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - < 8000 Btu/H	Time of Sale	1.22	Yes	No	100%	100%	76%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
308	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - 8000 to 13999 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - 8000 to 13999 Btu/H	Time of Sale	2.40	Yes	No	100%	100%	76%	IL TRM
309	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - 14000 to 19999 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - 14000 to 19999 Btu/H	Time of Sale	3.66	Yes	Yes	100%	100%	76%	IL TRM
310	All/All	HVAC	ENERGY STAR and CEE Tier 1 Room Air Conditioner	New room air conditioning unit meeting ENERGY STAR efficiency standards - >= 20000 Btu/H	New room air conditioning unit meeting minimum federal efficiency standards - >= 20000 Btu/H	Time of Sale	5.71	Yes	Yes	100%	100%	76%	IL TRM
311	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	2.66	Yes	Yes	100%	64%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
312	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	1.69	Yes	Yes	100%	64%	100%	IL TRM
313	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTHP	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	1.70	Yes	Yes	100%	64%	100%	IL TRM
314	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	1.27	Yes	No	100%	64%	100%	IL TRM
315	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTAC w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	1.15	Yes	No	100%	64%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
316	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, PTHP	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	1.15	Yes	No	100%	64%	100%	IL TRM
317	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, Central Hot Water Fan Coil w/ Electric Resistance Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	0.96	No	No	100%	64%	100%	IL TRM
318	Hotel/Motel/All	HVAC	Guest Room Energy Management (PTAC & PTHP)	Automatic occupancy detector connected to HVAC controls, Central Hot Water Fan Coil w/ Gas Heating	Manual heating/cooling temperature set-point and fan On/Off/Auto thermostat controls	Time of Sale	0.84	No	No	100%	64%	100%	IL TRM
319	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - < 65,000 Btu/h	Time of Sale	4.24	Yes	Yes	100%	6%	33%	IL TRM
320	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 65,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 65,000 - 135,000 Btu/h	Time of Sale	2.31	Yes	Yes	100%	6%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
321	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 135,000 - 240,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 135,000 - 240,000 Btu/h	Time of Sale	2.11	Yes	Yes	100%	6%	33%	IL TRM
322	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - > 240,000 exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 240,000 - 760,000	Time of Sale	2.50	Yes	Yes	100%	6%	33%	IL TRM
323	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - < 17,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - < 17,000 Btu/h	Time of Sale	3.21	Yes	Yes	100%	6%	33%	IL TRM
324	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - 17,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - 17,000 - 135,000 Btu/h	Time of Sale	2.06	Yes	Yes	100%	6%	33%	IL TRM
325	All/All	HVAC	Heat Pump Systems	Groundwater-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Groundwater-source Heat Pump - < 135,000 Btu/h	Time of Sale	1.55	Yes	Yes	100%	6%	33%	IL TRM
326	All/All	HVAC	Heat Pump Systems	Ground-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Ground-source Heat Pump - < 135,000 Btu/h	Time of Sale	4.69	Yes	Yes	100%	6%	33%	IL TRM
327	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - < 65,000 Btu/h	New Construction	4.24	Yes	No	100%	6%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
328	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 65,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 65,000 - 135,000 Btu/h	New Construction	2.31	Yes	No	100%	6%	33%	IL TRM
329	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - 135,000 - 240,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 135,000 - 240,000 Btu/h	New Construction	2.11	Yes	No	100%	6%	33%	IL TRM
330	All/All	HVAC	Heat Pump Systems	Air-cooled Heat Pump - > 240,000 exceeding IECC 2012	IECC 2012 Air-cooled Heat Pump - 240,000 - 760,000	New Construction	2.50	Yes	No	100%	6%	33%	IL TRM
331	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - < 17,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - < 17,000 Btu/h	New Construction	3.21	Yes	No	100%	6%	33%	IL TRM
332	All/All	HVAC	Heat Pump Systems	Water-source Heat Pump - 17,000 - 135,000 Btu/h exceeding IECC 2012	IECC 2012 Water-source Heat Pump - 17,000 - 135,000 Btu/h	New Construction	2.06	Yes	No	100%	6%	33%	IL TRM
333	All/All	HVAC	Heat Pump Systems	Groundwater-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Groundwater-source Heat Pump - < 135,000 Btu/h	New Construction	1.55	Yes	No	100%	6%	33%	IL TRM
334	All/All	HVAC	Heat Pump Systems	Ground-source Heat Pump - < 135,000 Btu/h exceeding IECC 2012	IECC 2012 Ground-source Heat Pump - < 135,000 Btu/h	New Construction	4.69	Yes	No	100%	6%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
335	All/All	HVAC	High Efficiency Furnace	AFUE 90% Furnace	AFUE 80% Furnace	Time of Sale	3.54	No	No	100%	94%	100%	IL TRM
336	All/All	HVAC	High Efficiency Furnace	AFUE 91% Furnace	AFUE 80% Furnace	Time of Sale	3.33	No	No	100%	94%	100%	IL TRM
337	All/All	HVAC	High Efficiency Furnace	AFUE 92% Furnace	AFUE 80% Furnace	Time of Sale	3.17	No	No	100%	94%	100%	IL TRM
338	All/All	HVAC	High Efficiency Furnace	AFUE 93% Furnace	AFUE 80% Furnace	Time of Sale	2.60	No	No	100%	94%	100%	IL TRM
339	All/All	HVAC	High Efficiency Furnace	AFUE 94% Furnace	AFUE 80% Furnace	Time of Sale	2.24	No	No	100%	94%	100%	IL TRM
340	All/All	HVAC	High Efficiency Furnace	AFUE 95% Furnace	AFUE 80% Furnace	Time of Sale	1.99	No	No	100%	94%	100%	IL TRM
341	All/All	HVAC	High Efficiency Furnace	AFUE 96% Furnace	AFUE 80% Furnace	Time of Sale	1.81	No	No	100%	94%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
342	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity = 50 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 50 gallons, input wattage: 12 kW - 54 kW	Retrofit	0.86	No	Yes	92%	30%	100%	IL TRM
344	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity =80 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 80 gallons, input wattage: 12 kW - 54 kW	Time of Sale	1.90	Yes	Yes	92%	30%	100%	IL TRM
345	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity =80 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity = 80 gallons, input wattage: 12 kW - 54 kW	Retrofit	1.90	Yes	Yes	92%	30%	100%	IL TRM
347	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity >= 100 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity >= 100 gallons, input wattage: 12 kW - 54 kW	Time of Sale	1.60	Yes	Yes	92%	30%	100%	IL TRM
348	All/Small Load (<=100 kW)	Hot Water	Storage Water Heater	Electric, Storage Capacity >= 100 gallons, EF >= 0.95, TE >= 0.98, standby loss < 3%	Electric, Storage Capacity >= 100 gallons, input wattage: 12 kW - 54 kW	Retrofit	1.60	Yes	Yes	92%	30%	100%	IL TRM
351	All/All	Lighting	LED Bulbs and Fixtures	LED High- and Low-Bay Fixtures	MH 250 W CWA Pulse Start	Retrofit	2.00	Yes	Yes	100%	6%	93%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
353	All/All	Lighting	LED Bulbs and Fixtures	LED High- and Low-Bay Fixtures	MH 250 W CWA Pulse Start	Time of Sale	3.20	Yes	Yes	100%	6%	93%	IL TRM
354	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	Time of Sale	5.76	Yes	Yes	100%	96%	76%	IL TRM
355	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	Time of Sale	5.81	Yes	Yes	100%	96%	76%	IL TRM
356	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012 w/ elec res htg	Time of Sale	40.05	Yes	Yes	100%	96%	76%	IL TRM
357	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012 w/ elec res htg	Time of Sale	36.26	Yes	Yes	100%	4%	76%	IL TRM
358	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	Time of Sale	5.36	Yes	Yes	100%	4%	76%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
359	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	Time of Sale	5.07	Yes	Yes	100%	4%	76%	IL TRM
360	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	5.76	Yes	No	100%	96%	76%	IL TRM
361	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTAC exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	5.81	Yes	No	100%	96%	76%	IL TRM
362	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	40.05	Yes	No	100%	96%	76%	IL TRM
363	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTAC meeting IECC 2012	New Construction	36.26	Yes	No	100%	4%	76%	IL TRM
364	Hotel/Motel/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	New Construction	3.09	Yes	No	100%	4%	76%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
365	All/All	HVAC	Package Terminal Air Conditioner (PTAC) and Package Terminal Heat Pump (PTHP)	PTHP exceeding IECC 2012	PTHP meeting IECC 2012	New Construction	3.03	Yes	No	100%	4%	76%	IL TRM
366	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled AC - < 65,000 Btu/h	Time of Sale	2.61	Yes	Yes	100%	96%	33%	IL TRM
367	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Air-cooled AC - >= 760,000 , all other heating type	Time of Sale	1.84	Yes	Yes	100%	96%	33%	IL TRM
368	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	1.28	Yes	Yes	100%	96%	33%	IL TRM
369	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled condensing units - >135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled condensing units	Time of Sale	5.79	Yes	Yes	100%	96%	33%	IL TRM
370	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Small-duct high-velocity - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Small-duct high-velocity - < 65,000 Btu/h	Time of Sale	7.26	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
371	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Through-the-wall AC - < 30,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Through-the-wall AC - < 30,000 Btu/h	Time of Sale	3.03	Yes	Yes	100%	96%	33%	IL TRM
372	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Evaporatively cooled condensing units	Time of Sale	0.41	No	No	100%	96%	33%	IL TRM
373	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Evaporatively-cooled AC - < 65,000 Btu/h	Time of Sale	2.85	Yes	Yes	100%	96%	33%	IL TRM
374	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Evaporatively-cooled AC - >= 760,000 , all other heating type	Time of Sale	3.69	Yes	Yes	100%	96%	33%	IL TRM
375	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	3.31	Yes	Yes	100%	96%	33%	IL TRM
376	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	Time of Sale	3.12	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
377	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h, electric resistance heating (or none)	Time of Sale	2.76	Yes	Yes	100%	96%	33%	IL TRM
378	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000, all other heating section type	Time of Sale	2.42	Yes	Yes	100%	96%	33%	IL TRM
379	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000, electric resistance heating (or none)	Time of Sale	2.94	Yes	Yes	100%	96%	33%	IL TRM
380	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h, all other heating section type	Time of Sale	2.94	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
381	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	Time of Sale	2.59	Yes	Yes	100%	96%	33%	IL TRM
382	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Water-cooled AC - < 65,000 Btu/h	Time of Sale	2.85	Yes	Yes	100%	96%	33%	IL TRM
383	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Water-cooled AC - >= 760,000 , all other heating type	Time of Sale	2.76	Yes	Yes	100%	96%	33%	IL TRM
384	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - >= 760,000 , electric resistance heating (or none)	Time of Sale	2.76	Yes	Yes	100%	96%	33%	IL TRM
385	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	Time of Sale	2.25	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
386	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	Time of Sale	1.92	Yes	Yes	100%	96%	33%	IL TRM
387	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 240,000 - 760,000 , all other heating section type	Time of Sale	2.42	Yes	Yes	100%	96%	33%	IL TRM
388	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	Time of Sale	2.08	Yes	Yes	100%	96%	33%	IL TRM
389	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	Time of Sale	2.94	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
390	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	Time of Sale	2.59	Yes	Yes	100%	96%	33%	IL TRM
391	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Water-cooled condensing units	Time of Sale	0.41	No	No	100%	96%	33%	IL TRM
392	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled AC - < 65,000 Btu/h	New Construction	2.61	Yes	No	100%	96%	33%	IL TRM
393	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Through-the-wall AC - < 30,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Through-the-wall AC - < 30,000 Btu/h	New Construction	3.03	Yes	No	100%	96%	33%	IL TRM
394	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled Small-duct high-velocity - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled Small-duct high-velocity - < 65,000 Btu/h	New Construction	7.26	Yes	No	100%	96%	33%	IL TRM
395	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	1.28	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
396	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Air-cooled AC - >= 760,000 , all other heating type	New Construction	1.84	Yes	No	100%	96%	33%	IL TRM
397	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Water-cooled AC - < 65,000 Btu/h	New Construction	2.85	Yes	No	100%	96%	33%	IL TRM
398	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	2.59	Yes	No	100%	96%	33%	IL TRM
399	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	2.94	Yes	No	100%	96%	33%	IL TRM
400	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	1.92	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
401	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	2.25	Yes	No	100%	96%	33%	IL TRM
402	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	2.08	Yes	No	100%	96%	33%	IL TRM
403	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Water-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	2.42	Yes	No	100%	96%	33%	IL TRM
404	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Water-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	2.76	Yes	No	100%	96%	33%	IL TRM
405	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Water-cooled AC - >= 760,000 , all other heating type	New Construction	2.76	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
406	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - < 65,000 Btu/h exceeding IECC 2012	IECC 2012 Evaporatively-cooled AC - < 65,000 Btu/h	New Construction	2.85	Yes	No	100%	96%	33%	IL TRM
407	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h, electric resistance heating (or none)	New Construction	2.59	Yes	No	100%	96%	33%	IL TRM
408	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 65,000 - 135,000 Btu/h, all other heating section type	New Construction	2.94	Yes	No	100%	96%	33%	IL TRM
409	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h, electric resistance heating (or none)	New Construction	2.76	Yes	No	100%	96%	33%	IL TRM
410	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 135,000 - 240,000 Btu/h, all other heating section type	New Construction	3.12	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
411	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	2.94	Yes	No	100%	96%	33%	IL TRM
412	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Evaporatively-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	2.42	Yes	No	100%	96%	33%	IL TRM
413	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Evaporatively-cooled AC - >= 760,000 , electric resistance heating (or none)	New Construction	3.31	Yes	No	100%	96%	33%	IL TRM
414	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively-cooled AC - >= 760,000 exceeding IECC 2012, all other heating type	IECC 2012 Evaporatively-cooled AC - >= 760,000 , all other heating type	New Construction	3.69	Yes	No	100%	96%	33%	IL TRM
415	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Air-cooled condensing units - >135,000 Btu/h exceeding IECC 2012	IECC 2012 Air-cooled condensing units	New Construction	5.79	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
416	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Water-cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Water-cooled condensing units	New Construction	0.41	No	No	100%	96%	33%	IL TRM
417	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners	Evaporatively cooled condensing units - >135,000 exceeding IECC 2012	IECC 2012 Evaporatively cooled condensing units	New Construction	0.41	No	No	100%	96%	33%	IL TRM
418	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type - 2018	Time of Sale	2.38	Yes	Yes	100%	96%	64%	IL TRM
419	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) -2018	Time of Sale	2.12	Yes	Yes	100%	96%	64%	IL TRM
420	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - 2018	Time of Sale	2.82	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
421	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - 2018	Time of Sale	2.49	Yes	Yes	100%	96%	54%	IL TRM
422	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - 2018	Time of Sale	2.07	Yes	Yes	100%	3%	54%	IL TRM
423	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) -2018	Time of Sale	1.81	Yes	Yes	100%	22%	64%	IL TRM
424	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	1.81	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
425	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	2.07	Yes	No	100%	96%	33%	IL TRM
426	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	2.12	Yes	No	100%	96%	33%	IL TRM
427	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	2.38	Yes	No	100%	96%	33%	IL TRM
428	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	2.49	Yes	No	100%	96%	33%	IL TRM
429	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2018	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	2.82	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
432	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	1.31	Yes	Yes	85%	100%	58%	IL TRM
433	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.15	No	No	85%	100%	58%	IL TRM
434	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	2.80	Yes	Yes	95%	100%	45%	IL TRM
435	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.22	No	No	95%	100%	45%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
438	Restaurant/ Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.25	No	No	93%	100%	44%	IL TRM
439	Restaurant/ Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.07	No	No	93%	100%	44%	IL TRM
440	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.72	No	No	7%	100%	44%	IL TRM
441	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.07	No	No	7%	100%	44%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
442	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.28	No	No	93%	100%	50%	IL TRM
443	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	Retrofit	0.05	No	No	93%	100%	50%	IL TRM
448	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	1.31	Yes	Yes	15%	100%	58%	IL TRM
449	Grocery/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.15	No	No	85%	100%	58%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
450	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	2.80	Yes	Yes	5%	100%	45%	IL TRM
451	Office/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.22	No	No	95%	100%	45%	IL TRM
452	Miscellaneous/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.64	No	No	93%	100%	45%	IL TRM
453	Miscellaneous/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.04	No	No	93%	100%	45%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
454	Restaurant/ Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.25	No	No	93%	100%	44%	IL TRM
455	Restaurant/ Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.07	No	No	93%	100%	44%	IL TRM
456	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.72	No	No	7%	100%	44%	IL TRM
457	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.07	No	No	7%	100%	44%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
458	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Continuous fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.28	No	No	93%	100%	50%	IL TRM
459	Retail/Service/Small Load (<=100 kW)	HVAC	Small Commercial Programmable Thermostats	Programmable thermostat with Intermittent fan model during operation	Non-programmable thermostat requiring manual intervention to change temperature setpoint	DI	0.05	No	No	93%	100%	50%	IL TRM
462	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.12	No	No	100%	1%	100%	IL TRM
463	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.12	No	No	100%	1%	100%	IL TRM
464	Office/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.12	No	No	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
465	Miscellaneous/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.14	No	No	100%	1%	100%	IL TRM
466	Restaurant/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.14	No	No	100%	1%	100%	IL TRM
467	Retail/Service/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.17	No	No	100%	1%	100%	IL TRM
469	Grocery/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.16	No	No	100%	1%	100%	IL TRM
470	School (K-12)/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.09	No	No	100%	1%	100%	IL TRM
472	College/University/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.11	No	No	100%	1%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
473	Medical/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.10	No	No	100%	1%	100%	IL TRM
474	Hotel/Motel/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.16	No	No	100%	1%	100%	IL TRM
475	Miscellaneous/All	HVAC	Demand Controlled Ventilation	DCV, new CO2 sensors installed on return air systems	Space with no demand control capability, 17 CFM/occupant of OA ventilation	Retrofit	0.13	No	No	100%	1%	100%	IL TRM
480	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	1.65	Yes	Yes	15%	42%	100%	IL TRM
482	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	3.52	Yes	Yes	5%	55%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
484	Miscellaneous/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.80	No	Yes	7%	55%	100%	IL TRM
486	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.31	No	Yes	7%	56%	100%	IL TRM
487	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.09	No	Yes	7%	56%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
488	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.90	No	Yes	7%	56%	100%	IL TRM
489	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.09	No	Yes	7%	56%	100%	IL TRM
490	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.35	No	Yes	7%	50%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
491	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	Retrofit	0.06	No	Yes	7%	50%	100%	IL TRM
496	Grocery/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	1.65	Yes	Yes	15%	42%	100%	IL TRM
498	Office/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	3.52	Yes	Yes	5%	55%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
500	Miscellaneous/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.80	No	Yes	7%	55%	100%	IL TRM
502	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.31	No	Yes	7%	56%	100%	IL TRM
503	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.09	No	Yes	7%	56%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
504	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.90	No	Yes	7%	56%	100%	IL TRM
505	Restaurant/ Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.09	No	Yes	7%	56%	100%	IL TRM
506	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Continuous fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.35	No	Yes	7%	50%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
507	Retail/Service/Total >100 kW	HVAC	Small Commercial Programmable Thermostat Adjustments	Programmable thermostat or BAS with Intermittent fan model during operation, reprogrammed to match actual facility occupancy	Commercial programmable thermostat or BAS that do not align with a facilities actual occupancy	DI	0.06	No	Yes	7%	50%	100%	IL TRM
510	All/All	HVAC	Small Business Furnace Tune-Up	Approved technician must complete the tune-up requirements	Furnace assumed not to have had a tune-up in the past 2 years	Retrofit	0.19	No	No	100%	100%	20%	IL TRM
511	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	1.39	Yes	Yes	100%	3%	54%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
512	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	Time of Sale	2.31	Yes	Yes	100%	3%	54%	IL TRM
513	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	1.16	Yes	Yes	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
514	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	Time of Sale	1.03	Yes	Yes	100%	22%	64%	IL TRM
515	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	0.40	No	Yes	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
516	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	1.71	Yes	Yes	100%	22%	64%	IL TRM
517	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	Time of Sale	2.85	Yes	Yes	100%	3%	54%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
518	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	1.44	Yes	Yes	100%	22%	64%	IL TRM
519	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	Time of Sale	1.27	Yes	Yes	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
520	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	Time of Sale	0.49	No	Yes	100%	22%	64%	IL TRM
521	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	10 hp VSD - 10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	Time of Sale	1.95	Yes	Yes	100%	22%	64%	IL TRM
522	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	1.39	Yes	No	100%	3%	54%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
523	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	New Construction	2.31	Yes	No	100%	3%	54%	IL TRM
524	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	1.16	Yes	No	100%	3%	54%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
525	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	New Construction	1.03	Yes	No	100%	22%	64%	IL TRM
526	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	1-5 hp VSD - 1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	1-5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	0.40	No	No	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
527	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	1.71	Yes	No	100%	22%	64%	IL TRM
528	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - 7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Chilled water pump - new motor installed w/o vsd or other methods of control	New Construction	2.85	Yes	No	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
529	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Air foil/backward incline inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	1.44	Yes	No	100%	3%	54%	IL TRM
530	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved fan, with discharge dampers - new motor installed w/o vsd or other methods of control	New Construction	1.27	Yes	No	100%	22%	64%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
531	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	7.5 hp VSD - Forward curved inlet guide vanes - new motor installed w/o vsd or other methods of control	New Construction	0.49	No	No	100%	22%	64%	IL TRM
532	All/All	HVAC	Variable Speed Drives for HVAC Pumps and Cooling Tower Fans	10 hp VSD - 10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control - VSD applied to motor with variable load and necessary controls	10 hp VSD - Hot water pump - new motor installed w/o vsd or other methods of control	New Construction	1.95	Yes	No	100%	22%	64%	IL TRM
533	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners- 2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type - 2023	Time of Sale	2.66	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
534	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) - 2023	Time of Sale	2.39	Yes	Yes	100%	96%	33%	IL TRM
535	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - 2023	Time of Sale	2.95	Yes	Yes	100%	96%	33%	IL TRM
536	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - 2023	Time of Sale	2.62	Yes	Yes	100%	96%	33%	IL TRM
537	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - 2023	Time of Sale	2.47	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
538	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) - 2023	Time of Sale	2.21	Yes	Yes	100%	96%	33%	IL TRM
539	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	2.21	Yes	No	100%	96%	33%	IL TRM
540	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	2.47	Yes	No	100%	96%	33%	IL TRM
541	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	2.39	Yes	No	100%	96%	33%	IL TRM
542	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	2.66	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
543	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	2.62	Yes	No	100%	96%	33%	IL TRM
544	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-2023	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	2.95	Yes	No	100%	96%	33%	IL TRM
545	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none)	New Construction	4.14	Yes	No	100%	96%	33%	IL TRM
546	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type	New Construction	4.28	Yes	No	100%	96%	33%	IL TRM
547	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none)	New Construction	3.44	Yes	No	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
548	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	New Construction	3.56	Yes	No	100%	96%	33%	IL TRM
549	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none)	New Construction	4.75	Yes	No	100%	96%	33%	IL TRM
550	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type	New Construction	4.93	Yes	No	100%	96%	33%	IL TRM
551	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , all other heating section type	Time of Sale	3.56	Yes	Yes	100%	96%	33%	IL TRM
552	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 135,000 - 240,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 135,000 - 240,000 Btu/h , electric resistance heating (or none) - Current	Time of Sale	3.44	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
553	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 240,000 - 760,000 , all other heating section type - Current	Time of Sale	4.93	Yes	Yes	100%	96%	33%	IL TRM
554	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 240,000 - 760,000 exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 240,000 - 760,000 , electric resistance heating (or none) - Current	Time of Sale	4.75	Yes	Yes	100%	96%	33%	IL TRM
555	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, all other heating section type	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , all other heating section type - Current	Time of Sale	4.28	Yes	Yes	100%	96%	33%	IL TRM
556	All/All	HVAC	Single-Package and Split System Unitary Air Conditioners-Current	Air-cooled AC - 65,000 - 135,000 Btu/h exceeding IECC 2012, electric resistance heating (or none)	IECC 2012 Air-cooled AC - 65,000 - 135,000 Btu/h , electric resistance heating (or none) - Current	Time of Sale	4.14	Yes	Yes	100%	96%	33%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
557	All/All	Lighting	Occupancy Sensor Lighting Controls	Wall-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	10.75	Yes	Yes	100%	100%	95%	IL TRM
558	All/All	Lighting	Occupancy Sensor Lighting Controls	Remote-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	11.47	Yes	Yes	100%	100%	95%	IL TRM
559	All/All	Lighting	Occupancy Sensor Lighting Controls	Fixture-mounted passive infrared, ultrasonic detectors, and/or fixture-mounted sensors	Lighting System Uncontrolled by Occupancy	Retrofit	0.55	No	Yes	100%	100%	95%	IL TRM
560	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8/T5 Fixtures and Lamps	RWT8 - F32/25W T8/T5 Extra Lamp Life	F32 T8 standard lamp	Time of Sale	4.07	Yes	Yes	8%	98%	62%	IL TRM
561	All/Total >100 kW	Lighting	High Performance and Reduced Wattage T8/T5 Fixtures and Lamps	RWT8 - F32/25W T8/T5 Extra Lamp Life	F32 T8 standard lamp	Retrofit	1.81	Yes	Yes	8%	98%	62%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
562	All/Medium Load (Over 100 kW <= 400 kW)	Lighting	Commercial Custom Measure	Custom Lighting Upgrades	Custom Lighting Baseline	Retrofit	2.44	Yes	Yes	6%	100%	100%	ICF
563	All/Total >100 kW	Miscellaneous	Commercial Custom Measure	Custom Non-Lighting Upgrades	Custom Non-Lighting Baseline	Retrofit	6.79	Yes	Yes	8%	100%	100%	ICF
564	All/Small Load (<=100 kW)	Lighting	Small Business Program Lighting Upgrades	Alternative SB Lighting Approach Saving 22773 kWh gross	Regular Lighting Approach	Retrofit	5.17	Yes	Yes	100%	100%	100%	ICF
565	All/Small Load (<=100 kW)	Refrigeration	Small Business Program Refrigeration Upgrades	Alternative SB Refrigeration Approach Saving 2530 kWh gross	Regular Refrigeration Approach	Retrofit	7.03	Yes	Yes	100%	100%	100%	ICF
566	All/Small Load (<=100 kW)	Miscellaneous	Sm New Const <=100K sq ft	More Efficient than IECC2015 construction	IECC2015 Code construction - Sm New Const	New Construction	10.36	Yes	Yes	92%	100%	100%	ICF
567	All/Total >100 kW	Miscellaneous	Lrg New Const >100K sq ft	More Efficient than IECC2015 construction	IECC2015 Code construction - Lrg New Const	New Construction	5.56	Yes	Yes	8%	100%	100%	ICF
4223	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2 airflow	Retrofit	1.72	No	Yes	100%	0%	100%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4224	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2 airflow	Retrofit	0.86	No	Yes	100%	0%	100%	ICF
4225	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 airflow	Retrofit	11.86	No	Yes	100%	0%	100%	ICF
4226	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 airflow	Retrofit	11.62	No	Yes	100%	0%	100%	ICF
4227	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2	Retrofit	2.68	No	Yes	100%	0%	100%	ICF
4228	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2	Retrofit	1.51	No	Yes	100%	0%	100%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4229	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2	Retrofit	2.74	No	Yes	100%	0%	100%	ICF
4230	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with application optimization and load balancing - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2	Retrofit	2.74	No	Yes	100%	0%	100%	ICF
4231	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 No economizer	Retrofit	3.70	No	Yes	100%	0%	100%	ICF
4232	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 No economizer	Retrofit	3.62	No	Yes	100%	0%	100%	ICF
4233	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2 airflow	New Construction	5.34	No	Yes	100%	0%	100%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4234	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2 airflow	New Construction	2.86	No	Yes	100%	0%	100%	ICF
4235	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 airflow	New Construction	93.08	No	Yes	100%	0%	100%	ICF
4236	Miscellaneous/All	HVAC	Air Flow Management	High-efficiency airflow configuration - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 airflow	New Construction	129.09	No	Yes	100%	0%	100%	ICF
4237	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 5000 ft2	Baseline data center post energy audit - Data Center - 5000 ft2	New Construction	5.76	No	Yes	100%	0%	100%	ICF
4238	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 10000 ft2	Baseline data center post energy audit - Data Center - 10000 ft2	New Construction	3.36	No	Yes	100%	0%	100%	ICF
4239	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2	New Construction	20.42	No	Yes	100%	0%	100%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4240	Miscellaneous/All	Miscellaneous	Load Distribution	Data center with transformerless PDU's and load balancing - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2	New Construction	20.38	No	Yes	100%	0%	100%	ICF
4241	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 25000 ft2	Baseline data center post energy audit - Data Center - 25000 ft2 No economizer	New Construction	41.08	No	Yes	100%	0%	100%	ICF
4242	Miscellaneous/All	HVAC	Waterside Economizer	Waterside economizer and associate controls installed - Data Center - 50000 ft2	Baseline data center post energy audit - Data Center - 50000 ft2 No economizer	New Construction	40.24	No	Yes	100%	0%	100%	ICF
4246	All/Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Other	RetroCommissioning	Data Center RCx	Data Center RCx - Baseline	Retrofit	7.10	Yes	Yes	0%	3%	99%	ICF
4247	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Education RCx	Education RCx - Baseline	Retrofit	4.61	Yes	Yes	1%	14%	99%	ICF
4248	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Hospital RCx	Hospital RCx - Baseline	Retrofit	4.46	Yes	Yes	1%	2%	99%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4249	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Lodging RCx	Lodging RCx - Baseline	Retrofit	2.42	Yes	Yes	1%	21%	99%	ICF
4250	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Office RCx	Office RCx - Baseline	Retrofit	3.86	Yes	Yes	1%	1%	99%	ICF
4251	All/Large Load (Over 400 kW <= 1,000 kW)	Other	RetroCommissioning	Other RCx	Other RCx - Baseline	Retrofit	1.02	Yes	Yes	1%	3%	99%	ICF
4252	All/Very Large Load, Extra Large Load, & High Voltage (Over 1,000 kW)	Other	RetroCommissioning	Small Building - Data Center RCx	Small Building - Data Center RCx - Baseline	Retrofit	9.09	Yes	Yes	0%	6%	99%	ICF
4253	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Education RCx	Small Building - Education RCx - Baseline	Retrofit	2.77	Yes	Yes	6%	14%	99%	ICF
4254	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Hospital RCx	Small Building - Hospital RCx - Baseline	Retrofit	2.30	Yes	Yes	6%	4%	99%	ICF
4255	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Lodging RCx	Small Building - Lodging RCx - Baseline	Retrofit	1.13	Yes	Yes	6%	27%	99%	ICF

*Commercial applicability factors were developed only for measures included in the potential analyses.

Appendix E: Commercial Measure Assumptions

Measure ID	Sub-Sector/Building Type	End Use	Measure Name	Efficient Measure Definition	Baseline Definition	Measure Type	Measure TRC	Measure Included in Economic Potential Analysis	Measure Included in Achievable Potential Analysis	Applicability to Building Type*	Technical Feasibility*	Not-Yet-Adopted Rate*	References
4256	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Office RCx	Small Building - Office RCx - Baseline	Retrofit	2.05	Yes	Yes	6%	5%	99%	ICF
4257	All/Medium Load (Over 100 kW <= 400 kW)	Other	RetroCommissioning	Small Building - Other RCx	Small Building - Other RCx - Baseline	Retrofit	0.44	Yes	Yes	6%	6%	99%	ICF
4258	All/Large Load (Over 400 kW <= 1,000 kW)	Other	DCEO Commercial	0	0	Retrofit	0.00	No	Yes	1%	100%	90%	ICF
629	Multifamily /Gas Heating	Lighting	MF DI Lighting	0	0	Direct Install	1.32	#N/A	Yes	87%	62%	100%	IL TRM
630	Multifamily /Electric Heating	Lighting	MF DI Lighting	0	0	Direct Install	1.19	#N/A	Yes	13%	62%	100%	IL TRM

*Commercial applicability factors were developed only for measures included in the potential analyses.