

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Health	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Health	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Health	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	370	15	\$313	0%	0
Health	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	309	15	\$265	0%	0
Health	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Health	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Health	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.07	7	\$0.29	90%	833
Health	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.08	7	\$0.29	90%	930
Health	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	128	15	\$138	76%	0
Health	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	140	15	\$138	76%	5
Health	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBtuH	Existing	1.02	3	\$0.75	48%	7
Health	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtuH	Existing	1.12	3	\$0.75	48%	7
Health	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.06	15	\$3	65%	0
Health	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtuH Boiler	Existing	164	12	\$318	21%	0
Health	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	53%	0
Health	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	59%	0
Health	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	10%	0
Health	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	12%	0
Health	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	14%	0
Health	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	12%	0
Health	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	Existing	224	10	\$5,944	14%	0
Health	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	New	224	10	\$5,944	14%	0
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	86	11	\$789	33%	0
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	86	11	\$789	33%	0
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	62	11	\$391	31%	15
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	62	11	\$391	31%	0
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	69	11	\$565	29%	10
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	69	11	\$565	29%	0
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	53	11	\$134	28%	10

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Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Health	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	53	11	\$134	28%	0
Health	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	81%	0
Health	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	81%	0
Health	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	68%	0
Health	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	68%	0
Health	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	239	14	\$442	8%	7
Health	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	239	14	\$442	8%	0
Health	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	163	14	\$307	9%	6
Health	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	163	14	\$307	9%	0
Health	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	309	40	\$833	60%	485
Health	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	308	40	\$666	83%	8
Health	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	11	10	\$4	63%	0
Health	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	Existing	4,455	15	\$3,772	0%	0
Health	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	New	4,455	15	\$3,820	0%	0
Health	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	Existing	16	10	\$8	21%	0
Health	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	New	16	10	\$8	21%	0
Health	Water Heat	Low-Flow Showerheads	2.5 GPM Showerhead (Federal Code)	Existing Showerhead (4.5 GPM)	Per Showerhead	Existing	36	10	\$31	9%	55
Health	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	Existing	18	5	\$39	13%	0
Health	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	New	18	5	\$39	13%	0
Health	Water Heat	Low-Flow Spray Heads	1.6 GPM (Code)	Existing Spray Head (2.5 GPM)	Per Spray Head	Existing	27	5	\$30	8%	0
Health	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	3.31	10	\$196	86%	0
Health	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	3.30	10	\$196	86%	0
Health	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.00	100%	0
Health	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.00	100%	0
Health	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Health	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Health	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Health	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0

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Health	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.07	13	\$0.07	100%	0
Health	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.07	13	\$0.07	100%	0
Health	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	4.64	13	\$2	52%	0
Health	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Health	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Health	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	61	7	\$62	5%	0
Health	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.07	13	\$0.02	100%	542
Health	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.07	13	\$0.02	100%	13
Health	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	210	4	\$102	75%	36
Large Office	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Office	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Large Office	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.03	100%	0
Large Office	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.03	100%	0
Large Office	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	Existing	0.02	20	\$0.08	100%	0
Large Office	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	New	0.02	20	\$0.08	100%	0
Large Office	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	Existing	0.04	20	\$0.18	100%	0
Large Office	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	New	0.03	20	\$0.18	100%	0
Large Office	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	Existing	0.05	20	\$0.25	100%	0
Large Office	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	New	0.05	20	\$0.25	100%	0
Large Office	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	Existing	0.06	20	\$0.29	100%	568
Large Office	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	New	0.05	20	\$0.29	100%	20
Large Office	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Office	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Boiler - Economizer	Economizer	No Economizer	Per Boiler HP	Existing	45	20	\$86	74%	0
Large Office	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.18	20	\$4	49%	0
Large Office	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	New	0.15	20	\$4	49%	0
Large Office	Space Heat	Boiler - Pipe Insulation	Code (2" of Insulation)	Existing Insulation (1" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.71	20	\$15	15%	0
Large Office	Space Heat	Boiler - Turbulators	Boiler Turbulator	No Turbulator	Per Tube	Existing	16	20	\$15	55%	0
Large Office	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	Existing	2,480	10	\$2,060	64%	187
Large Office	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	New	2,175	10	\$2,060	77%	9
Large Office	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Large Office	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Large Office	Space Heat	Demand Controlled Ventilation	Demand Controlled Ventilation - DCV (Occupancy Sensors / CO2 Sensors)	Constant Ventilation	Per Sensor	Existing	58	15	\$450	43%	1,113
Large Office	Space Heat	Demand Controlled Ventilation	Demand Controlled Ventilation - DCV (Occupancy Sensors / CO2 Sensors)	Constant Ventilation	Per Sensor	Existing	62	15	\$450	43%	1,453
Large Office	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	Existing	3,255	5	\$24,507	51%	0
Large Office	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	New	2,854	5	\$24,507	51%	0
Large Office	Space Heat	Direct Digital Control System-Installation	DDC Retrofit - EMS Upgrade	Pneumatic	Per Building	Existing	3,255	5	\$44,782	51%	0
Large Office	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Large Office	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0

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Large Office	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	9
Large Office	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	0
Large Office	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Large Office	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.04	100%	0
Large Office	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.04	100%	0
Large Office	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.07	100%	0
Large Office	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.07	100%	0
Large Office	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.10	100%	0
Large Office	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.10	100%	0
Large Office	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.13	100%	275
Large Office	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.13	100%	11
Large Office	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Office	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Large Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Large Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Large Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Large Office	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.50	13	\$0.38	9%	0
Large Office	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.54	13	\$0.38	9%	83
Large Office	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	Existing	1,040	13	\$502	3%	5
Large Office	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	New	1,040	13	\$502	3%	0
Large Office	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.22	20	\$2	15%	7
Large Office	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Large Office	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Large Office	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Large Office	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	438	15	\$1,205	0%	0
Large Office	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	384	15	\$1,096	0%	0
Large Office	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Large Office	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Large Office	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	1,445
Large Office	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	1,887
Large Office	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	148	15	\$138	79%	0
Large Office	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	160	15	\$138	79%	0
Large Office	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBtu	Existing	1.21	3	\$0.75	48%	13
Large Office	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	1.31	3	\$0.75	48%	16
Large Office	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.05	15	\$3	62%	0
Large Office	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtuH Boiler	Existing	195	12	\$318	21%	0

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Large Office	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	62%	0
Large Office	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	69%	0
Large Office	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	11%	0
Large Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	1%	0
Large Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	1%	0
Large Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	1%	0
Large Office	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	86%	0
Large Office	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	86%	0
Large Office	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	72%	0
Large Office	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	72%	0
Large Office	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	1,516	40	\$833	60%	634
Large Office	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	1,513	40	\$666	83%	11
Large Office	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	23	10	\$4	63%	0
Large Office	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuh Boiler	Existing	1,048	15	\$2,880	0%	0
Large Office	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuh Boiler	New	1,048	15	\$2,989	0%	0
Large Office	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	9	10	\$196	81%	0
Large Office	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	9	10	\$196	81%	0
Large Office	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Large Office	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.03	100%	0
Large Office	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.03	100%	0
Large Office	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	18	13	\$2	52%	0
Large Office	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Large Office	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	303	7	\$62	5%	0
Large Office	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.01	100%	711
Large Office	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.01	100%	18
Large Office	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	1,031	4	\$102	35%	78

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Large Retail	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Retail	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Large Retail	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.08	100%	0
Large Retail	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.08	100%	0
Large Retail	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	Existing	0.02	20	\$0.23	100%	0
Large Retail	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	New	0.01	20	\$0.23	100%	7
Large Retail	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	Existing	0.04	20	\$0.47	100%	0
Large Retail	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.47	100%	0
Large Retail	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	Existing	0.05	20	\$0.66	100%	361
Large Retail	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	New	0.01	20	\$0.66	100%	0
Large Retail	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	Existing	0.05	20	\$0.75	100%	127
Large Retail	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	New	0.02	20	\$0.75	100%	0
Large Retail	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Retail	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Boiler - Economizer	Economizer	No Economizer	Per Boiler HP	Existing	35	20	\$86	75%	0
Large Retail	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.06	20	\$4	49%	0
Large Retail	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	New	0.06	20	\$4	49%	0
Large Retail	Space Heat	Boiler - Pipe Insulation	Code (2" of Insulation)	Existing Insulation (1" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.26	20	\$15	15%	0
Large Retail	Space Heat	Boiler - Turbulators	Boiler Turbulator	No Turbulator	Per Tube	Existing	6.25	20	\$15	55%	216
Large Retail	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	Existing	928	10	\$2,060	64%	756
Large Retail	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	New	856	10	\$2,060	77%	15
Large Retail	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Large Retail	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Large Retail	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	Existing	1,219	5	\$9,117	75%	0
Large Retail	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	New	1,123	5	\$9,117	75%	0
Large Retail	Space Heat	Direct Digital Control System-Installation	DDC Retrofit - EMS Upgrade	Pneumatic	Per Building	Existing	1,219	5	\$16,201	85%	0
Large Retail	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Large Retail	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Large Retail	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	38
Large Retail	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	1
Large Retail	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	57
Large Retail	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	835	10	\$5,450	64%	0
Large Retail	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	770	10	\$5,450	64%	0
Large Retail	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.11	100%	0
Large Retail	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.11	100%	0
Large Retail	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.18	100%	0
Large Retail	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.18	100%	0
Large Retail	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.25	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Large Retail	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.25	100%	0
Large Retail	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.33	100%	617
Large Retail	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.33	100%	28
Large Retail	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Large Retail	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Large Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Large Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Large Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Large Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Large Retail	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.48	13	\$0.38	9%	0
Large Retail	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.50	13	\$0.38	9%	166
Large Retail	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	Existing	1,200	13	\$502	3%	15
Large Retail	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	New	1,200	13	\$502	3%	0
Large Retail	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.20	20	\$2	15%	160
Large Retail	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Large Retail	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Large Retail	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Large Retail	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	164	15	\$1,100	0%	0
Large Retail	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	152	15	\$1,036	0%	0
Large Retail	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Large Retail	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Large Retail	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.05	7	\$0.29	90%	1,601
Large Retail	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	3,772
Large Retail	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	278	15	\$138	88%	0
Large Retail	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	293	15	\$138	88%	74
Large Retail	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBtu	Existing	0.45	3	\$0.75	48%	9
Large Retail	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	0.48	3	\$0.75	48%	28
Large Retail	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.04	15	\$3	65%	0
Large Retail	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtuH Boiler	Existing	73	12	\$318	21%	0
Large Retail	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	59%	0
Large Retail	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	66%	0
Large Retail	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	11%	0
Large Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	4%	0
Large Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	5%	0
Large Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	4%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Large Retail	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	14%	0
Large Retail	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	14%	0
Large Retail	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	12%	0
Large Retail	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	12%	0
Large Retail	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	146	14	\$442	1%	1
Large Retail	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	146	14	\$442	1%	0
Large Retail	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	100	14	\$307	1%	1
Large Retail	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	100	14	\$307	1%	0
Large Retail	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	793	40	\$833	60%	1,227
Large Retail	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	792	40	\$666	83%	26
Large Retail	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	41	10	\$4	63%	0
Large Retail	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	447	15	\$2,985	0%	0
Large Retail	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	447	15	\$3,049	0%	0
Large Retail	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	Existing	18	5	\$39	51%	0
Large Retail	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	New	18	5	\$39	51%	0
Large Retail	Water Heat	Low-Flow Spray Heads	1.6 GPM (Code)	Existing Spray Head (2.5 GPM)	Per Spray Head	Existing	27	5	\$30	33%	0
Large Retail	Water Heat	Refrigeration with Heat Recovery	Heat Recovery from Refrigeration System. Applied to Water Heating Electric End Use	No Heat Recovery	Per sqft	Existing	0.04	16	\$0.91	50%	0
Large Retail	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	16	10	\$196	81%	0
Large Retail	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	16	10	\$196	81%	0
Large Retail	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.02	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.02	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.04	100%	0
Large Retail	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.04	100%	0
Large Retail	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	9	13	\$2	52%	0
Large Retail	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Large Retail	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Large Retail	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	158	7	\$62	5%	0
Large Retail	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.01	100%	1,368
Large Retail	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.01	100%	42
Large Retail	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	540	4	\$102	50%	215
Lodging	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	Existing	657	10	\$200	27%	1
Lodging	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	New	657	10	\$200	27%	0
Lodging	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	Existing	305	12	\$400	49%	0
Lodging	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	New	305	12	\$400	49%	0
Lodging	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	Existing	2,460	10	\$2,696	4%	1
Lodging	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	New	2,535	10	\$2,696	4%	0
Lodging	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	Existing	0.00	12	\$0.00	100%	0
Lodging	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	New	0.00	12	\$0.00	100%	0
Lodging	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	Existing	504	12	\$1,057	32%	1
Lodging	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	New	504	12	\$1,057	32%	0
Lodging	Cooking	Griddle	High-Efficiency Griddle (40% Efficient)	Standard Griddle (32% Efficient)	Per Griddle	Existing	148	12	\$1,165	34%	0
Lodging	Cooking	Griddle	High-Efficiency Griddle (40% Efficient)	Standard Griddle (32% Efficient)	Per Griddle	New	148	12	\$1,165	34%	0
Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	Existing	1,066	12	\$2,075	11%	1
Lodging	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	New	1,066	12	\$2,075	11%	0
Lodging	Dryer	Dryer - High Efficiency	High Efficiency Dryer	Standard Dryer	Per Building SqFt	Existing	0.00	12	\$0.82	10%	0
Lodging	Dryer	Dryer - High Efficiency	High Efficiency Dryer	Standard Dryer	Per Building SqFt	New	0.00	12	\$0.82	10%	0
Lodging	Dryer	Dryer - Standard	Standard Dryer	Standard Dryer	Per Building SqFt	Existing	0.00	12	\$0.82	100%	0
Lodging	Dryer	Dryer - Standard	Standard Dryer	Standard Dryer	Per Building SqFt	New	0.00	12	\$0.82	100%	0
Lodging	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Lodging	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Lodging	Pool Heat	Pool Heater - Standard Equipment	Standard Pool Heater Equipment	Standard Pool Heater Equipment	Per Building SqFt	Existing	0.00	5	\$0.00	100%	0
Lodging	Pool Heat	Pool Heater - Standard Equipment	Standard Pool Heater Equipment	Standard Pool Heater Equipment	Per Building SqFt	New	0.00	5	\$0.00	100%	0
Lodging	Pool Heat	Spa Covers	R-14	No cover	Per Spa Area	Existing	13	6	\$14	33%	0
Lodging	Pool Heat	Spa Covers	R-14	No cover	Per Spa Area	New	13	6	\$14	33%	0
Lodging	Pool Heat	Swimming Pool Covers	Transparent	No Cover	Per Pool Area	Existing	5.20	5	\$1	33%	33
Lodging	Pool Heat	Swimming Pool Covers	Transparent	No Cover	Per Pool Area	New	5.20	5	\$1	33%	1
Lodging	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.01	20	\$0.05	100%	0
Lodging	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	New	0.01	20	\$0.05	100%	0
Lodging	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	Existing	0.02	20	\$0.13	100%	0
Lodging	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	New	0.02	20	\$0.13	100%	0
Lodging	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	Existing	0.05	20	\$0.27	100%	0
Lodging	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	New	0.05	20	\$0.27	100%	0
Lodging	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	Existing	0.06	20	\$0.38	100%	0
Lodging	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	New	0.06	20	\$0.38	100%	0
Lodging	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	Existing	0.07	20	\$0.44	100%	143
Lodging	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	New	0.07	20	\$0.44	100%	6
Lodging	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Lodging	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Boiler - Economizer	Economizer	No Economizer	Per Boiler HP	Existing	89	20	\$96	75%	0
Lodging	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.15	20	\$4	49%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Lodging	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	New	0.14	20	\$4	49%	0
Lodging	Space Heat	Boiler - Pipe Insulation	Code (2" of Insulation)	Existing Insulation (1" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.59	20	\$15	15%	0
Lodging	Space Heat	Boiler - Turbulators	Boiler Turbulator	No Turbulator	Per Tube	Existing	6.55	20	\$15	55%	0
Lodging	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	Existing	1,946	10	\$2,060	64%	0
Lodging	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	New	1,854	10	\$2,060	77%	3
Lodging	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.05	7	\$1	90%	0
Lodging	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.06	7	\$1	90%	0
Lodging	Space Heat	Demand Controlled Ventilation	Demand Controlled Ventilation - DCV (Occupancy Sensors / CO2 Sensors)	Constant Ventilation	Per Sensor	Existing	71	15	\$450	16%	97
Lodging	Space Heat	Demand Controlled Ventilation	Demand Controlled Ventilation - DCV (Occupancy Sensors / CO2 Sensors)	Constant Ventilation	Per Sensor	Existing	72	15	\$450	16%	51
Lodging	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	Existing	1,277	5	\$14,651	75%	0
Lodging	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	New	1,216	5	\$14,651	75%	0
Lodging	Space Heat	Direct Digital Control System-Installation	DDC Retrofit - EMS Upgrade	Pneumatic	Per Building	Existing	1,277	5	\$26,479	85%	0
Lodging	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Lodging	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Lodging	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	2
Lodging	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	0
Lodging	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	876	10	\$5,450	64%	0
Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	893	10	\$5,450	64%	0
Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	834	10	\$5,450	64%	0
Lodging	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	890	10	\$5,450	64%	0
Lodging	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.01	20	\$0.06	100%	0
Lodging	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.01	20	\$0.06	100%	0
Lodging	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.04	20	\$0.10	100%	0
Lodging	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.04	20	\$0.10	100%	0
Lodging	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.14	100%	0
Lodging	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.14	100%	0
Lodging	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.19	100%	54
Lodging	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.19	100%	3
Lodging	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Lodging	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Lodging	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Lodging	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Lodging	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.04	30	\$10	74%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Lodging	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.04	30	\$10	74%	0
Lodging	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.32	13	\$0.38	9%	0
Lodging	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.33	13	\$0.38	9%	0
Lodging	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	Existing	3,504	13	\$502	3%	2
Lodging	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	New	3,504	13	\$502	3%	0
Lodging	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.25	20	\$2	15%	0
Lodging	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Lodging	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Lodging	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Lodging	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	Existing	368	15	\$130	0%	0
Lodging	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	New	350	15	\$124	0%	0
Lodging	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Lodging	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Lodging	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.07	7	\$0.29	90%	337
Lodging	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.07	7	\$0.29	90%	175
Lodging	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	97	15	\$138	0%	0
Lodging	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	99	15	\$138	0%	0
Lodging	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBtu	Existing	1.02	3	\$0.75	48%	3
Lodging	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	1.04	3	\$0.75	48%	1
Lodging	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtu Boiler	Existing	163	12	\$318	21%	0
Lodging	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	53%	0
Lodging	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	59%	0
Lodging	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	10%	0
Lodging	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	12%	0
Lodging	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	14%	0
Lodging	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	12%	0
Lodging	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	Existing	315	10	\$5,944	33%	0
Lodging	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	New	314	10	\$5,944	33%	0
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	86	11	\$789	56%	0
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	86	11	\$789	56%	0
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	62	11	\$391	53%	20

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	62	11	\$391	53%	0
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	69	11	\$565	50%	23
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	69	11	\$565	50%	0
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	53	11	\$134	47%	3
Lodging	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	53	11	\$134	47%	0
Lodging	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	62%	0
Lodging	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	62%	0
Lodging	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	52%	0
Lodging	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	52%	0
Lodging	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	299	14	\$442	20%	8
Lodging	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	299	14	\$442	20%	0
Lodging	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	204	14	\$307	24%	7
Lodging	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	204	14	\$307	24%	0
Lodging	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	372	40	\$833	60%	240
Lodging	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	371	40	\$666	83%	6
Lodging	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	8.14	10	\$4	63%	0
Lodging	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	11,190	15	\$3,955	0%	0
Lodging	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	11,190	15	\$3,961	0%	0
Lodging	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	Existing	14	10	\$8	84%	0
Lodging	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	New	14	10	\$8	84%	0
Lodging	Water Heat	Low-Flow Showerheads	2.5 GPM Showerhead (Federal Code)	Existing Showerhead (4.5 GPM)	Per Showerhead	Existing	32	10	\$31	34%	147
Lodging	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	Existing	18	5	\$39	38%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Lodging	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	New	18	5	\$39	38%	0
Lodging	Water Heat	Low-Flow Spray Heads	1.6 GPM (Code)	Existing Spray Head (2.5 GPM)	Per Spray Head	Existing	27	5	\$30	25%	0
Lodging	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	3.25	10	\$196	81%	0
Lodging	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	3.25	10	\$196	81%	0
Lodging	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.02	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.02	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Lodging	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.09	13	\$0.08	100%	0
Lodging	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.09	13	\$0.08	100%	0
Lodging	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	6.26	13	\$2	52%	0
Lodging	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Lodging	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	74	7	\$62	5%	0
Lodging	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.09	13	\$0.03	100%	276
Lodging	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.09	13	\$0.03	100%	9
Lodging	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	253	4	\$102	35%	-54
Other Commercial	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	Existing	657	10	\$200	14%	0
Other Commercial	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	New	657	10	\$200	14%	0
Other Commercial	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	Existing	152	12	\$400	75%	4
Other Commercial	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	New	152	12	\$400	75%	0
Other Commercial	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	Existing	202	10	\$2,696	4%	0
Other Commercial	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	New	208	10	\$2,696	4%	0
Other Commercial	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	Existing	0.00	12	\$0.00	100%	0
Other Commercial	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	New	0.00	12	\$0.00	100%	0
Other Commercial	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	Existing	252	12	\$1,057	18%	2
Other Commercial	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	New	252	12	\$1,057	18%	0
Other Commercial	Cooking	Griddle	High-Efficiency Griddle (40% Efficient)	Standard Griddle (32% Efficient)	Per Griddle	Existing	74	12	\$1,165	15%	0
Other Commercial	Cooking	Griddle	High-Efficiency Griddle (40% Efficient)	Standard Griddle (32% Efficient)	Per Griddle	New	74	12	\$1,165	15%	0
Other Commercial	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	Existing	533	12	\$2,075	11%	3
Other Commercial	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	New	533	12	\$2,075	11%	0
Other Commercial	Dryer	Dryer - High Efficiency	High Efficiency Dryer	Standard Dryer	Per Building SqFt	Existing	0.00	12	\$0.30	10%	0
Other Commercial	Dryer	Dryer - High Efficiency	High Efficiency Dryer	Standard Dryer	Per Building SqFt	New	0.00	12	\$0.30	10%	0
Other Commercial	Dryer	Dryer - Standard	Standard Dryer	Standard Dryer	Per Building SqFt	Existing	0.00	12	\$0.30	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Other Commercial	Dryer	Dryer - Standard	Standard Dryer	Standard Dryer	Per Building SqFt	New	0.00	12	\$0.30	100%	0
Other Commercial	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Other Commercial	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Other Commercial	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.01	20	\$0.08	100%	0
Other Commercial	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.08	100%	0
Other Commercial	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	Existing	0.02	20	\$0.23	100%	0
Other Commercial	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	New	0.02	20	\$0.23	100%	0
Other Commercial	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	Existing	0.04	20	\$0.47	100%	0
Other Commercial	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	New	0.04	20	\$0.47	100%	0
Other Commercial	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	Existing	0.06	20	\$0.66	100%	0
Other Commercial	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	New	0.05	20	\$0.66	100%	0
Other Commercial	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	Existing	0.07	20	\$0.75	100%	0
Other Commercial	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	New	0.06	20	\$0.75	100%	0
Other Commercial	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Other Commercial	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Boiler - Economizer	Economizer	No Economizer	Per Boiler HP	Existing	7.50	20	\$86	41%	0
Other Commercial	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.08	20	\$4	49%	0
Other Commercial	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	New	0.07	20	\$4	49%	0
Other Commercial	Space Heat	Boiler - Pipe Insulation	Code (2" of Insulation)	Existing Insulation (1" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.31	20	\$15	15%	0
Other Commercial	Space Heat	Boiler - Turbulators	Boiler Turbulator	No Turbulator	Per Tube	Existing	1.46	20	\$15	55%	0
Other Commercial	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	Existing	435	10	\$2,060	64%	0
Other Commercial	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	New	401	10	\$2,060	77%	0
Other Commercial	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.05	7	\$1	90%	0
Other Commercial	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.05	7	\$1	90%	0
Other Commercial	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	Existing	285	5	\$4,375	20%	0
Other Commercial	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	New	263	5	\$4,375	20%	0
Other Commercial	Space Heat	Direct Digital Control System-Installation	DDC Retrofit - EMS Upgrade	Pneumatic	Per Building	Existing	285	5	\$7,393	85%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Other Commercial	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Other Commercial	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Other Commercial	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	144
Other Commercial	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	2
Other Commercial	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	55
Other Commercial	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	195	10	\$5,450	64%	0
Other Commercial	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	206	10	\$5,450	64%	0
Other Commercial	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	179	10	\$5,450	64%	0
Other Commercial	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	180	10	\$5,450	64%	0
Other Commercial	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.11	100%	0
Other Commercial	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.11	100%	0
Other Commercial	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.18	100%	0
Other Commercial	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.18	100%	0
Other Commercial	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.25	100%	0
Other Commercial	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.25	100%	0
Other Commercial	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.08	20	\$0.33	100%	1,114
Other Commercial	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.33	100%	40
Other Commercial	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Other Commercial	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Other Commercial	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Other Commercial	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Other Commercial	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Other Commercial	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.04	30	\$10	74%	0
Other Commercial	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.31	13	\$0.38	9%	0
Other Commercial	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.33	13	\$0.38	9%	310

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Other Commercial	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	Existing	1,542	13	\$502	3%	57
Other Commercial	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	New	1,542	13	\$502	3%	1
Other Commercial	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.24	20	\$2	15%	196
Other Commercial	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Other Commercial	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Other Commercial	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Other Commercial	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	195	15	\$390	0%	0
Other Commercial	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	180	15	\$362	0%	0
Other Commercial	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Other Commercial	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Other Commercial	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	0
Other Commercial	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.07	7	\$0.29	90%	7,068
Other Commercial	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	130	15	\$138	76%	0
Other Commercial	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	137	15	\$138	76%	61
Other Commercial	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBTU	Existing	0.54	3	\$0.75	48%	0
Other Commercial	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBTU	Existing	0.57	3	\$0.75	48%	52
Other Commercial	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.05	15	\$3	65%	1,708
Other Commercial	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtuH Boiler	Existing	87	12	\$318	21%	0
Other Commercial	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	31%	0
Other Commercial	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	35%	0
Other Commercial	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	6%	0
Other Commercial	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	41%	0
Other Commercial	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	46%	0
Other Commercial	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	40%	0
Other Commercial	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	Existing	49	10	\$5,944	2%	0
Other Commercial	Water Heat	Clothes Washer	Commercial Ozonating Clothes Washer	Standard Commercial Clothes Washer	Per Clothes Washer	New	49	10	\$5,944	2%	0
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	86	11	\$789	14%	0
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	86	11	\$789	14%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	62	11	\$391	13%	883
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	62	11	\$391	13%	11
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	69	11	\$565	13%	622
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	69	11	\$565	13%	11
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	53	11	\$134	12%	710
Other Commercial	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	53	11	\$134	12%	9
Other Commercial	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	10%	0
Other Commercial	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	10%	0
Other Commercial	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	8%	0
Other Commercial	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	8%	0
Other Commercial	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	192	14	\$442	0%	6
Other Commercial	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	192	14	\$442	0%	0
Other Commercial	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	131	14	\$307	0%	5
Other Commercial	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	131	14	\$307	0%	0
Other Commercial	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	410	40	\$833	60%	2,245
Other Commercial	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	409	40	\$666	83%	41
Other Commercial	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	12	10	\$4	63%	0
Other Commercial	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	Existing	1,853	15	\$3,695	0%	0
Other Commercial	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuH Boiler	New	1,853	15	\$3,723	0%	0
Other Commercial	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	Existing	25	10	\$8	13%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Other Commercial	Water Heat	Low-Flow Showerheads	2.0 GPM	2.5 GPM Showerhead (Federal Code)	Per Showerhead	New	25	10	\$8	13%	1
Other Commercial	Water Heat	Low-Flow Showerheads	2.5 GPM Showerhead (Federal Code)	Existing Showerhead (4.5 GPM)	Per Showerhead	Existing	57	10	\$31	5%	0
Other Commercial	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	Existing	18	5	\$39	8%	0
Other Commercial	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	New	18	5	\$39	8%	0
Other Commercial	Water Heat	Low-Flow Spray Heads	1.6 GPM (Code)	Existing Spray Head (2.5 GPM)	Per Spray Head	Existing	27	5	\$30	5%	0
Other Commercial	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	5.13	10	\$196	90%	0
Other Commercial	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	5.12	10	\$196	90%	0
Other Commercial	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.02	13	\$0.01	100%	0
Other Commercial	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.02	13	\$0.01	100%	0
Other Commercial	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.05	13	\$0.13	100%	0
Other Commercial	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.05	13	\$0.13	100%	0
Other Commercial	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	2.56	13	\$2	52%	0
Other Commercial	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Other Commercial	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	82	7	\$62	5%	0
Other Commercial	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.06	13	\$0.05	100%	2,234
Other Commercial	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.06	13	\$0.05	100%	56
Other Commercial	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	279	4	\$102	35%	275
Restaurant	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	Existing	657	10	\$200	41%	0
Restaurant	Cooking	Broiler	Cooking Broiler 34% Efficient	15% Efficient	Per Broiler	New	657	10	\$200	41%	0
Restaurant	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	Existing	305	12	\$400	75%	9
Restaurant	Cooking	Convection Oven	ENERGY STAR Convection Oven	Standard Oven	Per Convection Oven	New	305	12	\$400	75%	0
Restaurant	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	Existing	3,356	10	\$2,696	13%	143
Restaurant	Cooking	Conveyor Oven	High-Efficiency Model (23% Efficient)	15% Efficient	Per Conveyor Oven	New	3,462	10	\$2,696	13%	3
Restaurant	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	Existing	0.00	12	\$0.00	100%	0
Restaurant	Cooking	Cooking - Standard Equipment	Standard Cooking Equipment	Standard Cooking Equipment	Per Building SqFt	New	0.00	12	\$0.00	100%	0
Restaurant	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	Existing	504	12	\$1,057	32%	106
Restaurant	Cooking	Fryer	ENERGY STAR Fryer	Standard	Per Fryer	New	504	12	\$1,057	32%	2
Restaurant	Cooking	Griddle	High-Efficiency Griddle (40% Efficient)	Standard Griddle (32% Efficient)	Per Griddle	Existing	148	12	\$1,165	56%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Restaurant	Cooking	Giddle	High-Efficiency Giddle (40% Efficient)	Standard Giddle (32% Efficient)	Per Giddle	New	148	12	\$1,165	56%	0
Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	Existing	1,066	12	\$2,075	26%	187
Restaurant	Cooking	Steam Cooker	ENERGY STAR Steam Cooker	Standard	Per Steam Cooker	New	1,066	12	\$2,075	26%	4
Restaurant	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Restaurant	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Restaurant	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Restaurant	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Restaurant	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Restaurant	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	4
Restaurant	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	0
Restaurant	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	Existing	99	10	\$5,450	64%	0
Restaurant	Space Heat	Exhaust Hood Makeup Air	Provide Makeup Air Directly at Exhaust Hood Instead of Pulling Conditioned Air	Hood Pulls Conditioned Air (No Make-up Air)	Per Building	New	66	10	\$5,450	64%	0
Restaurant	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.12	100%	0
Restaurant	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.04	20	\$0.12	100%	0
Restaurant	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.19	100%	0
Restaurant	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.04	20	\$0.19	100%	0
Restaurant	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.08	20	\$0.27	100%	0
Restaurant	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.27	100%	0
Restaurant	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.09	20	\$0.36	100%	36
Restaurant	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.36	100%	1
Restaurant	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Restaurant	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Restaurant	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Restaurant	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Restaurant	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Restaurant	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Restaurant	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.38	13	\$0.38	51%	56
Restaurant	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	Existing	1,600	13	\$502	3%	0
Restaurant	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	New	1,600	13	\$502	3%	0
Restaurant	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.25	20	\$2	15%	2
Restaurant	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Restaurant	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Restaurant	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Restaurant	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Restaurant	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Restaurant	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.07	7	\$0.29	90%	218

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Restaurant	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	66	15	\$138	76%	0
Restaurant	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	0.56	3	\$0.75	48%	2
Restaurant	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	6%	0
Restaurant	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	7%	0
Restaurant	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	1%	0
Restaurant	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	74%	0
Restaurant	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	82%	0
Restaurant	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	72%	0
Restaurant	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	29%	0
Restaurant	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	29%	0
Restaurant	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	24%	0
Restaurant	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	24%	0
Restaurant	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	576	14	\$442	52%	294
Restaurant	Water Heat	Dishwasher	High Temp Commercial High Efficiency Dishwasher (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	576	14	\$442	52%	5
Restaurant	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	Existing	393	14	\$307	62%	115
Restaurant	Water Heat	Dishwasher	Low-Temp Commercial Dishwasher (Includes Extra Chemical Cost) - (ENERGY STAR)	Standard High Temp Commercial Dishwasher	Per Dishwasher	New	393	14	\$307	62%	2
Restaurant	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	187	40	\$833	60%	283
Restaurant	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	187	40	\$666	83%	7
Restaurant	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	14	10	\$4	63%	0
Restaurant	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	Existing	18	5	\$39	80%	0
Restaurant	Water Heat	Low-Flow Spray Heads	1.0 GPM	1.6 GPM (Code)	Per Spray Head	New	18	5	\$39	80%	0
Restaurant	Water Heat	Low-Flow Spray Heads	1.6 GPM (Code)	Existing Spray Head (2.5 GPM)	Per Spray Head	Existing	27	5	\$30	52%	0
Restaurant	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	17	10	\$196	71%	0
Restaurant	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	17	10	\$196	71%	0
Restaurant	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.08	13	\$0.03	100%	0
Restaurant	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.08	13	\$0.03	100%	0
Restaurant	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.00	100%	0
Restaurant	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.00	100%	0
Restaurant	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Restaurant	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Restaurant	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.17	13	\$0.31	100%	0
Restaurant	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.17	13	\$0.31	100%	0
Restaurant	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	2.93	13	\$2	52%	0
Restaurant	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Restaurant	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Restaurant	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	37	7	\$62	5%	0
Restaurant	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.18	13	\$0.13	100%	321
Restaurant	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.18	13	\$0.13	100%	11
Restaurant	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	127	4	\$102	80%	79
Small Office	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Small Office	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Small Office	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Small Office	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Small Office	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Small Office	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	24
Small Office	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	0
Small Office	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Small Office	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.11	100%	0
Small Office	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.11	100%	0
Small Office	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.18	100%	0
Small Office	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.18	100%	0
Small Office	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.24	100%	0
Small Office	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.24	100%	0
Small Office	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.32	100%	169
Small Office	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.32	100%	7
Small Office	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Small Office	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Small Office	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Small Office	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Small Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.04	30	\$10	74%	0
Small Office	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Small Office	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.30	13	\$0.38	51%	263
Small Office	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	Existing	1,040	13	\$502	3%	19
Small Office	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	New	1,040	13	\$502	3%	0
Small Office	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.22	20	\$2	15%	9
Small Office	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Small Office	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Small Office	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Small Office	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Small Office	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Small Office	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	1,029
Small Office	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	71	15	\$138	79%	0
Small Office	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	0.54	3	\$0.75	48%	8
Small Office	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.05	15	\$3	62%	0
Small Office	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	9%	0
Small Office	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	10%	0
Small Office	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	2%	0
Small Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	70%	0
Small Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	78%	0
Small Office	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	68%	0
Small Office	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	29%	0
Small Office	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	29%	0
Small Office	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	24%	0
Small Office	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	24%	0
Small Office	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	133	40	\$833	60%	239
Small Office	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	133	40	\$666	83%	5
Small Office	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	20	10	\$4	63%	0
Small Office	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	8.36	10	\$196	81%	0
Small Office	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	8.34	10	\$196	81%	0
Small Office	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.01	100%	0
Small Office	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.01	100%	0
Small Office	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Small Office	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Small Office	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Small Office	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Small Office	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.18	100%	0
Small Office	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.18	100%	0
Small Office	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	0.83	13	\$2	52%	0
Small Office	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Small Office	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Small Office	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	26	7	\$62	5%	0
Small Office	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.07	100%	268

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Small Office	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.07	100%	8
Small Office	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	91	4	\$102	35%	29
Small Retail	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Small Retail	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Small Retail	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.04	7	\$1	90%	0
Small Retail	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Small Retail	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Small Retail	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	20
Small Retail	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	0
Small Retail	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Small Retail	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.14	100%	0
Small Retail	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.14	100%	0
Small Retail	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.23	100%	0
Small Retail	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.23	100%	0
Small Retail	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.32	100%	0
Small Retail	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.32	100%	0
Small Retail	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.42	100%	133
Small Retail	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.42	100%	6
Small Retail	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Small Retail	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Small Retail	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Small Retail	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Small Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Small Retail	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Small Retail	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.35	13	\$0.38	51%	159
Small Retail	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	Existing	1,200	13	\$502	3%	4
Small Retail	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBTU Unit Heater	New	1,200	13	\$502	3%	0
Small Retail	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.20	20	\$2	15%	4
Small Retail	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Small Retail	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Small Retail	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Small Retail	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Small Retail	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Small Retail	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	832
Small Retail	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	72	15	\$138	88%	0
Small Retail	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBTU	Existing	0.38	3	\$0.75	48%	0
Small Retail	Space Heat	Variable Air-Volume Systems	Install Variable Air-Volume System	Constant Volume System	Per Sqft	Existing	0.04	15	\$3	65%	176
Small Retail	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	9%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Small Retail	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	10%	0
Small Retail	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	2%	0
Small Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	70%	0
Small Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	78%	0
Small Retail	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	68%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer Enhanced Efficiency MEF = 3.10 and WF = 3.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	86	11	\$789	5%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	62	11	\$391	4%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 2 MEF = 2.2 and WF = 4.5	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	62	11	\$391	4%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	69	11	\$565	4%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer CEE Tier 3 MEF = 2.4 and WF = 4.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	69	11	\$565	4%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	Existing	53	11	\$134	4%	0
Small Retail	Water Heat	Clothes Washer	Residential Grade, Clothes Washer ENERGY STAR MEF = 2.0 and WF = 6.0	Standard Clothes Washer MEF = 1.26 and WF = 9.5 (Federal Standard)	Per Clothes Washer	New	53	11	\$134	4%	0
Small Retail	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	5%	0
Small Retail	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	5%	0
Small Retail	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	4%	0
Small Retail	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	4%	0
Small Retail	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	196	40	\$833	60%	187
Small Retail	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	195	40	\$666	83%	4
Small Retail	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	30	10	\$4	63%	0
Small Retail	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	12	10	\$196	81%	0
Small Retail	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	12	10	\$196	81%	0
Small Retail	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.02	13	\$0.01	100%	0
Small Retail	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.02	13	\$0.01	100%	0
Small Retail	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Small Retail	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Small Retail	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Small Retail	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Small Retail	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.16	100%	0
Small Retail	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.16	100%	0
Small Retail	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	1.22	13	\$2	52%	0
Small Retail	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Small Retail	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Small Retail	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	39	7	\$62	5%	0
Small Retail	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.04	13	\$0.07	100%	210
Small Retail	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.04	13	\$0.07	100%	6
Small Retail	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	133	4	\$102	35%	23
Warehouse	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Warehouse	Other	Other - Standard	Standard Other Equipment	Standard Other Equipment	Per Building SqFt	New	0.00	10	\$0.00	100%	0
Warehouse	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.06	100%	0
Warehouse	Space Heat	Boiler - 2013 Federal Standard	2013 Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.06	100%	0
Warehouse	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	Existing	0.01	20	\$0.16	100%	0
Warehouse	Space Heat	Boiler - 85% AFUE	Boiler - 85% AFUE	Standard Boiler	Per Building SqFt	New	0.01	20	\$0.16	100%	0
Warehouse	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	Existing	0.03	20	\$0.33	100%	47
Warehouse	Space Heat	Boiler - 90% AFUE	Boiler - 90% AFUE	Standard Boiler	Per Building SqFt	New	0.03	20	\$0.33	100%	0
Warehouse	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	Existing	0.04	20	\$0.48	100%	0
Warehouse	Space Heat	Boiler - 94% AFUE	Boiler - 94% AFUE	Standard Boiler	Per Building SqFt	New	0.04	20	\$0.48	100%	0
Warehouse	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	Existing	0.05	20	\$0.54	100%	252
Warehouse	Space Heat	Boiler - 96% AFUE	Boiler - 96% AFUE	Standard Boiler	Per Building SqFt	New	0.05	20	\$0.54	100%	12
Warehouse	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Warehouse	Space Heat	Boiler - Below Standard	Below Standard Boiler	Below Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Boiler - Economizer	Economizer	No Economizer	Per Boiler HP	Existing	14	20	\$86	75%	0
Warehouse	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Boiler - Federal Standard	Standard Boiler	Standard Boiler	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.08	20	\$4	49%	0
Warehouse	Space Heat	Boiler - Pipe Insulation	Above Code (3" of Insulation)	Code (2" of Insulation)	Per Linear Foot of Boiler Pipe	New	0.07	20	\$4	49%	0
Warehouse	Space Heat	Boiler - Pipe Insulation	Code (2" of Insulation)	Existing Insulation (1" of Insulation)	Per Linear Foot of Boiler Pipe	Existing	0.31	20	\$15	15%	0
Warehouse	Space Heat	Boiler - Turbulators	Boiler Turbulator	No Turbulator	Per Tube	Existing	3.93	20	\$15	55%	94
Warehouse	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	Existing	585	10	\$2,060	64%	329
Warehouse	Space Heat	Boiler Reset Controls	Boiler Reset Controls	No Boiler Reset Controls	Per Control	New	561	10	\$2,060	77%	6
Warehouse	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.03	7	\$1	90%	0
Warehouse	Space Heat	Commissioning	Commissioning/QI - New Installation	No Commissioning	Per SqFt	New	0.05	7	\$1	90%	0
Warehouse	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	Existing	767	5	\$3,122	75%	0
Warehouse	Space Heat	Direct Digital Control System - Optimization	DDC Optimization	Standard DDC	Per Building	New	737	5	\$3,122	75%	0
Warehouse	Space Heat	Direct Digital Control System-Installation	DDC Retrofit - EMS Upgrade	Pneumatic	Per Building	Existing	767	5	\$5,067	85%	0
Warehouse	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	Existing	20	20	\$477	75%	0
Warehouse	Space Heat	Doors	U-Factor = 0.10	Standard Door (U-Factor = 0.55)	Per Door	New	20	20	\$477	75%	0
Warehouse	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	Existing	9	20	\$60	61%	71
Warehouse	Space Heat	Doors	U-Factor = 0.35	Standard Door (U-Factor = 0.55)	Per Door	New	9	20	\$60	61%	1

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Warehouse	Space Heat	Duct Repair And Sealing	Reduction In Duct Losses to 5%	No Repair or Sealing, 15% duct losses	Per Building SqFt	Existing	0.01	18	\$0.23	38%	0
Warehouse	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.05	20	\$0.08	100%	0
Warehouse	Space Heat	Furnace - 2013 Standard	2013 Standard Furnace	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.08	100%	0
Warehouse	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.13	100%	0
Warehouse	Space Heat	Furnace - 92% AFUE	Furnace - 92% AFUE	Standard Furnace	Per Building SqFt	New	0.05	20	\$0.13	100%	0
Warehouse	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	Existing	0.06	20	\$0.18	100%	0
Warehouse	Space Heat	Furnace - 94% AFUE	Furnace - 94% AFUE	Standard Furnace	Per Building SqFt	New	0.06	20	\$0.18	100%	0
Warehouse	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	Existing	0.07	20	\$0.24	100%	785
Warehouse	Space Heat	Furnace - 96% AFUE	Furnace - 96% AFUE	Standard Furnace	Per Building SqFt	New	0.07	20	\$0.24	100%	32
Warehouse	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	Existing	0.00	10	\$0.00	100%	0
Warehouse	Space Heat	Furnace - Below Standard	Below Standard Furnace	Below Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	Existing	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Furnace - Standard	Standard Furnace	Standard Furnace	Per Building SqFt	New	0.00	20	\$0.00	100%	0
Warehouse	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Warehouse	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	Existing	0.03	30	\$10	74%	0
Warehouse	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Warehouse	Space Heat	Green Roof	Ecoroof, Vegetated Roof System	Standard Roof	Per Roof Area SqFt	New	0.03	30	\$10	74%	0
Warehouse	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.71	13	\$0.38	9%	0
Warehouse	Space Heat	Infiltration Control	Weather-Stripping	Standard Practice	Per Window SqFt	Existing	0.89	13	\$0.38	9%	211
Warehouse	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	Existing	1,320	13	\$502	3%	4
Warehouse	Space Heat	Infrared Heater	Infrared Heater - Gas Radiant Heating	Standard Unit Heater	Per 1000 kBtu Unit Heater	New	1,320	13	\$502	3%	0
Warehouse	Space Heat	Insulation - Duct	New Duct Insulation (R-8) (Unconditioned Spaces)	No Insulation	Per Surface Area of Duct	Existing	0.21	20	\$2	15%	210
Warehouse	Space Heat	Insulation - Floor	R-30	Average Existing Insulation (R-10)	Per Floor Area SqFt	Existing	0.02	25	\$1	29%	0
Warehouse	Space Heat	Insulation - Roof	R-20ci	Average Existing Insulation (R-10)	Per Roof Area SqFt	Existing	0.01	25	\$1	12%	0
Warehouse	Space Heat	Insulation - Wall	R-13+R-7.5ci	Average Existing Insulation (R-10)	Per Wall Area SqFt	Existing	0.04	25	\$1	32%	0
Warehouse	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	Existing	197	15	\$1,689	0%	0
Warehouse	Space Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtu Boiler	New	189	15	\$1,649	0%	0
Warehouse	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	Existing	0.00	15	\$0.00	100%	0
Warehouse	Space Heat	Other Space Heat - Standard Equipment	Standard Equipment Other Space Heat	Standard Equipment Other Space Heat	Per Building SqFt	New	0.00	15	\$0.00	100%	0
Warehouse	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.05	7	\$0.29	90%	328
Warehouse	Space Heat	Retro-Commissioning	Retro-Commissioning	No Retro-Commissioning	Per SqFt	Existing	0.06	7	\$0.29	90%	4,774
Warehouse	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	175	15	\$138	92%	0
Warehouse	Space Heat	Thermostat Programmable	Setback Thermostat 5-1-1, 5-2 or 7-day	Manual Thermostat	Per Thermostat	Existing	220	15	\$138	92%	97
Warehouse	Space Heat	Tune-up - Boiler Maintenance	Boiler Maintenance (Tune-up)	Unmaintained Boiler	Per kBtu	Existing	0.54	3	\$0.75	48%	64
Warehouse	Space Heat	Tune-up - Furnace Maintenance	Furnace Maintenance (Tune-up)	Unmaintained Furnace	Per kBtu	Existing	0.68	3	\$0.75	48%	42
Warehouse	Space Heat	Vent Damper	Automatic Air Flue Damper	No Damper	Per 200 kBtu Boiler	Existing	87	12	\$318	21%	0
Warehouse	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	Existing	0.08	25	\$3	53%	0
Warehouse	Space Heat	Window - Metal Framing	U-Value = 0.45	U-Value = 0.55 (Code Metal Framing)	Per Window SqFt	New	0.08	25	\$3	59%	0
Warehouse	Space Heat	Window - Metal Framing	U-Value = 0.55 (Code Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.08	25	\$27	10%	0

Table A.3.4. Commercial Gas Measure Details

Segment	End Use	Measure Name	Measure Description	Baseline Description	Unit Description	Construction Vintage	Savings per Unit (Therm)	Measure Life	Incremental Cost per Unit	Measure Applicability	2023 Economic Potential (Thousand Therms)
Warehouse	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	Existing	0.05	25	\$2	12%	0
Warehouse	Space Heat	Window - Non-Metal Framing	U-Value = 0.30	U-Value = 0.35 (Code Non-Metal Framing)	Per Window SqFt	New	0.05	25	\$2	14%	0
Warehouse	Space Heat	Window - Non-Metal Framing	U-Value = 0.35 (Code Non-Metal Framing)	Existing Windows U = 0.67	Per Window SqFt	Existing	0.27	25	\$42	12%	0
Warehouse	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	4.26	11	\$1,067	10%	0
Warehouse	Water Heat	Dishwasher	Dishwasher Enhanced Efficiency (EF 1.00) 200 kWh/yr and 4.00 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	4.26	11	\$1,067	10%	0
Warehouse	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	Existing	1.88	11	\$272	8%	0
Warehouse	Water Heat	Dishwasher	ENERGY STAR 295 kWh/yr and 4.25 Gallons/Cycle	Federal Standard 355 kWh/yr and 6.5 Gallons/Cycle = 307 kWh/yr and = 5.0 Gallons/Cycle for July 1, 2011 - Dec 31, 2011	Per Dishwasher	New	1.88	11	\$272	8%	0
Warehouse	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	Existing	798	40	\$833	60%	769
Warehouse	Water Heat	Drainwater Heat Recovery	Install Power-Pipe or GFX System	No GFX or Power-Pipe System	Per 40 Gal Water Heater	New	796	40	\$666	83%	15
Warehouse	Water Heat	Faucet Aerator	0.5 GPM	Existing Aerator (3.0 GPM)	Per Aerator	Existing	41	10	\$4	63%	0
Warehouse	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuh Boiler	Existing	279	15	\$2,396	0%	0
Warehouse	Water Heat	Integrated Space Heating and Water Heating	Integrated System	Separate Boiler and Water Heater	Per 200 kBtuh Boiler	New	279	15	\$2,436	0%	0
Warehouse	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	Existing	24	10	\$196	90%	0
Warehouse	Water Heat	Ultrasonic Faucet Control	Install Ultrasonic Faucet Control	No Faucet Control	Per Faucet	New	24	10	\$196	90%	0
Warehouse	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	Existing	0.01	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - 0.67 EF	Water Heater - 0.67 EF	Standard Water Heater	Per Building SqFt	New	0.01	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - 2015 Standard	2015 Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	Existing	0.00	6	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - Below Standard	Below Standard Water Heater	Below Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.03	100%	0
Warehouse	Water Heat	Water Heater - Condensing 0.80 EF	Water Heater - Condensing 0.80 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.03	100%	0
Warehouse	Water Heat	Water Heater - Pipe Insulation	Hot Water Pipe Insulation (R-4)	No Pipe Insulation	Per Linear Foot	Existing	4.98	13	\$2	52%	0
Warehouse	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	Existing	0.00	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - Standard	Standard Water Heater	Standard Water Heater	Per Building SqFt	New	0.00	13	\$0.00	100%	0
Warehouse	Water Heat	Water Heater - Tank Blanket/Insulation	Install Insulation (R-11)	No Tank Insulation	Per Water Heater	Existing	159	7	\$62	5%	0
Warehouse	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	Existing	0.03	13	\$0.01	100%	862
Warehouse	Water Heat	Water Heater - Tankless 0.82 EF	Water Heater - Tankless 0.82 EF	Standard Water Heater	Per Building SqFt	New	0.03	13	\$0.01	100%	24
Warehouse	Water Heat	Water Heater - Thermostat Setback	Install Programmable Thermostat (120 Degrees)	No Thermostat Setback (130 Degrees)	Per Water Heater	Existing	542	4	\$102	35%	94

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Agriculture	Fans	Agricultural Exhaust Fans (Rate 21 CFM/Watt+)	Per Unit	Existing	5%	20	\$0.25	1,043
Agriculture	Fans	Circulating Fans	Per Unit	Existing	5%	10	\$0.12	1,069
Agriculture	Fans	High Volume Low Speed Fans	Per Unit	Existing	47%	25	\$1	5,756
Agriculture	Fans	High-Efficiency Ventilation System	Per Unit	Existing	6%	10	\$1	0
Agriculture	HVAC	Energy-Efficient Dehumidifier	Per Unit	Existing	2%	15	\$0.85	416
Agriculture	HVAC	Heat Reclaimer	Per Unit	Existing	42%	15	\$0.13	305
Agriculture	HVAC	Heat Recovery Ventilators	Per Unit	Existing	4%	10	\$0.35	875
Agriculture	HVAC	Infrared Film for Greenhouses	Per Unit	Existing	11%	4	\$0.20	13
Agriculture	HVAC	Programmable Ventilation Controller	Per Unit	Existing	0%	10	\$0.11	21
Agriculture	HVAC	Scroll Compressor	Per Unit	Existing	8%	15	\$0.80	53
Agriculture	Motors Other	Automatic Milker Takeoff	Per Unit	Existing	3%	15	\$0.60	36
Agriculture	Motors Other	VFDs on Small Milking Machines	Per Unit	Existing	3%	15	\$0.66	39
Agriculture	Motors Other	Variable Speed Drives for Dairy Vacuum Pumps	Per Unit	Existing	37%	15	\$0.13	446
Agriculture	Other	Block Heater Timer	Per Unit	Existing	3%	10	\$0.03	197
Agriculture	Other	Grain bin aeration control systems	Per Unit	Existing	2%	20	\$0.13	106
Agriculture	Other	Grain bin aeration control systems	Per Unit	Existing	2%	20	\$0.13	69
Agriculture	Other	Greenhouse Heat Curtain	Per Unit	Existing	17%	5	\$0.04	15
Agriculture	Other	High Efficiency Stock tank	Per Unit	Existing	4%	10	\$0.33	261
Agriculture	Other	Livestock Waterers	Per Unit	Existing	11%	10	\$0.26	803
Agriculture	Process Heat	Crate Heating Pads	Per Unit	Existing	18%	15	\$0.14	1,706
Agriculture	Process Heat	Grain dryers	Per Unit	Existing	24%	20	\$6	0
Agriculture	Process Heat	Heat Lamp Setback (Microzone)	Per Unit	Existing	0%	15	\$0.17	42
Agriculture	Process Heat	Heat Lamp/Heating Pad Controller	Per Unit	Existing	2%	15	\$0.10	171
Agriculture	Process Heat	Heat Lamps	Per Unit	Existing	3%	10	\$0.01	333
Agriculture	Process Refrig and Cooling	Milk Precooler - Dairy Plate Cooler	Per Unit	Existing	3%	15	\$0.52	8
Agriculture	Pumps	Low Pressure Irrigation	Per Unit	Existing	50%	10	\$0.78	30
Chemical Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Chemical Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	151
Chemical Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	305
Chemical Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	302
Chemical Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	738
Chemical Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	11,537
Chemical Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Chemical Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	52
Chemical Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	2,210
Chemical Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	242
Chemical Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	1,630
Chemical Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	778
Chemical Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	1,500
Chemical Mfg	HVAC	Clean Room: Change Filter Strategy	Per Unit	Existing	40%	1	\$0.00	3,970
Chemical Mfg	HVAC	Clean Room: Chiller Optimize	Per Unit	Existing	15%	10	\$0.08	3,928
Chemical Mfg	HVAC	Clean Room: Clean Room HVAC	Per Unit	Existing	9%	20	\$0.16	2,541
Chemical Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Chemical Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Chemical Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Chemical Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	1,298
Chemical Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	454
Chemical Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	26
Chemical Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	3,603
Chemical Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Chemical Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Chemical Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	13,574

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Chemical Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Chemical Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	2,123
Chemical Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Chemical Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	374
Chemical Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	755
Chemical Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	693
Chemical Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,671
Chemical Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	6,162
Chemical Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Chemical Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	3,493
Chemical Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	116
Chemical Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	1,878
Chemical Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	547
Chemical Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	3,291
Chemical Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Chemical Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	55
Chemical Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	20,230
Chemical Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	23,479
Chemical Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	3,670
Chemical Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	18,827
Chemical Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	7,672
Chemical Mfg	Process Refrig and Cooling	Defrost Control System	Per Unit	Existing	7%	15	\$0.08	4,056
Chemical Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	2,358
Chemical Mfg	Process Refrig and Cooling	Evaporator Fan Controller	Per Unit	Existing	5%	16	\$0.08	2,897
Chemical Mfg	Process Refrig and Cooling	Freezer-Cooler Replacement Gaskets	Per Unit	Existing	4%	4	\$0.08	153
Chemical Mfg	Process Refrig and Cooling	Insulation for Bare Suction Lines	Per Unit	Existing	1%	10	\$0.96	0
Chemical Mfg	Process Refrig and Cooling	Mechanical Subcoolers	Per Unit	Existing	0%	15	\$0.35	327
Chemical Mfg	Process Refrig and Cooling	Strip Curtains for Walk-Ins	Per Unit	Existing	4%	4	\$0.18	350
Chemical Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	413
Chemical Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	5,441
Chemical Mfg	Process Refrig and Cooling	Variable Speed Compressor Systems	Per Unit	Existing	10%	15	\$0.22	5,848
Chemical Mfg	Process Refrig and Cooling	Walk-in PSC to ECM	Per Unit	Existing	5%	10	\$0.48	58
Chemical Mfg	Process Refrig and Cooling	Walk-in Shaded Pole to ECM	Per Unit	Existing	7%	10	\$0.48	52
Chemical Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Chemical Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	347
Chemical Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	714
Chemical Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	708
Chemical Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,672
Chemical Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	26,073
Chemical Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Chemical Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	117
Chemical Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	3,979
Chemical Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	923
Electrical Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Electrical Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	10
Electrical Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	12
Electrical Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	12
Electrical Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	30
Electrical Equipment Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	458
Electrical Equipment Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Electrical Equipment Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	1
Electrical Equipment Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	88

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Electrical Equipment Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	10
Electrical Equipment Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	65
Electrical Equipment Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	113
Electrical Equipment Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	220
Electrical Equipment Mfg	HVAC	Clean Room: Change Filter Strategy	Per Unit	Existing	40%	1	\$0.00	579
Electrical Equipment Mfg	HVAC	Clean Room: Chiller Optimize	Per Unit	Existing	15%	10	\$0.08	576
Electrical Equipment Mfg	HVAC	Clean Room: Clean Room HVAC	Per Unit	Existing	9%	20	\$0.16	368
Electrical Equipment Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Electrical Equipment Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Electrical Equipment Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Electrical Equipment Mfg	HVAC	Solidstate Chiller	Per Unit	Existing	90%	10	\$0.50	2,238
Electrical Equipment Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	189
Electrical Equipment Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	88
Electrical Equipment Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	8
Electrical Equipment Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	701
Electrical Equipment Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Electrical Equipment Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Electrical Equipment Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	2,640
Electrical Equipment Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Electrical Equipment Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	413
Electrical Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Electrical Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	25
Electrical Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	30
Electrical Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	28
Electrical Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	67
Electrical Equipment Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	248
Electrical Equipment Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Electrical Equipment Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	140
Electrical Equipment Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	3
Electrical Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	75
Electrical Equipment Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	22
Electrical Equipment Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	132
Electrical Equipment Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Electrical Equipment Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	5
Electrical Equipment Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	734
Electrical Equipment Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	949
Electrical Equipment Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	134
Electrical Equipment Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	689
Electrical Equipment Mfg	Process Other	Elec Chip Fab: Eliminate Exhaust	Per Unit	Existing	5%	10	\$0.18	128
Electrical Equipment Mfg	Process Other	Elec Chip Fab: Exhaust Injector	Per Unit	Existing	100%	10	\$0.45	1,075
Electrical Equipment Mfg	Process Other	Elec Chip Fab: Reduce Gas Pressure	Per Unit	Existing	10%	10	\$0.00	0
Electrical Equipment Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	228
Electrical Equipment Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	71
Electrical Equipment Mfg	Process Refrig and Cooling	Floating Head Pressure Controller	Per Unit	Existing	9%	15	\$0.07	209
Electrical Equipment Mfg	Process Refrig and Cooling	Floating Suction Pressure Controller	Per Unit	Existing	1%	15	\$0.07	32
Electrical Equipment Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	16
Electrical Equipment Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	152
Electrical Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Electrical Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	22
Electrical Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	27
Electrical Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	27
Electrical Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	64

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Electrical Equipment Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	1,037
Electrical Equipment Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Electrical Equipment Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	3
Electrical Equipment Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	152
Electrical Equipment Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	37
Fabricated Metal Products	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Fabricated Metal Products	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	64
Fabricated Metal Products	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	84
Fabricated Metal Products	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	74
Fabricated Metal Products	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	181
Fabricated Metal Products	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Fabricated Metal Products	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	13
Fabricated Metal Products	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	542
Fabricated Metal Products	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	58
Fabricated Metal Products	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	400
Fabricated Metal Products	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	339
Fabricated Metal Products	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	660
Fabricated Metal Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Fabricated Metal Products	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Fabricated Metal Products	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Fabricated Metal Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	569
Fabricated Metal Products	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	280
Fabricated Metal Products	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	24
Fabricated Metal Products	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	2,217
Fabricated Metal Products	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Fabricated Metal Products	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Fabricated Metal Products	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	8,352
Fabricated Metal Products	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Fabricated Metal Products	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,306
Fabricated Metal Products	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Fabricated Metal Products	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	180
Fabricated Metal Products	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	236
Fabricated Metal Products	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	211
Fabricated Metal Products	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	510
Fabricated Metal Products	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Fabricated Metal Products	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,057
Fabricated Metal Products	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	36
Fabricated Metal Products	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	568
Fabricated Metal Products	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	165
Fabricated Metal Products	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	1,024
Fabricated Metal Products	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Fabricated Metal Products	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	17
Fabricated Metal Products	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	2,195
Fabricated Metal Products	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	401
Fabricated Metal Products	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	2,057
Fabricated Metal Products	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	1,071
Fabricated Metal Products	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	330
Fabricated Metal Products	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	58
Fabricated Metal Products	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	720
Fabricated Metal Products	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Fabricated Metal Products	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	115
Fabricated Metal Products	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	154

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Fabricated Metal Products	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	136
Fabricated Metal Products	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	322
Fabricated Metal Products	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Fabricated Metal Products	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	23
Fabricated Metal Products	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	867
Fabricated Metal Products	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	188
Food Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Food Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	386
Food Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	363
Food Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	360
Food Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	880
Food Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	13,414
Food Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Food Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	82
Food Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	2,635
Food Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	293
Food Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	1,944
Food Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	2,800
Food Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	5,397
Food Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Food Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Food Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Food Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	4,672
Food Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	2,149
Food Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	259
Food Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	17,036
Food Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Food Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Food Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	64,179
Food Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Food Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	10,036
Food Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Food Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	2,140
Food Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	2,012
Food Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	1,847
Food Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	4,455
Food Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	16,422
Food Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Food Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	9,311
Food Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	427
Food Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	5,008
Food Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	1,458
Food Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	9,105
Food Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Food Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	231
Food Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	9,484
Food Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	12,258
Food Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,733
Food Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	8,904
Food Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	45,936
Food Mfg	Process Refrig and Cooling	Defrost Control System	Per Unit	Existing	7%	15	\$0.08	57,682
Food Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	14,176

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Food Mfg	Process Refrig and Cooling	Evaporator Fan Controller	Per Unit	Existing	5%	16	\$0.08	44,573
Food Mfg	Process Refrig and Cooling	Floating Head Pressure Controller	Per Unit	Existing	9%	15	\$0.07	85,076
Food Mfg	Process Refrig and Cooling	Floating Suction Pressure Controller	Per Unit	Existing	1%	15	\$0.07	12,781
Food Mfg	Process Refrig and Cooling	Freezer-Cooler Replacement Gaskets	Per Unit	Existing	4%	4	\$0.08	3,117
Food Mfg	Process Refrig and Cooling	Insulation for Bare Suction Lines	Per Unit	Existing	1%	10	\$0.96	0
Food Mfg	Process Refrig and Cooling	Mechanical Subcoolers	Per Unit	Existing	0%	15	\$0.35	1,105
Food Mfg	Process Refrig and Cooling	Strip Curtains for Walk-Ins	Per Unit	Existing	4%	4	\$0.18	7,098
Food Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	2,789
Food Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	34,281
Food Mfg	Process Refrig and Cooling	Variable Speed Compressor Systems	Per Unit	Existing	10%	15	\$0.22	81,379
Food Mfg	Process Refrig and Cooling	Walk-in PSC to ECM	Per Unit	Existing	5%	10	\$0.48	1,177
Food Mfg	Process Refrig and Cooling	Walk-in Shaded Pole to ECM	Per Unit	Existing	7%	10	\$0.48	3,263
Food Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Food Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	843
Food Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	807
Food Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	801
Food Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,890
Food Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	30,384
Food Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Food Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	186
Food Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	4,497
Food Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	1,103
Furniture Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Furniture Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	5
Furniture Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	21
Furniture Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	19
Furniture Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	46
Furniture Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Furniture Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	2
Furniture Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	137
Furniture Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	15
Furniture Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	101
Furniture Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	138
Furniture Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	266
Furniture Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Furniture Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Furniture Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Furniture Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	230
Furniture Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	128
Furniture Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	3
Furniture Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	1,015
Furniture Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Furniture Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Furniture Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	3,822
Furniture Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Furniture Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	598
Furniture Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Furniture Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	14
Furniture Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	57
Furniture Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	51
Furniture Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	123
Furniture Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Furniture Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	269
Furniture Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	6
Furniture Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	145
Furniture Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	42
Furniture Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	260
Furniture Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Furniture Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	8
Furniture Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	574
Furniture Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	104
Furniture Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	536
Furniture Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	23
Furniture Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	7
Furniture Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	11
Furniture Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	15
Furniture Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Furniture Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	9
Furniture Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	39
Furniture Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	35
Furniture Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	82
Furniture Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Furniture Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	4
Furniture Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	210
Furniture Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	48
Industrial Machinery	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Industrial Machinery	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	90
Industrial Machinery	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	283
Industrial Machinery	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	280
Industrial Machinery	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	686
Industrial Machinery	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	10,272
Industrial Machinery	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Industrial Machinery	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	69
Industrial Machinery	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	2,053
Industrial Machinery	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	224
Industrial Machinery	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	1,515
Industrial Machinery	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	3,060
Industrial Machinery	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	6,053
Industrial Machinery	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Industrial Machinery	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Industrial Machinery	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Industrial Machinery	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	5,194
Industrial Machinery	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	1,764
Industrial Machinery	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	63
Industrial Machinery	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	13,989
Industrial Machinery	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Industrial Machinery	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Industrial Machinery	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	52,699
Industrial Machinery	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Industrial Machinery	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	8,241
Industrial Machinery	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Industrial Machinery	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	274
Industrial Machinery	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	864
Industrial Machinery	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	794

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Industrial Machinery	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,916
Industrial Machinery	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	7,055
Industrial Machinery	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Industrial Machinery	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	4,004
Industrial Machinery	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	195
Industrial Machinery	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	2,153
Industrial Machinery	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	626
Industrial Machinery	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	3,881
Industrial Machinery	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Industrial Machinery	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	83
Industrial Machinery	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	8,315
Industrial Machinery	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	10,520
Industrial Machinery	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,517
Industrial Machinery	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	7,794
Industrial Machinery	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	4,333
Industrial Machinery	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	1,326
Industrial Machinery	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	200
Industrial Machinery	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	2,928
Industrial Machinery	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Industrial Machinery	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	163
Industrial Machinery	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	524
Industrial Machinery	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	520
Industrial Machinery	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,228
Industrial Machinery	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	19,272
Industrial Machinery	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Industrial Machinery	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	129
Industrial Machinery	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	2,922
Industrial Machinery	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	711
Instruments	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Instruments	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	91
Instruments	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	56
Instruments	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	50
Instruments	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	122
Instruments	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Instruments	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	6
Instruments	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	365
Instruments	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	40
Instruments	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	269
Instruments	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	1,054
Instruments	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	2,031
Instruments	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Instruments	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Instruments	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Instruments	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	1,758
Instruments	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	381
Instruments	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	69
Instruments	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	3,018
Instruments	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Instruments	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Instruments	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	11,370
Instruments	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Instruments	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,778

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Instruments	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Instruments	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	178
Instruments	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	111
Instruments	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	99
Instruments	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	239
Instruments	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Instruments	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	495
Instruments	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	11
Instruments	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	266
Instruments	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	77
Instruments	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	480
Instruments	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Instruments	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	47
Instruments	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	298
Instruments	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	54
Instruments	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	279
Instruments	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	685
Instruments	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	217
Instruments	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	114
Instruments	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	453
Instruments	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Instruments	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	144
Instruments	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	91
Instruments	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	80
Instruments	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	190
Instruments	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Instruments	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	9
Instruments	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	512
Instruments	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	111
Mining	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Mining	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	222
Mining	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	446
Mining	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	409
Mining	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	988
Mining	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	3,639
Mining	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Mining	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	2,064
Mining	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	47
Mining	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	1,110
Mining	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	323
Mining	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	1,963
Mining	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Mining	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	3
Mining	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	6
Mining	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	5
Mining	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	12
Mining	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Mining	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	1
Mining	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	33
Mining	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	7
Miscellaneous Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Miscellaneous Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	10

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Miscellaneous Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	26
Miscellaneous Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	25
Miscellaneous Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	62
Miscellaneous Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	931
Miscellaneous Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Miscellaneous Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	3
Miscellaneous Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	186
Miscellaneous Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	20
Miscellaneous Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	137
Miscellaneous Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	383
Miscellaneous Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	739
Miscellaneous Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Miscellaneous Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Miscellaneous Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Miscellaneous Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	640
Miscellaneous Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	227
Miscellaneous Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	10
Miscellaneous Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	1,801
Miscellaneous Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Miscellaneous Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Miscellaneous Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	6,786
Miscellaneous Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Miscellaneous Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,061
Miscellaneous Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Miscellaneous Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	43
Miscellaneous Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	111
Miscellaneous Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	102
Miscellaneous Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	246
Miscellaneous Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	914
Miscellaneous Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Miscellaneous Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	513
Miscellaneous Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	12
Miscellaneous Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	276
Miscellaneous Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	80
Miscellaneous Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	498
Miscellaneous Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Miscellaneous Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	15
Miscellaneous Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	611
Miscellaneous Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	773
Miscellaneous Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	111
Miscellaneous Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	572
Miscellaneous Mfg	Process Other	Cleaners: Professional Wet Cleaning	Per Unit	Existing	29%	15	\$7	0
Miscellaneous Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	439
Miscellaneous Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	45
Miscellaneous Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	24
Miscellaneous Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	97
Miscellaneous Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Miscellaneous Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	6
Miscellaneous Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	15
Miscellaneous Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	15
Miscellaneous Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	35
Miscellaneous Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	549

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Miscellaneous Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Miscellaneous Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	2
Miscellaneous Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	83
Miscellaneous Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	20
Nonmetallic Mineral Products	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Nonmetallic Mineral Products	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	152
Nonmetallic Mineral Products	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	204
Nonmetallic Mineral Products	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	202
Nonmetallic Mineral Products	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	496
Nonmetallic Mineral Products	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	7,432
Nonmetallic Mineral Products	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Nonmetallic Mineral Products	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	23
Nonmetallic Mineral Products	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	1,485
Nonmetallic Mineral Products	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	162
Nonmetallic Mineral Products	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	1,096
Nonmetallic Mineral Products	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	515
Nonmetallic Mineral Products	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	992
Nonmetallic Mineral Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Nonmetallic Mineral Products	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Nonmetallic Mineral Products	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Nonmetallic Mineral Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	859
Nonmetallic Mineral Products	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	369
Nonmetallic Mineral Products	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	31
Nonmetallic Mineral Products	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	2,924
Nonmetallic Mineral Products	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Nonmetallic Mineral Products	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Nonmetallic Mineral Products	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	11,015
Nonmetallic Mineral Products	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Nonmetallic Mineral Products	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,723
Nonmetallic Mineral Products	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Nonmetallic Mineral Products	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	466
Nonmetallic Mineral Products	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	625
Nonmetallic Mineral Products	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	574
Nonmetallic Mineral Products	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,386
Nonmetallic Mineral Products	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	5,104
Nonmetallic Mineral Products	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Nonmetallic Mineral Products	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	2,895
Nonmetallic Mineral Products	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	66
Nonmetallic Mineral Products	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	1,557
Nonmetallic Mineral Products	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	453
Nonmetallic Mineral Products	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	2,807
Nonmetallic Mineral Products	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Nonmetallic Mineral Products	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	40
Nonmetallic Mineral Products	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	6,013
Nonmetallic Mineral Products	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	7,608
Nonmetallic Mineral Products	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,097
Nonmetallic Mineral Products	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	5,636
Nonmetallic Mineral Products	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	1,369
Nonmetallic Mineral Products	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	774
Nonmetallic Mineral Products	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	135
Nonmetallic Mineral Products	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	1,658
Nonmetallic Mineral Products	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Nonmetallic Mineral Products	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	277
Nonmetallic Mineral Products	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	379
Nonmetallic Mineral Products	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	376
Nonmetallic Mineral Products	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	888
Nonmetallic Mineral Products	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	13,942
Nonmetallic Mineral Products	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Nonmetallic Mineral Products	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	44
Nonmetallic Mineral Products	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	2,114
Nonmetallic Mineral Products	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	514
Paper Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Paper Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	468
Paper Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	390
Paper Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	386
Paper Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	977
Paper Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	14,126
Paper Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Paper Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	94
Paper Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	6,957
Paper Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	309
Paper Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	2,157
Paper Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	383
Paper Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	758
Paper Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Paper Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Paper Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Paper Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	651
Paper Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	309
Paper Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	42
Paper Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	2,446
Paper Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Paper Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Paper Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	9,216
Paper Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Paper Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,441
Paper Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Paper Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	1,022
Paper Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	882
Paper Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	789
Paper Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,905
Paper Mfg	Motors Other	Material Handling	Per Unit	Existing	13%	10	\$0.64	6,222
Paper Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Paper Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	3,981
Paper Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	192
Paper Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	2,140
Paper Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	623
Paper Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	3,841
Paper Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Paper Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	30
Paper Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	2,363
Paper Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	3,009
Paper Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	431
Paper Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	2,216

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Paper Mfg	Process Other	Efficient Agitator	Per Unit	Existing	50%	10	\$0.08	715
Paper Mfg	Process Other	Effluent Treatment System	Per Unit	Existing	15%	10	\$0.07	145
Paper Mfg	Process Other	Mech Pulp: Premium Process	Per Unit	Existing	0%	5	\$0.11	4
Paper Mfg	Process Other	Mech Pulp: Refiner Plate Improvement	Per Unit	Existing	0%	1	\$0.03	15
Paper Mfg	Process Other	Mech Pulp: Refiner Replacement	Per Unit	Existing	10%	12	\$0.58	237
Paper Mfg	Process Other	Paper: Efficient Pulp Screen	Per Unit	Existing	15%	10	\$0.18	202
Paper Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	2,117
Paper Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	362
Paper Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	114
Paper Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	781
Paper Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Paper Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	791
Paper Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	673
Paper Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	668
Paper Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,578
Paper Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	23,937
Paper Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Paper Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	160
Paper Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	3,751
Paper Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	887
Plastics Rubber Products	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Plastics Rubber Products	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	193
Plastics Rubber Products	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	218
Plastics Rubber Products	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	192
Plastics Rubber Products	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	471
Plastics Rubber Products	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Plastics Rubber Products	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	22
Plastics Rubber Products	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	1,409
Plastics Rubber Products	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	154
Plastics Rubber Products	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	1,040
Plastics Rubber Products	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	920
Plastics Rubber Products	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	1,773
Plastics Rubber Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Plastics Rubber Products	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Plastics Rubber Products	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Plastics Rubber Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	1,535
Plastics Rubber Products	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	643
Plastics Rubber Products	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	64
Plastics Rubber Products	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	5,095
Plastics Rubber Products	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Plastics Rubber Products	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Plastics Rubber Products	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	19,195
Plastics Rubber Products	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Plastics Rubber Products	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	3,002
Plastics Rubber Products	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Plastics Rubber Products	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	544
Plastics Rubber Products	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	614
Plastics Rubber Products	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	549
Plastics Rubber Products	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,325
Plastics Rubber Products	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Plastics Rubber Products	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	2,747
Plastics Rubber Products	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	63

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Plastics Rubber Products	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	1,500
Plastics Rubber Products	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	430
Plastics Rubber Products	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	2,663
Plastics Rubber Products	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Plastics Rubber Products	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	52
Plastics Rubber Products	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	5,705
Plastics Rubber Products	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,035
Plastics Rubber Products	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	5,348
Plastics Rubber Products	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	4,925
Plastics Rubber Products	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	1,518
Plastics Rubber Products	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	265
Plastics Rubber Products	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	3,314
Plastics Rubber Products	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Plastics Rubber Products	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	349
Plastics Rubber Products	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	401
Plastics Rubber Products	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	354
Plastics Rubber Products	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	836
Plastics Rubber Products	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Plastics Rubber Products	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	42
Plastics Rubber Products	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	2,254
Plastics Rubber Products	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	488
Primary Metal Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Primary Metal Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	265
Primary Metal Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	622
Primary Metal Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	616
Primary Metal Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	1,508
Primary Metal Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	23,514
Primary Metal Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Primary Metal Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	134
Primary Metal Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	4,516
Primary Metal Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	494
Primary Metal Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	3,331
Primary Metal Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	1,490
Primary Metal Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	2,891
Primary Metal Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Primary Metal Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Primary Metal Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Primary Metal Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	2,497
Primary Metal Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	1,282
Primary Metal Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	62
Primary Metal Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	10,161
Primary Metal Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Primary Metal Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Primary Metal Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	38,279
Primary Metal Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Primary Metal Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	5,986
Primary Metal Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Primary Metal Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	1,177
Primary Metal Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	2,764
Primary Metal Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	2,538
Primary Metal Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	6,125
Primary Metal Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	22,575

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Primary Metal Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Primary Metal Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	12,799
Primary Metal Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	538
Primary Metal Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	6,883
Primary Metal Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	2,004
Primary Metal Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	12,069
Primary Metal Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Primary Metal Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	86
Primary Metal Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	14,974
Primary Metal Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	19,571
Primary Metal Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	2,738
Primary Metal Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	14,071
Primary Metal Mfg	Process Heat	New Arc Furnace	Per Unit	Existing	45%	10	\$0.09	65,664
Primary Metal Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	441
Primary Metal Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	633
Primary Metal Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	110
Primary Metal Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	1,337
Primary Metal Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Primary Metal Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	150
Primary Metal Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	360
Primary Metal Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	357
Primary Metal Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	843
Primary Metal Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	13,839
Primary Metal Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Primary Metal Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	79
Primary Metal Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	2,006
Primary Metal Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	491
Printing Related Support	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Printing Related Support	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	49
Printing Related Support	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	118
Printing Related Support	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	104
Printing Related Support	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	254
Printing Related Support	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Printing Related Support	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	12
Printing Related Support	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	761
Printing Related Support	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	83
Printing Related Support	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	562
Printing Related Support	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	841
Printing Related Support	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	1,620
Printing Related Support	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Printing Related Support	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Printing Related Support	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Printing Related Support	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	1,402
Printing Related Support	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	475
Printing Related Support	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	22
Printing Related Support	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	3,762
Printing Related Support	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Printing Related Support	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Printing Related Support	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	14,174
Printing Related Support	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Printing Related Support	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	2,217
Printing Related Support	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Printing Related Support	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	138
Printing Related Support	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	329
Printing Related Support	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	294
Printing Related Support	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	710
Printing Related Support	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Printing Related Support	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	1,484
Printing Related Support	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	34
Printing Related Support	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	799
Printing Related Support	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	232
Printing Related Support	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	1,439
Printing Related Support	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Printing Related Support	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	45
Printing Related Support	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	3,083
Printing Related Support	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	563
Printing Related Support	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	2,890
Printing Related Support	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	1,112
Printing Related Support	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	140
Printing Related Support	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	293
Printing Related Support	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Printing Related Support	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	90
Printing Related Support	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	218
Printing Related Support	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	193
Printing Related Support	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	455
Printing Related Support	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Printing Related Support	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	22
Printing Related Support	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	1,218
Printing Related Support	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	264
Street Lighting	Lighting	LED Traffic Light - Amber (20 Watts)	Per Unit	Existing	0%	8	\$6	0
Street Lighting	Lighting	LED Traffic Light - Don't Walk 12"	Per Unit	Existing	29%	8	\$0.10	27,828
Street Lighting	Lighting	LED Traffic Light - Don't Walk 8"	Per Unit	Existing	13%	8	\$0.23	8,114
Street Lighting	Lighting	LED Traffic Light - Green 10" or 12"	Per Unit	Existing	12%	8	\$0.22	8,420
Street Lighting	Lighting	LED Traffic Light - Green 8"	Per Unit	Existing	5%	8	\$0.51	0
Street Lighting	Lighting	LED Traffic Light - Green Arrow	Per Unit	Existing	2%	8	\$1	0
Street Lighting	Lighting	LED Traffic Light - Red 10" or 12"	Per Unit	Existing	16%	8	\$0.08	17,640
Street Lighting	Lighting	LED Traffic Light - Red 8"	Per Unit	Existing	7%	8	\$0.17	5,488
Street Lighting	Lighting	LED Traffic Light - Red Arrow (7 Watts)	Per Unit	Existing	7%	8	\$0.18	5,110
Street Lighting	Lighting	Streetlight - HPS 100W to LED 62W	Per Unit	Existing	9%	8	\$1	0
Street Lighting	Lighting	Streetlight - HPS 150W to LED 113W	Per Unit	Existing	7%	8	\$1	0
Street Lighting	Lighting	Streetlight - HPS 200W to LED 120W	Per Unit	Existing	9%	8	\$0.68	0
Street Lighting	Lighting	Streetlight - HPS 250W to LED 150W	Per Unit	Existing	8%	8	\$0.61	0
Street Lighting	Lighting	Streetlight - HPS 400W to LED 225W	Per Unit	Existing	9%	8	\$0.36	1,635
Street Lighting	Lighting	Streetlight - HPS 70W to LED 42W	Per Unit	Existing	9%	8	\$1	0
Transportation Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Transportation Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	15
Transportation Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	32
Transportation Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	32
Transportation Equipment Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	78
Transportation Equipment Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	1,161
Transportation Equipment Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Transportation Equipment Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	8
Transportation Equipment Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	232
Transportation Equipment Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	25

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Transportation Equipment Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	171
Transportation Equipment Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	423
Transportation Equipment Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	814
Transportation Equipment Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Transportation Equipment Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Transportation Equipment Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Transportation Equipment Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	705
Transportation Equipment Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	282
Transportation Equipment Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	15
Transportation Equipment Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	2,234
Transportation Equipment Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Transportation Equipment Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Transportation Equipment Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	8,417
Transportation Equipment Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Transportation Equipment Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	1,316
Transportation Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Transportation Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	36
Transportation Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	77
Transportation Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	71
Transportation Equipment Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	171
Transportation Equipment Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	628
Transportation Equipment Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Transportation Equipment Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	357
Transportation Equipment Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	17
Transportation Equipment Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	192
Transportation Equipment Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	56
Transportation Equipment Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	346
Transportation Equipment Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Transportation Equipment Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	19
Transportation Equipment Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	1,896
Transportation Equipment Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	2,399
Transportation Equipment Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	346
Transportation Equipment Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	1,777
Transportation Equipment Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	529
Transportation Equipment Mfg	Process Refrig and Cooling	Desuperheaters	Per Unit	Existing	3%	14	\$0.60	166
Transportation Equipment Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	52
Transportation Equipment Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	352
Transportation Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Transportation Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	33
Transportation Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	71
Transportation Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	71
Transportation Equipment Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	168
Transportation Equipment Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	2,628
Transportation Equipment Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Transportation Equipment Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	18
Transportation Equipment Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	398
Transportation Equipment Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	97
Wood Product Mfg	Fans	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Wood Product Mfg	Fans	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	20
Wood Product Mfg	Fans	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	51
Wood Product Mfg	Fans	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	50
Wood Product Mfg	Fans	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	123

Table A.3.5. Industrial Electric Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year KWh Saved	2023 Economic Potential (MWh)
Wood Product Mfg	Fans	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	1,842
Wood Product Mfg	Fans	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Wood Product Mfg	Fans	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	12
Wood Product Mfg	Fans	Premium Fan	Per Unit	Existing	20%	10	\$0.18	369
Wood Product Mfg	Fans	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	40
Wood Product Mfg	Fans	Variable Speed Drive Control	Per Unit	Existing	14%	10	\$0.18	272
Wood Product Mfg	HVAC	Chiller Air Cooled	Per Unit	Existing	4%	20	\$0.19	73
Wood Product Mfg	HVAC	Chiller Water-Cooled	Per Unit	Existing	9%	20	\$0.19	143
Wood Product Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$4	0
Wood Product Mfg	HVAC	Heat Pump - Ground Source	Per Unit	Existing	32%	15	\$11	0
Wood Product Mfg	HVAC	Package Terminal	Per Unit	Existing	0%	9	\$1	0
Wood Product Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.36	123
Wood Product Mfg	Lighting	Exit Sign - LED	Per Unit	Existing	2%	11	\$0.42	90
Wood Product Mfg	Lighting	Exit Sign - Photoluminescent	Per Unit	Existing	0%	13	\$0.85	4
Wood Product Mfg	Lighting	Lighting - CFL Packages	Per Unit	Existing	8%	2	\$0.00	713
Wood Product Mfg	Lighting	Lighting - Fluorescent High Performance Packages	Per Unit	Existing	4%	7	\$2	0
Wood Product Mfg	Lighting	Lighting - Fluorescent Reduced Wattage Packages	Per Unit	Existing	9%	5	\$0.90	0
Wood Product Mfg	Lighting	Lighting - High Bay Fluorescent High Output Packages	Per Unit	Existing	49%	6	\$0.09	2,686
Wood Product Mfg	Lighting	Lighting - High Intensity Discharge Packages	Per Unit	Existing	10%	5	\$0.46	0
Wood Product Mfg	Lighting	Lighting - LED Lamp Packages	Per Unit	Existing	10%	11	\$0.22	420
Wood Product Mfg	Motors Other	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Wood Product Mfg	Motors Other	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	53
Wood Product Mfg	Motors Other	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	133
Wood Product Mfg	Motors Other	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	122
Wood Product Mfg	Motors Other	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	295
Wood Product Mfg	Motors Other	Material Handling	Per Unit	Existing	5%	10	\$0.46	1,092
Wood Product Mfg	Motors Other	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Wood Product Mfg	Motors Other	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	617
Wood Product Mfg	Motors Other	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	28
Wood Product Mfg	Motors Other	Replace Pneumatic Conveyor	Per Unit	Existing	29%	10	\$0.01	7,270
Wood Product Mfg	Motors Other	Switch from Belt drive to Direct Drive	Per Unit	Existing	8%	12	\$0.21	332
Wood Product Mfg	Motors Other	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	96
Wood Product Mfg	Motors Other	Variable Speed Drive Control	Per Unit	Existing	13%	10	\$0.20	596
Wood Product Mfg	Other	Power Quality-Improving Appliances	Per Unit	Existing	0%	20	\$2	0
Wood Product Mfg	Other	Transformers	Per Unit	Existing	2%	30	\$0.09	10
Wood Product Mfg	Process AirComp	Air Compressor Optimization	Per Unit	Existing	21%	10	\$0.09	1,539
Wood Product Mfg	Process AirComp	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	1,876
Wood Product Mfg	Process AirComp	Motor Management Plan	Per Unit	Existing	3%	10	\$0.07	280
Wood Product Mfg	Process AirComp	VFD Controlled Compressor	Per Unit	Existing	22%	15	\$0.49	1,438
Wood Product Mfg	Process Refrig and Cooling	Chiller - Water Piping Loop with VSD Control	Per Unit	Existing	9%	15	\$0.27	149
Wood Product Mfg	Process Refrig and Cooling	Synchronous Belts	Per Unit	Existing	1%	10	\$0.21	25
Wood Product Mfg	Process Refrig and Cooling	VFD on Cooling Tower Fans	Per Unit	Existing	6%	15	\$0.08	165
Wood Product Mfg	Pumps	Enhanced (Ultra-PE) Motor 1-15 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	0
Wood Product Mfg	Pumps	Enhanced (Ultra-PE) Motor 125-200 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$1	35
Wood Product Mfg	Pumps	Enhanced (Ultra-PE) Motor 20-40 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.79	90
Wood Product Mfg	Pumps	Enhanced (Ultra-PE) Motor 250-500 HP, 1200-3600 RPM	Per Unit	Existing	0%	15	\$0.30	89
Wood Product Mfg	Pumps	Enhanced (Ultra-PE) Motor 50-100 HP, 1200-3600 RPM	Per Unit	Existing	1%	15	\$0.19	211
Wood Product Mfg	Pumps	Integrated Plant Energy Management	Per Unit	Existing	50%	11	\$0.19	3,458
Wood Product Mfg	Pumps	Motor Early Retirement	Per Unit	Existing	3%	10	\$4	0
Wood Product Mfg	Pumps	Motor Rewind	Per Unit	Existing	1%	10	\$0.30	22
Wood Product Mfg	Pumps	Pump System Optimization	Per Unit	Existing	12%	12	\$0.25	501
Wood Product Mfg	Pumps	Variable Speed Drive Control	Per Unit	Existing	4%	10	\$0.21	128

Table A.3.6. Industrial Gas Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Agriculture	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Agriculture	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	14
Agriculture	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	8
Agriculture	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	1
Agriculture	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	3
Agriculture	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	17
Agriculture	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	118
Agriculture	Indirect Boiler	Efficient Burners	Per Unit	Existing	22%	15	\$0.17	220
Agriculture	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	75
Agriculture	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	38
Agriculture	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	28
Agriculture	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	25
Agriculture	Process Heat	Efficient Drying	Per Unit	Existing	15%	20	\$4	163
Agriculture	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	11
Agriculture	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	300
Agriculture	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Agriculture	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Chemical Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Chemical Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	8
Chemical Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	5
Chemical Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	1
Chemical Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	6
Chemical Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	31
Chemical Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	212
Chemical Mfg	Indirect Boiler	Efficient Burners	Per Unit	Existing	22%	15	\$0.17	396
Chemical Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	135
Chemical Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	68
Chemical Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	51
Chemical Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	46
Chemical Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	22
Chemical Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	259
Chemical Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Chemical Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Chemical Mfg	Process Heat	Thermal Oxidizer Upgrades	Per Unit	Existing	43%	15	\$2	460
Electrical Equipment Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Electrical Equipment Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	1
Electrical Equipment Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	0
Electrical Equipment Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Electrical Equipment Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Electrical Equipment Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Electrical Equipment Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	0
Electrical Equipment Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	0
Electrical Equipment Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Electrical Equipment Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Electrical Equipment Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Electrical Equipment Mfg	Process Heat	Efficient Process Furnaces	Per Unit	Existing	7%	25	\$1	0
Electrical Equipment Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Electrical Equipment Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	1
Electrical Equipment Mfg	Process Heat	Optimized Furnace Operations	Per Unit	Existing	6%	15	\$0.41	0
Electrical Equipment Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Electrical Equipment Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0

Table A.3.6. Industrial Gas Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Fabricated Metal Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Fabricated Metal Products	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	2
Fabricated Metal Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	1
Fabricated Metal Products	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Fabricated Metal Products	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Fabricated Metal Products	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Fabricated Metal Products	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	2
Fabricated Metal Products	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1
Fabricated Metal Products	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	1
Fabricated Metal Products	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Fabricated Metal Products	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Fabricated Metal Products	Process Heat	Efficient Process Furnaces	Per Unit	Existing	7%	25	\$1	3
Fabricated Metal Products	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	1
Fabricated Metal Products	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	13
Fabricated Metal Products	Process Heat	Optimized Furnace Operations	Per Unit	Existing	6%	16	\$0.41	3
Fabricated Metal Products	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Fabricated Metal Products	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Food Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Food Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	25
Food Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	15
Food Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	2
Food Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	6
Food Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	31
Food Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	211
Food Mfg	Indirect Boiler	Efficient Burners	Per Unit	Existing	22%	15	\$0.17	393
Food Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	134
Food Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	68
Food Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	51
Food Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	45
Food Mfg	Process Heat	Efficient Drying	Per Unit	Existing	15%	20	\$4	293
Food Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	20
Food Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	537
Food Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Food Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Furniture Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Furniture Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	1
Furniture Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	0
Furniture Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Furniture Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Furniture Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Furniture Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	0
Furniture Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	0
Furniture Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Furniture Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Furniture Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Furniture Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Furniture Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	1
Furniture Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Furniture Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Industrial Machinery	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Industrial Machinery	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	25

Table A.3.6. Industrial Gas Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Industrial Machinery	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	15
Industrial Machinery	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	2
Industrial Machinery	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Industrial Machinery	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	2
Industrial Machinery	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	12
Industrial Machinery	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	8
Industrial Machinery	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	4
Industrial Machinery	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	3
Industrial Machinery	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	3
Industrial Machinery	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	2
Industrial Machinery	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	24
Industrial Machinery	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Industrial Machinery	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Instruments	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Instruments	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	0
Instruments	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	0
Instruments	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Instruments	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Instruments	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Instruments	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	0
Instruments	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	0
Instruments	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Instruments	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Instruments	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Instruments	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Instruments	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	0
Instruments	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Instruments	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Miscellaneous Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Miscellaneous Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	3
Miscellaneous Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	2
Miscellaneous Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Miscellaneous Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Miscellaneous Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Miscellaneous Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	1
Miscellaneous Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	0
Miscellaneous Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Miscellaneous Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Miscellaneous Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Miscellaneous Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Miscellaneous Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	2
Miscellaneous Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Miscellaneous Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Nonmetallic Mineral Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Nonmetallic Mineral Products	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	2
Nonmetallic Mineral Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	1
Nonmetallic Mineral Products	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Nonmetallic Mineral Products	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Nonmetallic Mineral Products	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Nonmetallic Mineral Products	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	2
Nonmetallic Mineral Products	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1

Table A.3.6. Industrial Gas Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Nonmetallic Mineral Products	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	1
Nonmetallic Mineral Products	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Nonmetallic Mineral Products	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Nonmetallic Mineral Products	Process Heat	Efficient Process Furnaces	Per Unit	Existing	7%	25	\$1	52
Nonmetallic Mineral Products	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	4
Nonmetallic Mineral Products	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	71
Nonmetallic Mineral Products	Process Heat	Optimized Furnace Operations	Per Unit	Existing	6%	17	\$0.41	48
Nonmetallic Mineral Products	Process Heat	Oxyfuel	Per Unit	Existing	15%	21	\$1	154
Nonmetallic Mineral Products	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Nonmetallic Mineral Products	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Paper Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Paper Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	1
Paper Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	0
Paper Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Paper Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Paper Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	1
Paper Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	9
Paper Mfg	Indirect Boiler	Efficient Burners	Per Unit	Existing	22%	15	\$0.17	11
Paper Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	6
Paper Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	3
Paper Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	2
Paper Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	2
Paper Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	1
Paper Mfg	Process Heat	High Efficiency Pulping	Per Unit	Existing	16%	20	\$0.01	9
Paper Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	19
Paper Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Paper Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Plastics Rubber Products	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Plastics Rubber Products	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	2
Plastics Rubber Products	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	1
Plastics Rubber Products	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Plastics Rubber Products	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Plastics Rubber Products	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Plastics Rubber Products	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	3
Plastics Rubber Products	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	2
Plastics Rubber Products	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	1
Plastics Rubber Products	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	1
Plastics Rubber Products	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	1
Plastics Rubber Products	Process Heat	Efficient Process Furnaces	Per Unit	Existing	7%	25	\$1	1
Plastics Rubber Products	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Plastics Rubber Products	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	7
Plastics Rubber Products	Process Heat	Optimized Furnace Operations	Per Unit	Existing	6%	18	\$0.41	1
Plastics Rubber Products	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Plastics Rubber Products	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Primary Metal Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Primary Metal Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	1
Primary Metal Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	1
Primary Metal Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Primary Metal Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Primary Metal Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Primary Metal Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	1

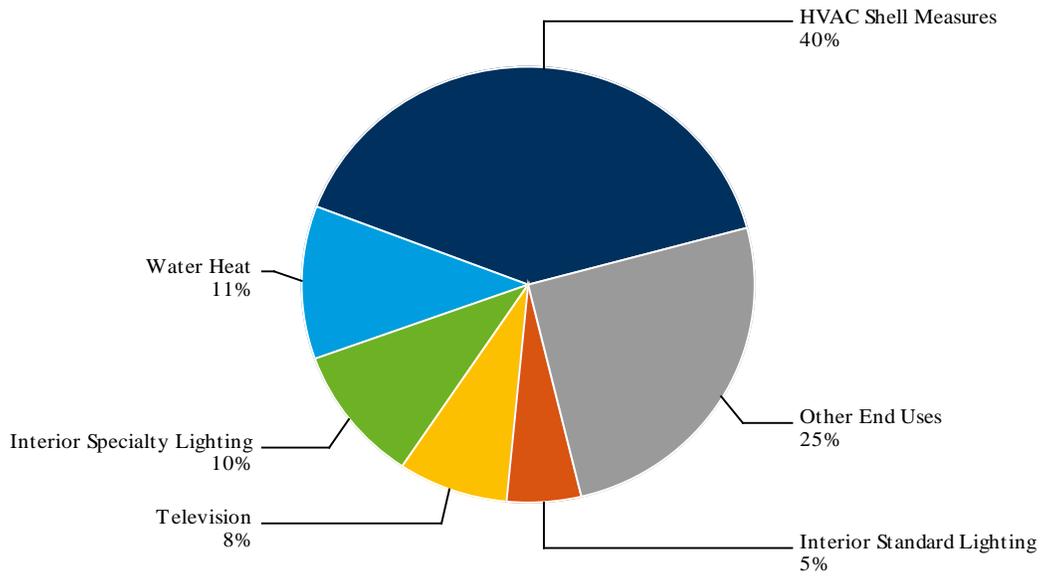
Table A.3.6. Industrial Gas Measure Details

Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Primary Metal Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1
Primary Metal Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Primary Metal Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Primary Metal Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Primary Metal Mfg	Process Heat	Efficient Process Furnaces	Per Unit	Existing	7%	25	\$1	17
Primary Metal Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	1
Primary Metal Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	49
Primary Metal Mfg	Process Heat	Optimized Furnace Operations	Per Unit	Existing	6%	19	\$0.41	17
Primary Metal Mfg	Process Heat	Oxyfuel	Per Unit	Existing	15%	22	\$1	7
Primary Metal Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Primary Metal Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Printing Related Support	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Printing Related Support	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	2
Printing Related Support	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	1
Printing Related Support	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Printing Related Support	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Printing Related Support	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Printing Related Support	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	1
Printing Related Support	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1
Printing Related Support	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0
Printing Related Support	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Printing Related Support	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Printing Related Support	Process Heat	Efficient Drying	Per Unit	Existing	15%	20	\$4	9
Printing Related Support	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	1
Printing Related Support	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	14
Printing Related Support	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Printing Related Support	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Transportation Equipment Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Transportation Equipment Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	5
Transportation Equipment Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	3
Transportation Equipment Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Transportation Equipment Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Transportation Equipment Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Transportation Equipment Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	2
Transportation Equipment Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1
Transportation Equipment Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	1
Transportation Equipment Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Transportation Equipment Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Transportation Equipment Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	1
Transportation Equipment Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	8
Transportation Equipment Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Transportation Equipment Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0
Wood Product Mfg	HVAC	Duct Repair And Sealing	Per Unit	Existing	3%	18	\$20	0
Wood Product Mfg	HVAC	Efficient Furnace	Per Unit	Existing	17%	20	\$2	0
Wood Product Mfg	HVAC	Thermostat Programmable	Per Unit	Existing	3%	15	\$0.62	0
Wood Product Mfg	HVAC	Waste Heat Recovery	Per Unit	Existing	5%	15	\$2	0
Wood Product Mfg	Indirect Boiler	Blowdown Steam Heat Recovery	Per Unit	Existing	1%	15	\$2	0
Wood Product Mfg	Indirect Boiler	Economizer	Per Unit	Existing	6%	20	\$6	0
Wood Product Mfg	Indirect Boiler	Efficient Boiler	Per Unit	Existing	12%	20	\$1	1
Wood Product Mfg	Indirect Boiler	Improved Boiler Insulation	Per Unit	Existing	8%	15	\$6	1
Wood Product Mfg	Indirect Boiler	Improved Boiler Load Control	Per Unit	Existing	4%	15	\$1	0

Table A.3.6. Industrial Gas Measure Details

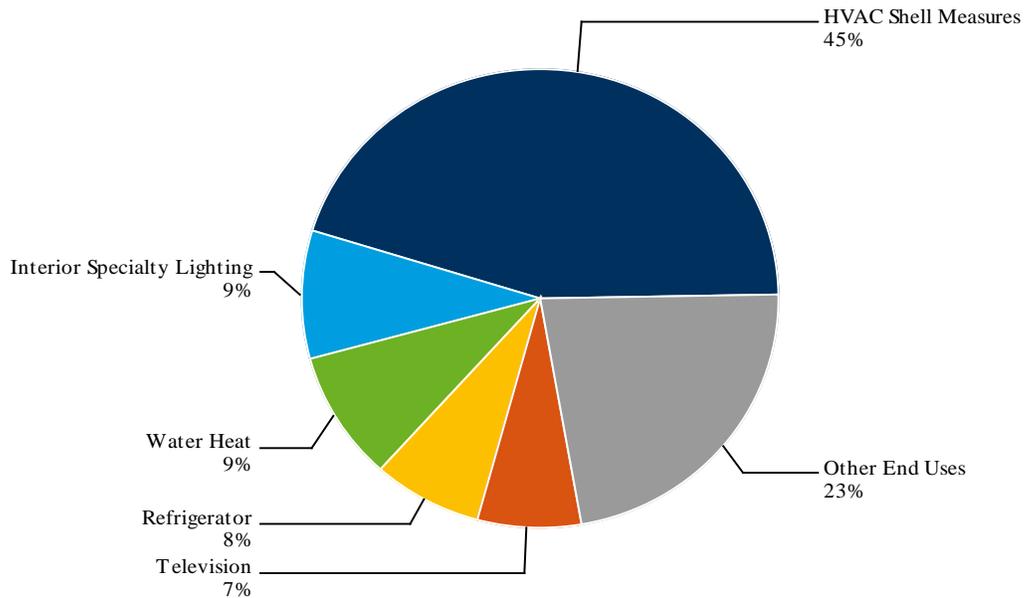
Segment	End Use	Measure Name	Unit Description	Construction Vintage	Percent Savings	Measure Life	Cost per Base Year Therm Saved	2023 Economic Potential (Thousand Therms)
Wood Product Mfg	Indirect Boiler	Improved Boiler Process Control	Per Unit	Existing	3%	15	\$1	0
Wood Product Mfg	Indirect Boiler	Upgrade Burner Efficiency	Per Unit	Existing	8%	20	\$1	0
Wood Product Mfg	Process Heat	Efficient Drying	Per Unit	Existing	15%	20	\$4	7
Wood Product Mfg	Process Heat	Heat Recovery / Economizer	Per Unit	Existing	3%	15	\$2	0
Wood Product Mfg	Process Heat	Improved Controls	Per Unit	Existing	30%	15	\$0.48	3
Wood Product Mfg	Process Heat	Steam Trap Maintenance	Per Unit	Existing	13%	2	\$4	0
Wood Product Mfg	Process Heat	Steam Trap Replacement	Per Unit	Existing	15%	2	\$5	0

Figure A.4.1.1 Electric Technical Potential: Residential by End Use



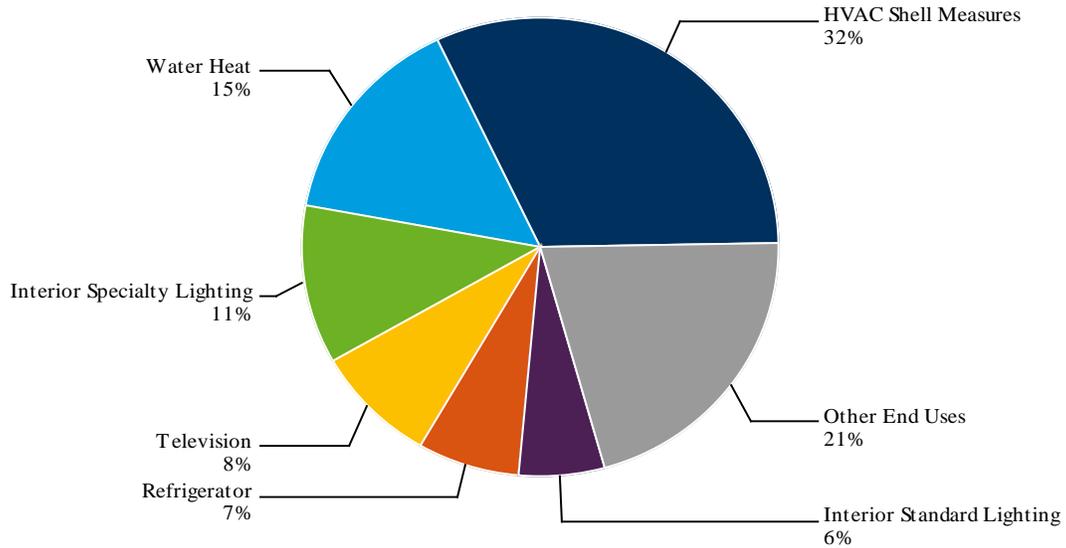
Note: 'Other End Uses' includes:
 Refrigerator: 4%, Central Cooling: 4%, Set Top Box: 3%, Other Plug Load: 3%, Freezer: 2%, Computer: 2%
 Dryer: 2%, Exterior Lighting: 1%, Cooking Oven: 1%, Dehumidifier: 1%, Printer: 1%, DVD: 1%
 Monitor: 0%, Home Audio System: 0%, Pool Pump: 0%, Heat Pump: 0%, Copier: 0%, Room Cooling: 0%

Figure A.4.1.2 Electric Technical Potential: Residential Low Income Multi Family by End Use



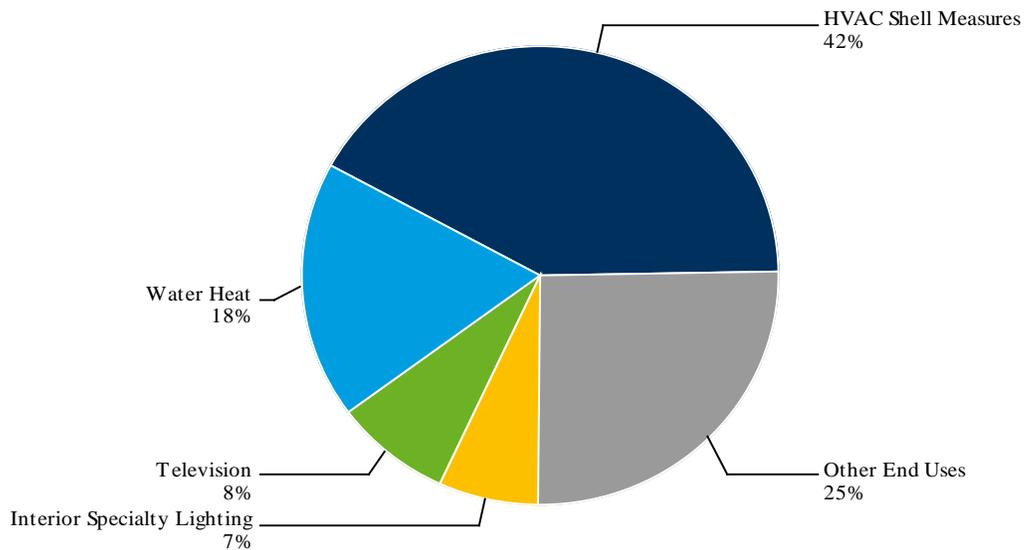
Note: 'Other End Uses' includes:
 Interior Standard Lighting: 5%, Other Plug Load: 4%, Set Top Box: 3%, Central Cooling: 3%, Cooking Oven: 1%, Computer: 1%
 Exterior Lighting: 1%, Freezer: 1%, Dehumidifier: 1%, Dryer: 1%, Printer: 1%, DVD: 0%

Figure A.4.1.3 Electric Technical Potential: Residential Low Income Single Family by End Use



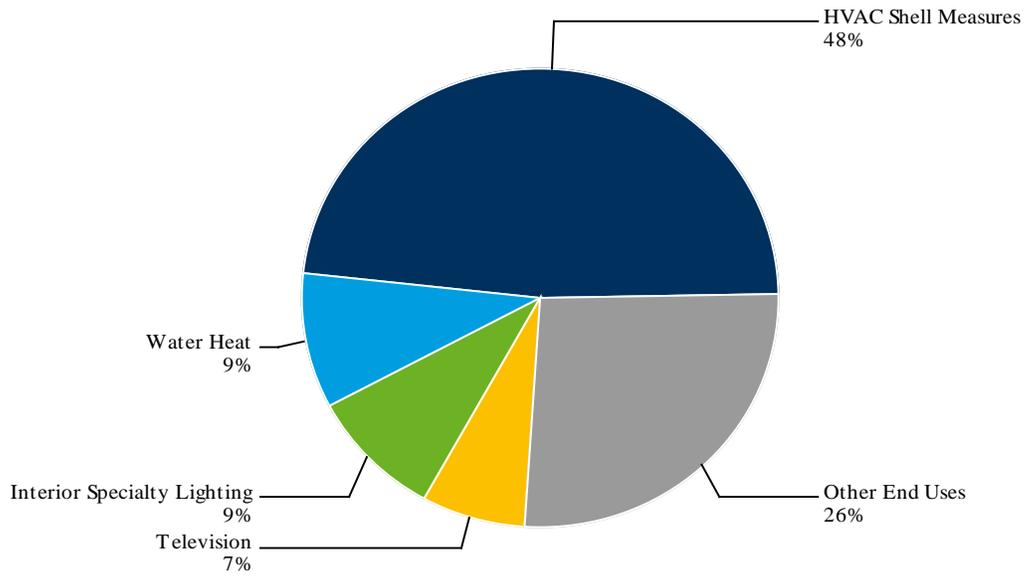
Note: 'Other End Uses' includes:
 Set Top Box: 3%, Other Plug Load: 3%, Freezer: 3%, Central Cooling: 2%, Computer: 2%, Dryer: 2%
 Exterior Lighting: 1%, Dehumidifier: 1%, Cooking Oven: 1%, DVD: 1%, Printer: 1%, Monitor: 0%

Figure A.4.1.4 Electric Technical Potential: Residential Manufactured by End Use



Note: 'Other End Uses' includes:
 Set Top Box: 4%, Refrigerator: 4%, Interior Standard Lighting: 4%, Central Cooling: 3%, Other Plug Load: 3%, Dryer: 2%
 Computer: 1%, Freezer: 1%, Exterior Lighting: 1%, Dehumidifier: 1%, DVD: 1%, Printer: 0%

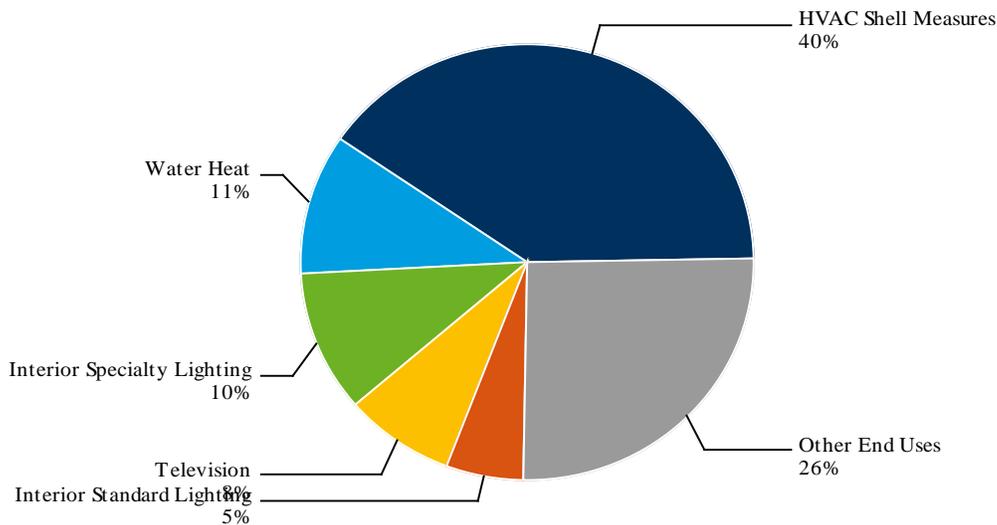
Figure A.4.1.5 Electric Technical Potential: Residential Multi Family by End Use



Note: 'Other End Uses' includes:

Interior Standard Lighting: 5%, Refrigerator: 4%, Other Plug Load: 4%, Set Top Box: 3%, Central Cooling: 3%, Cooking Oven: 1%
 Computer: 1%, Exterior Lighting: 1%, Dehumidifier: 1%, Dryer: 1%, Printer: 1%, DVD: 0%

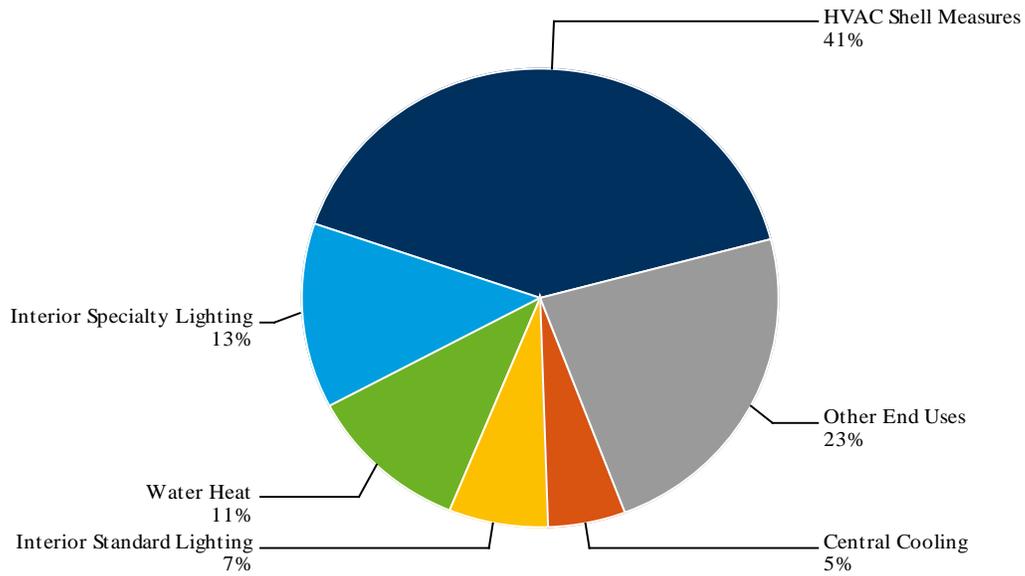
Figure A.4.1.6 Electric Technical Potential: Residential Single Family by End Use



Note: 'Other End Uses' includes:

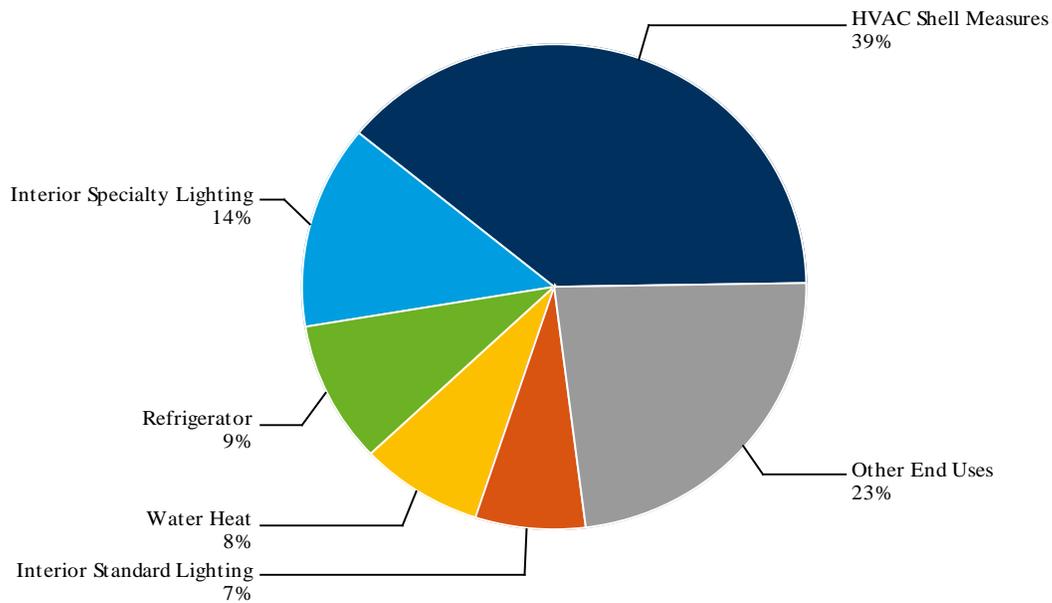
Central Cooling: 4%, Refrigerator: 4%, Set Top Box: 3%, Other Plug Load: 3%, Freezer: 2%, Computer: 2%
 Dryer: 2%, Exterior Lighting: 1%, Cooking Oven: 1%, Dehumidifier: 1%, DVD: 1%, Printer: 1%
 Monitor: 0%, Home Audio System: 0%, Pool Pump: 0%, Heat Pump: 0%, Copier: 0%, Room Cooling: 0%

Figure A.4.1.7 Electric Economic Potential: Residential by End Use



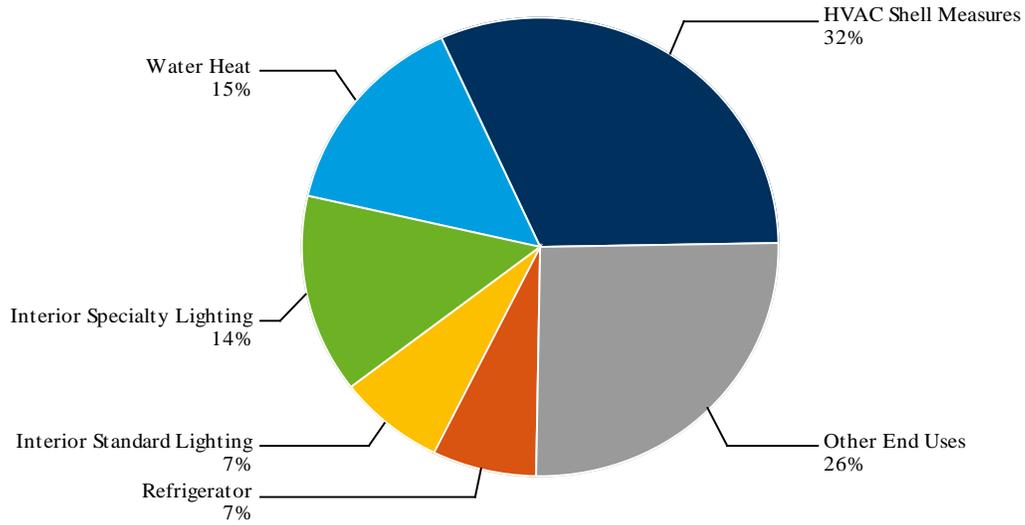
Note: 'Other End Uses' includes:
 Television: 4%, Set Top Box: 4%, Refrigerator: 3%, Other Plug Load: 3%, Freezer: 2%, Computer: 2%
 Exterior Lighting: 1%, Dehumidifier: 1%, Dryer: 1%, DVD: 1%, Pool Pump: 0%, Printer: 0%

Figure A.4.1.8 Electric Economic Potential: Residential Low Income Multi Family by End Use



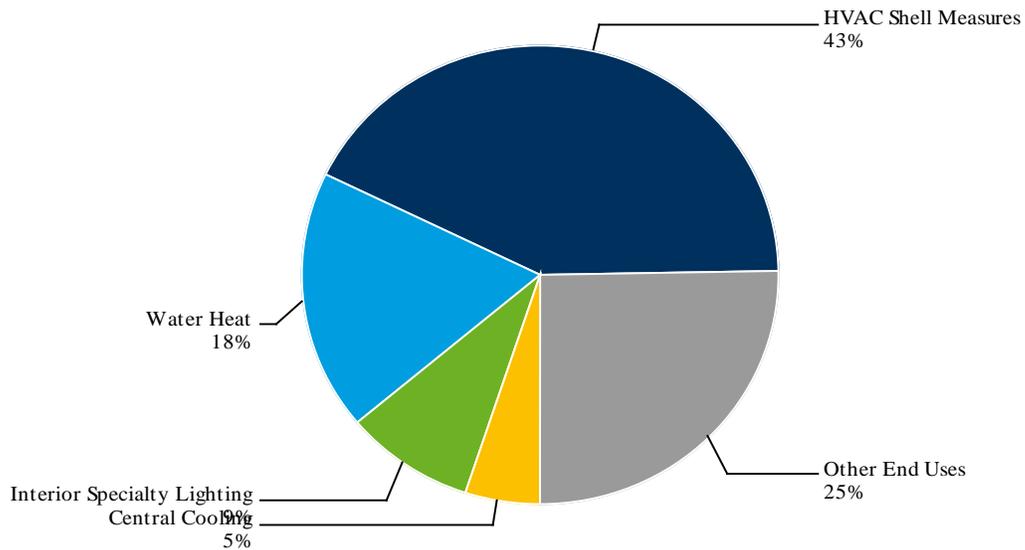
Note: 'Other End Uses' includes:
 Television: 4%, Set Top Box: 4%, Other Plug Load: 4%, Central Cooling: 4%, Computer: 2%, Freezer: 1%

Figure A.4.1.9 Electric Economic Potential: Residential Low Income Single Family by End Use



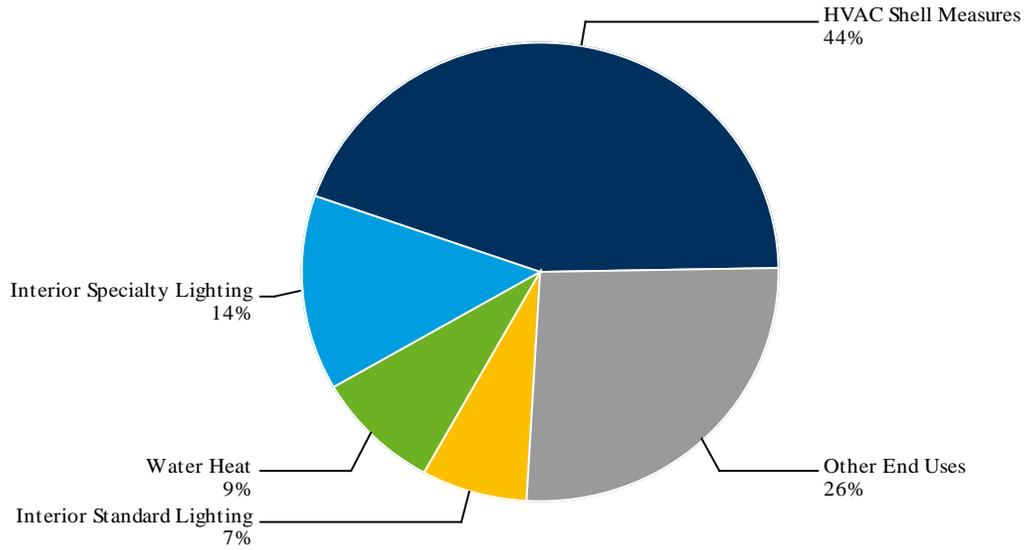
Note: 'Other End Uses' includes:
 Television: 4%, Set Top Box: 4%, Central Cooling: 4%, Freezer: 3%, Other Plug Load: 3%, Computer: 3%
 Exterior Lighting: 1%, Dehumidifier: 1%, Dryer: 1%, DVD: 1%, Printer: 0%, Room Cooling: 0%

Figure A.4.1.10 Electric Economic Potential: Residential Manufactured by End Use



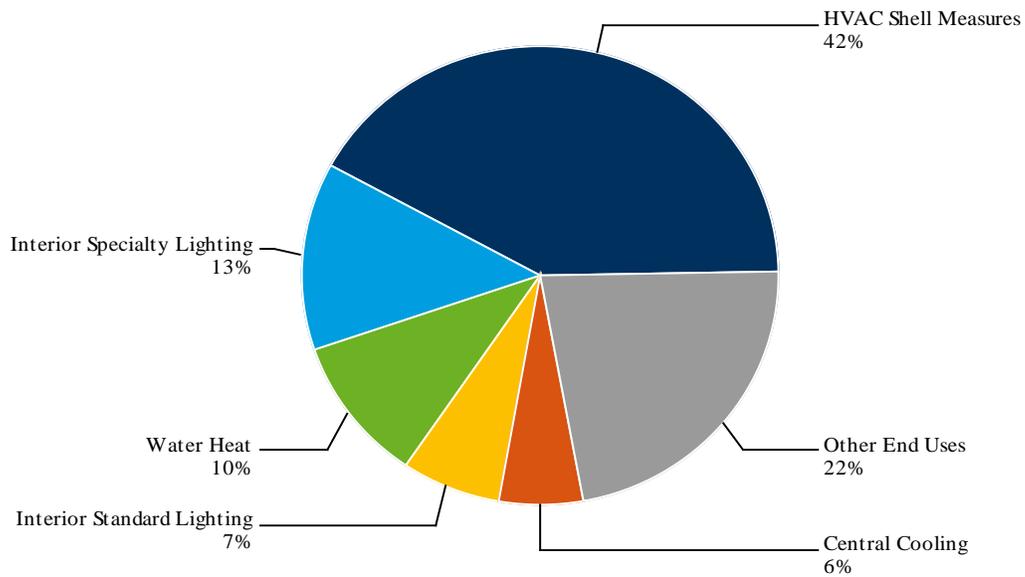
Note: 'Other End Uses' includes:
 Set Top Box: 5%, Interior Standard Lighting: 5%, Television: 4%, Refrigerator: 3%, Other Plug Load: 2%, Computer: 2%
 Freezer: 2%, Exterior Lighting: 1%, Dehumidifier: 1%, DVD: 1%, Printer: 0%, Room Cooling: 0%

Figure A.4.1.11 Electric Economic Potential: Residential Multi Family by End Use



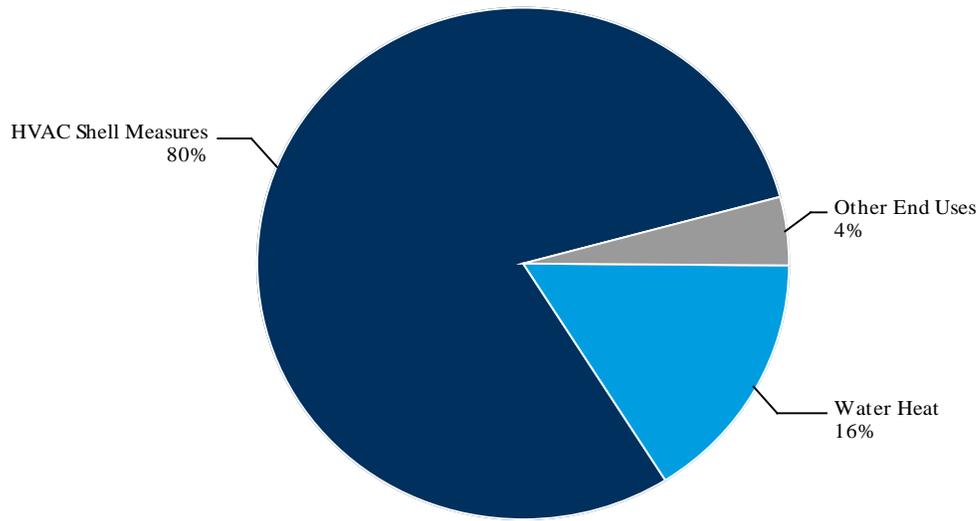
Note: 'Other End Uses' includes:
 Television: 4%, Set Top Box: 4%, Other Plug Load: 4%, Central Cooling: 4%, Refrigerator: 4%, Computer: 2%
 Exterior Lighting: 1%, Dehumidifier: 1%, Freezer: 1%, DVD: 1%, Printer: 0%, Room Cooling: 0%

Figure A.4.1.12 Electric Economic Potential: Residential Single Family by End Use



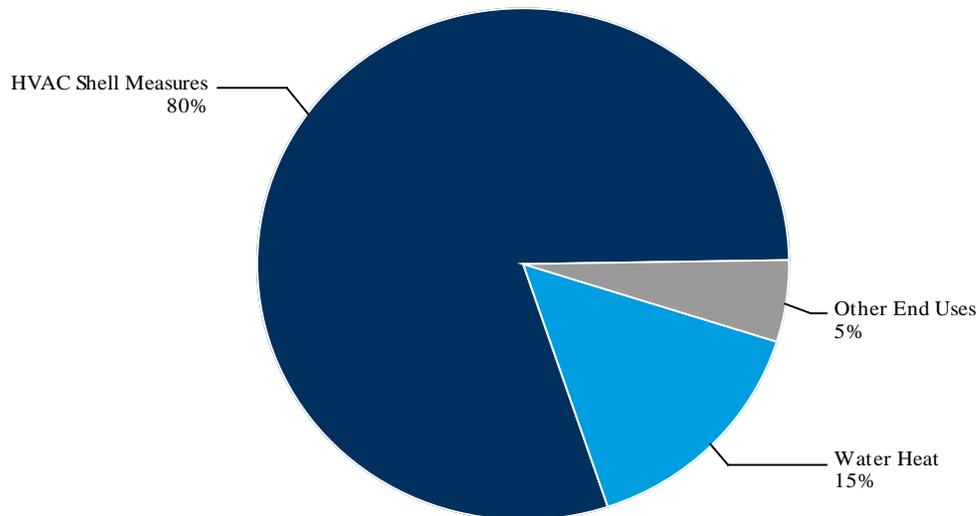
Note: 'Other End Uses' includes:
 Television: 4%, Set Top Box: 4%, Freezer: 3%, Other Plug Load: 2%, Computer: 2%, Refrigerator: 2%
 Exterior Lighting: 1%, Dryer: 1%, Dehumidifier: 1%, DVD: 1%, Pool Pump: 1%, Printer: 0%

Figure A.4.2.1 Gas Technical Potential: Residential by End Use



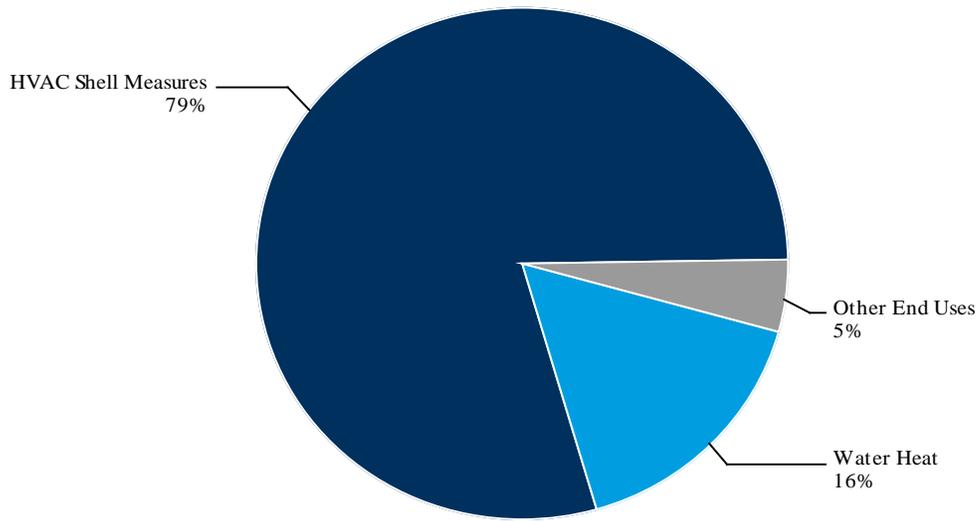
Note: 'Other End Uses' includes:

Figure A.4.2.2 Gas Technical Potential: Residential Low Income Multi Family by End Use



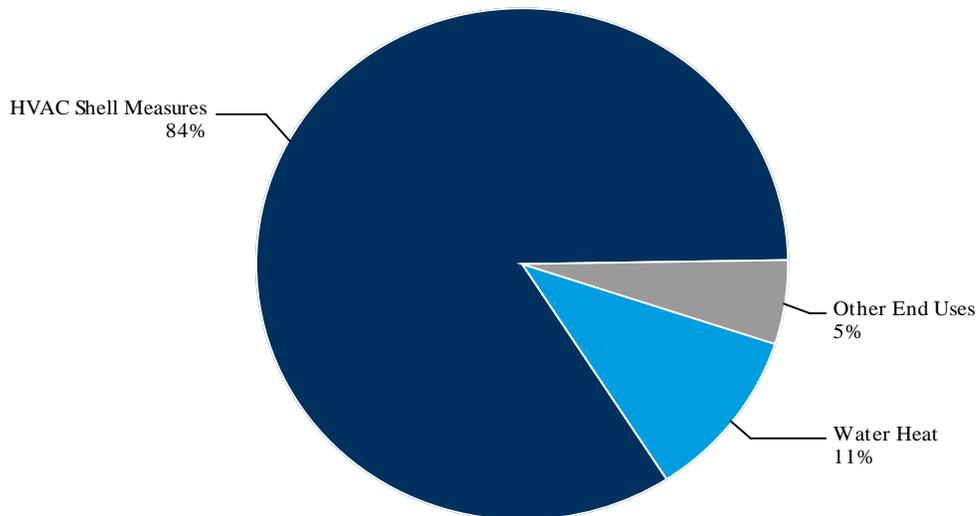
Note: 'Other End Uses' includes:

Figure A.4.2.3 Gas Technical Potential: Residential Low Income Single Family by End Use



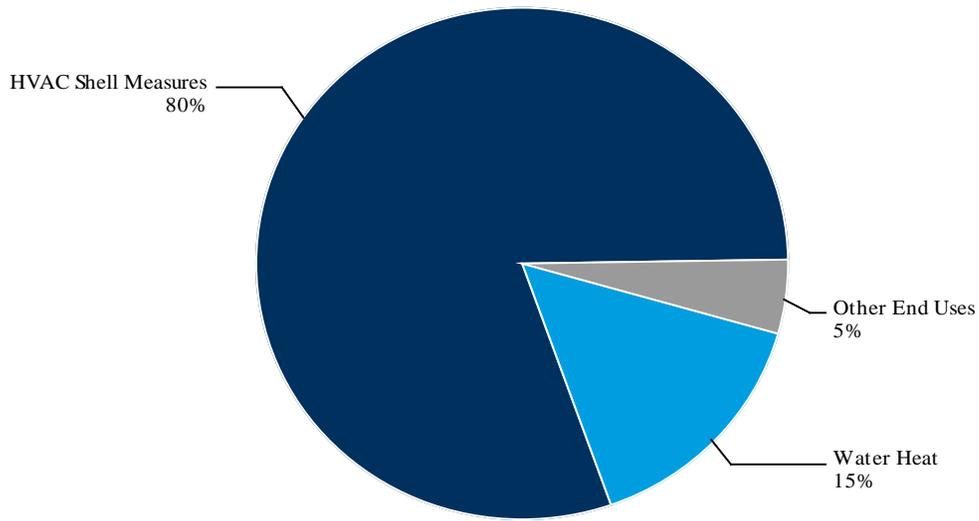
Note: 'Other End Uses' includes:

Figure A.4.2.4 Gas Technical Potential: Residential Manufactured by End Use



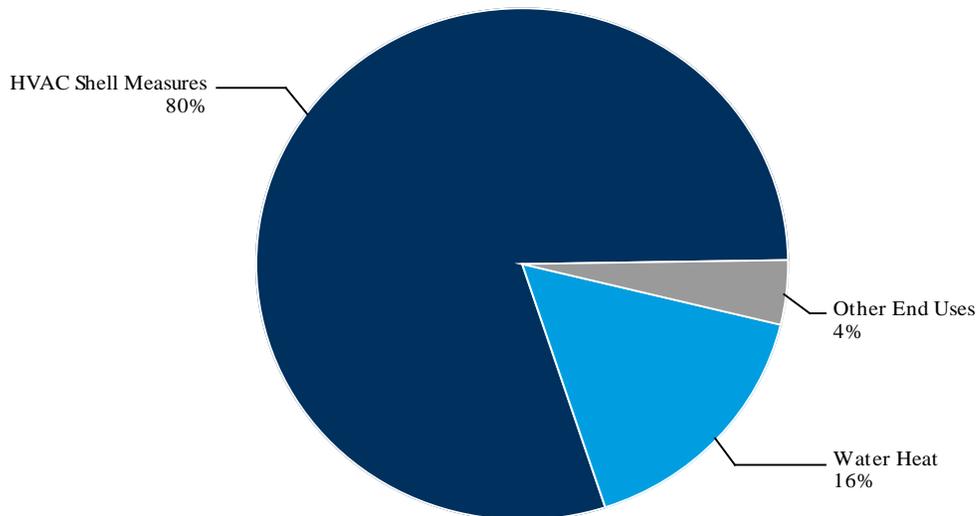
Note: 'Other End Uses' includes:

Figure A.4.2.5 Gas Technical Potential: Residential Multi Family by End Use



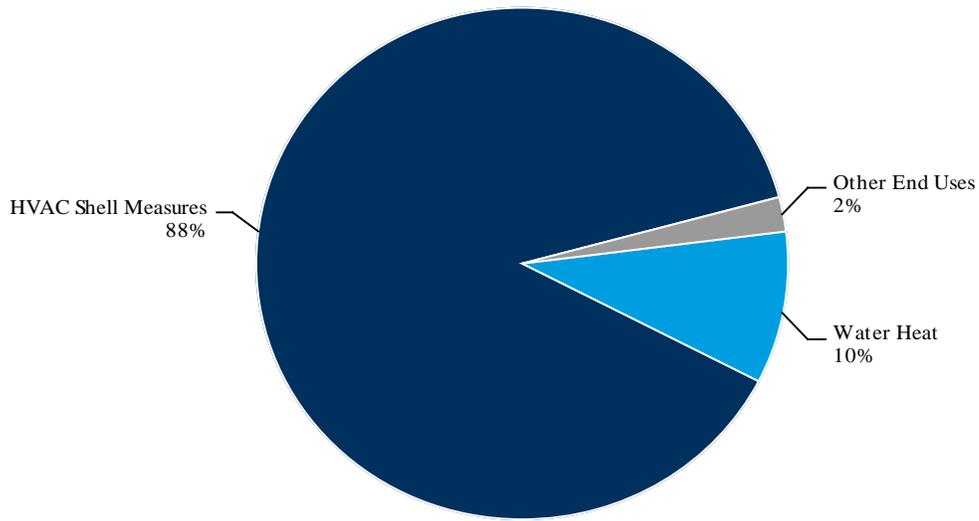
Note: 'Other End Uses' includes:

Figure A.4.2.6 Gas Technical Potential: Residential Single Family by End Use



Note: 'Other End Uses' includes:

Figure A.4.2.7 Gas Economic Potential: Residential by End Use



Note: 'Other End Uses' includes:

Figure A.4.2.8 Gas Economic Potential: Residential Low Income Multi Family by End Use

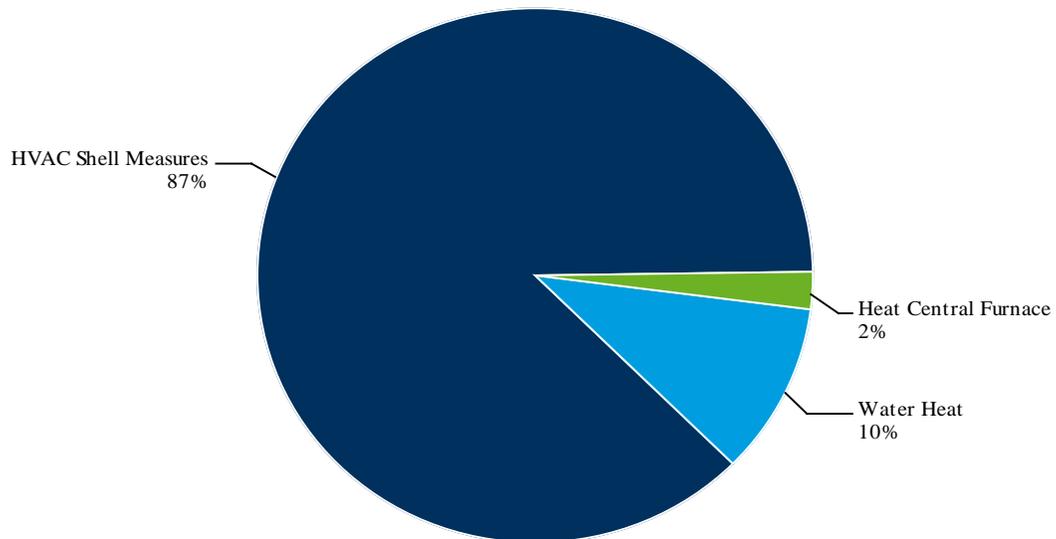


Figure A.4.2.9 Gas Economic Potential: Residential Low Income Single Family by End Use

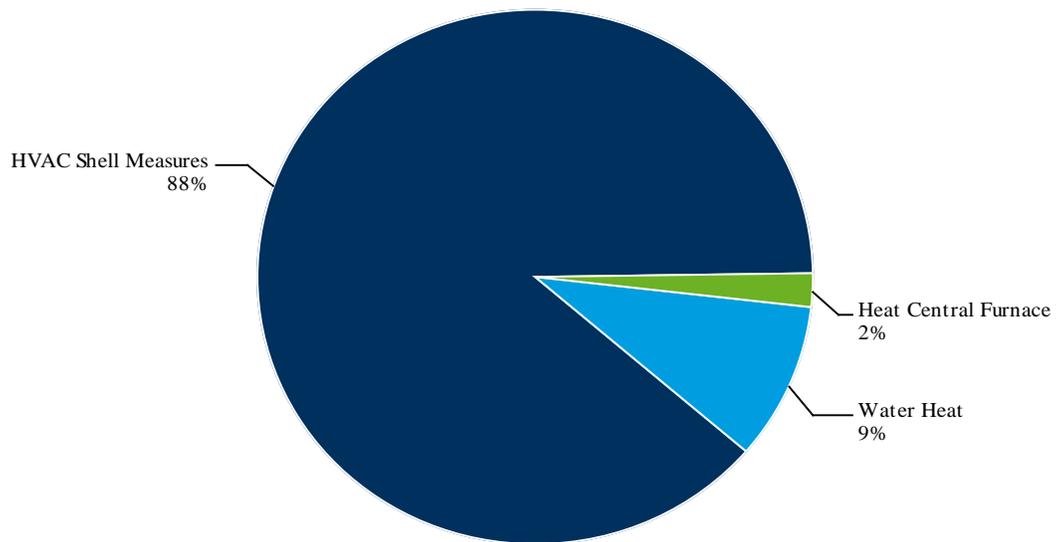
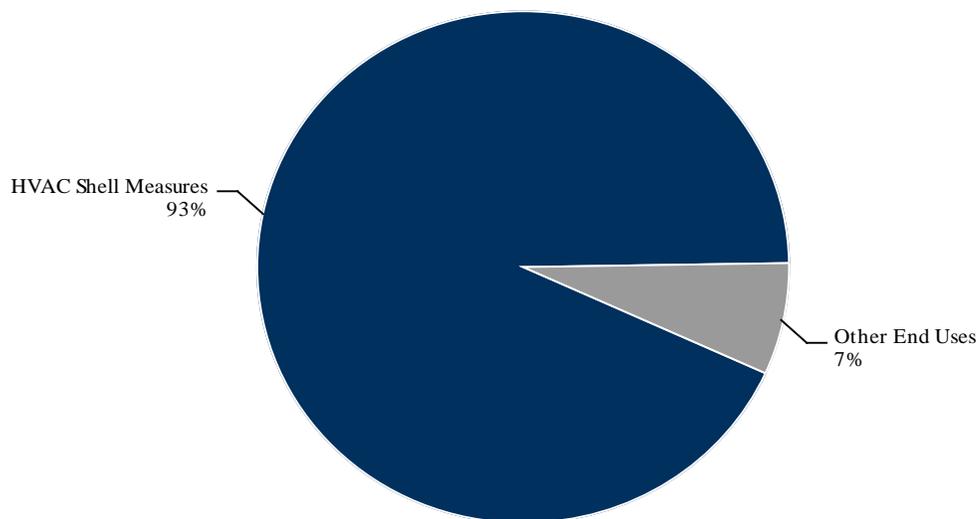


Figure A.4.2.10 Gas Economic Potential: Residential Manufactured by End Use



Note: 'Other End Uses' includes:

Figure A.4.2.11 Gas Economic Potential: Residential Multi Family by End Use

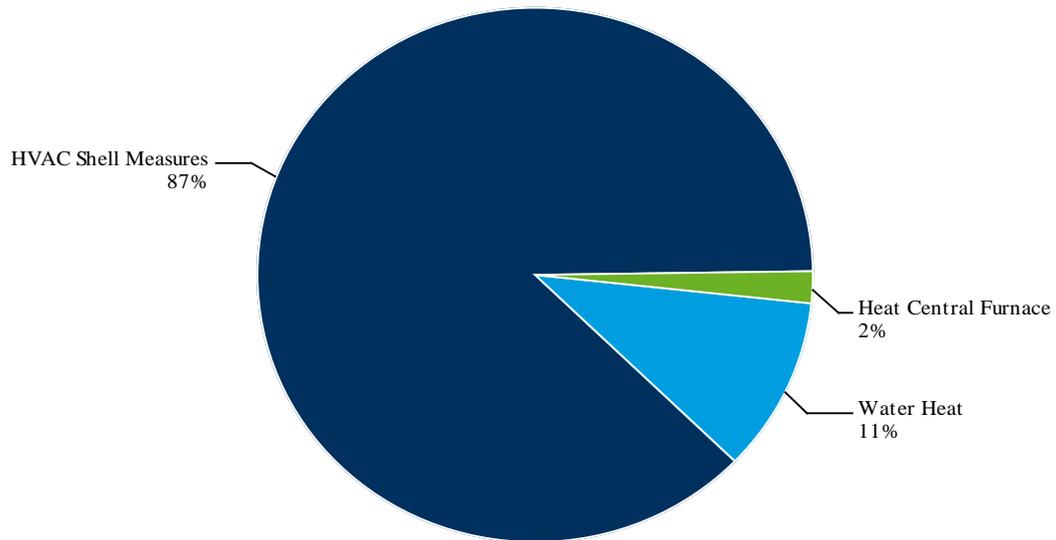
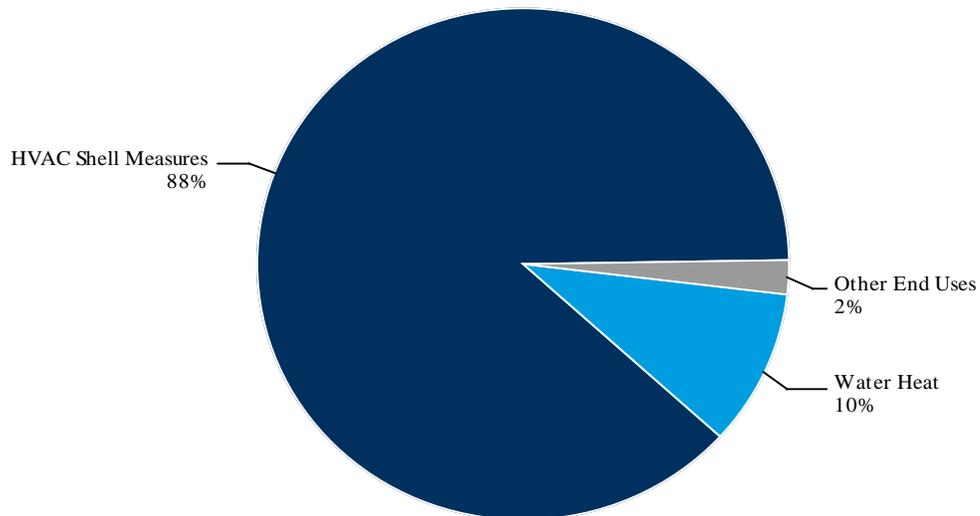
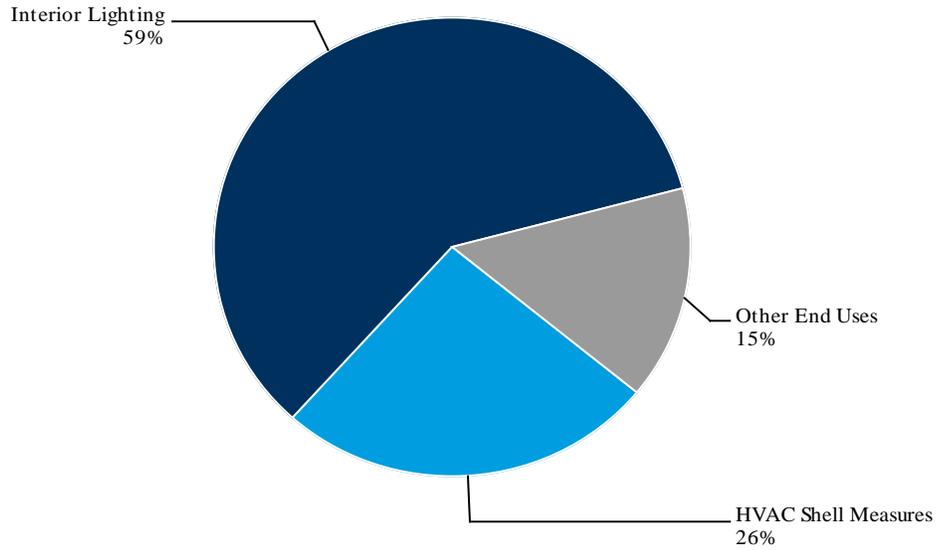


Figure A.4.2.12 Gas Economic Potential: Residential Single Family by End Use



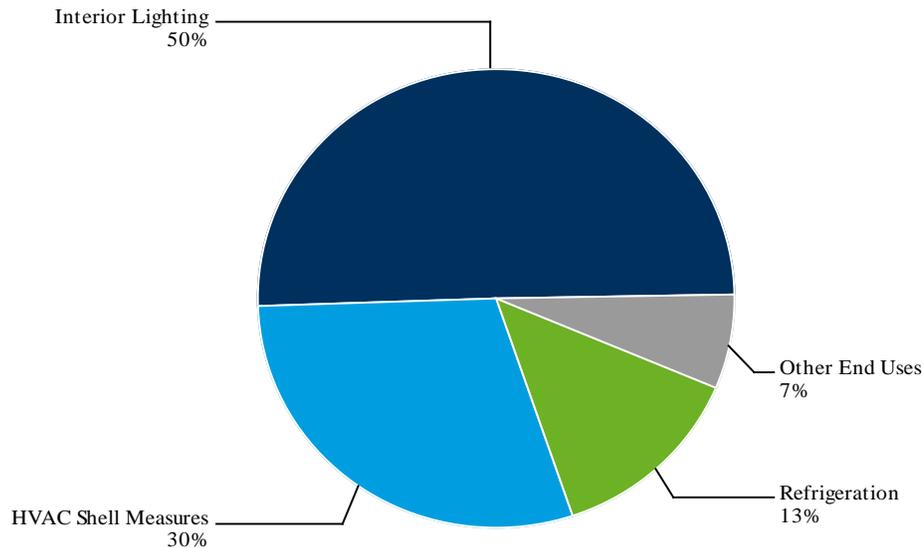
Note: 'Other End Uses' includes:

Figure A.4.3.1 Electric Technical Potential: Commercial by End Use



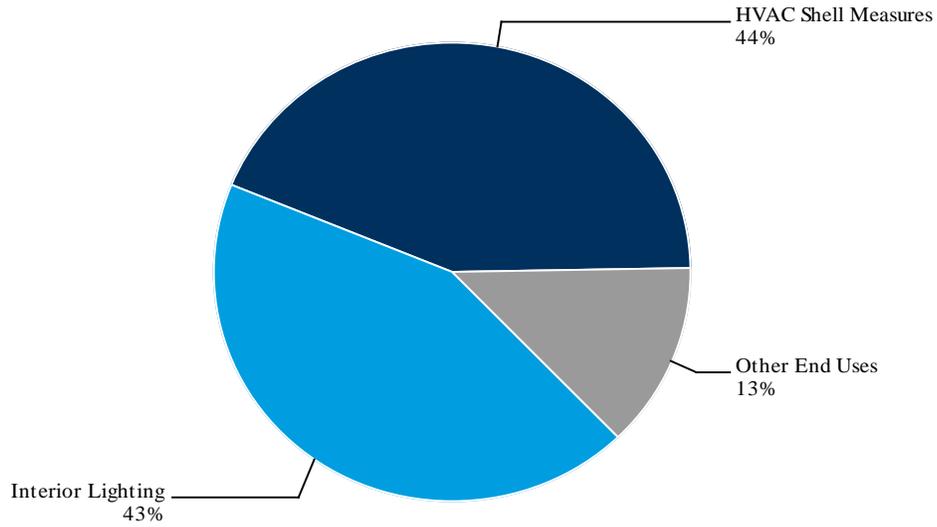
Note: 'Other End Uses' includes:
Refrigeration: 5%, Water Heat: 3%, Computers: 2%, Cooling: 1%, Refrigerators: 1%, Vending Machine: 1%
Other Plug Load: 1%, Printers: 0%, Exterior Lighting: 0%, Heat Pump: 0%, Servers: 0%, Cooking: 0%

Figure A.4.3.2 Electric Technical Potential: Commercial Convenience by End Use



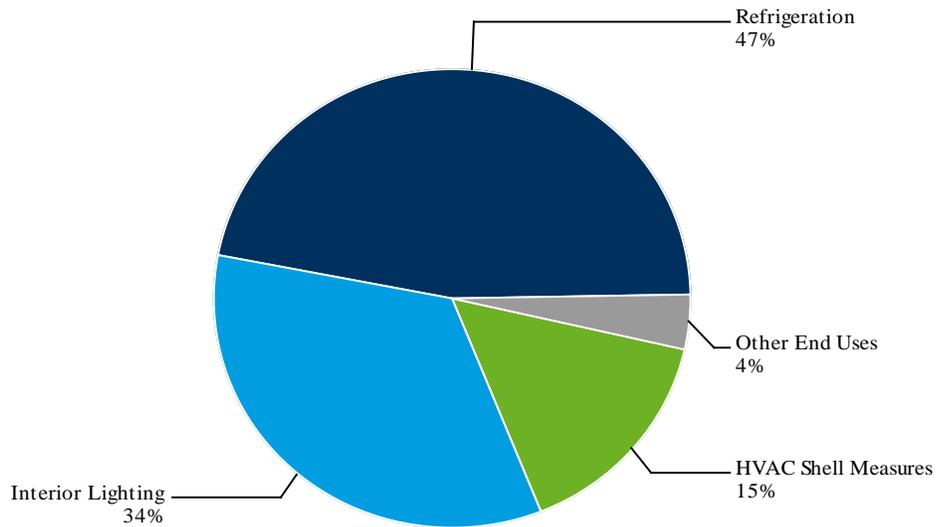
Note: 'Other End Uses' includes:
Vending Machine: 2%, Water Heat: 1%, Cooling: 1%, Other Plug Load: 1%, Other: 0%, Heat Pump: 0%
Computers: 0%, Photo Copiers: 0%, Fax: 0%, Printers: 0%, Flat Screen Monitors: 0%, Cooking: 0%

Figure A.4.3.3 Electric Technical Potential: Commercial Education by End Use



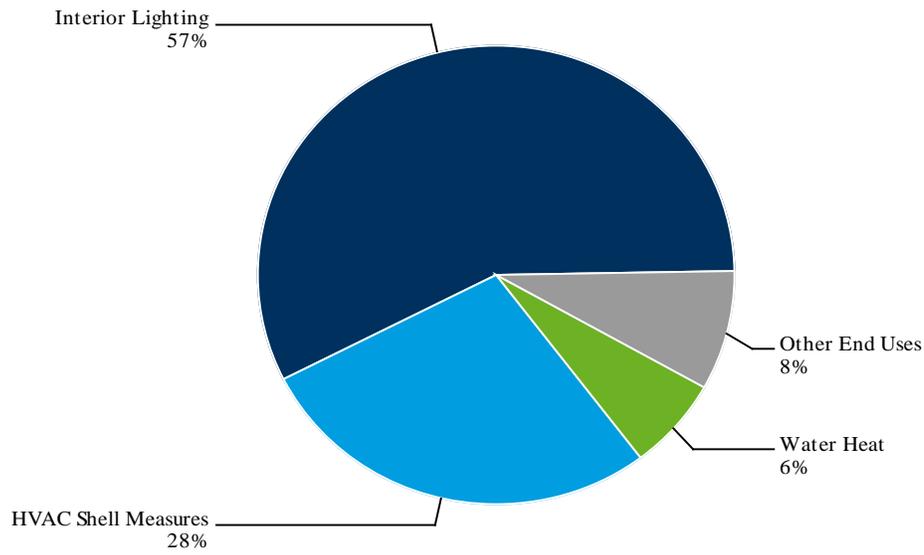
Note: 'Other End Uses' includes:
Computers: 5%, Refrigeration: 2%, Water Heat: 2%, Cooling: 1%, Vending Machine: 1%, Printers: 0%
Other Plug Load: 0%, Heat Pump: 0%, Refrigerators: 0%, Other: 0%, Cooking: 0%, Exterior Lighting: 0%

Figure A.4.3.4 Electric Technical Potential: Commercial Grocery by End Use



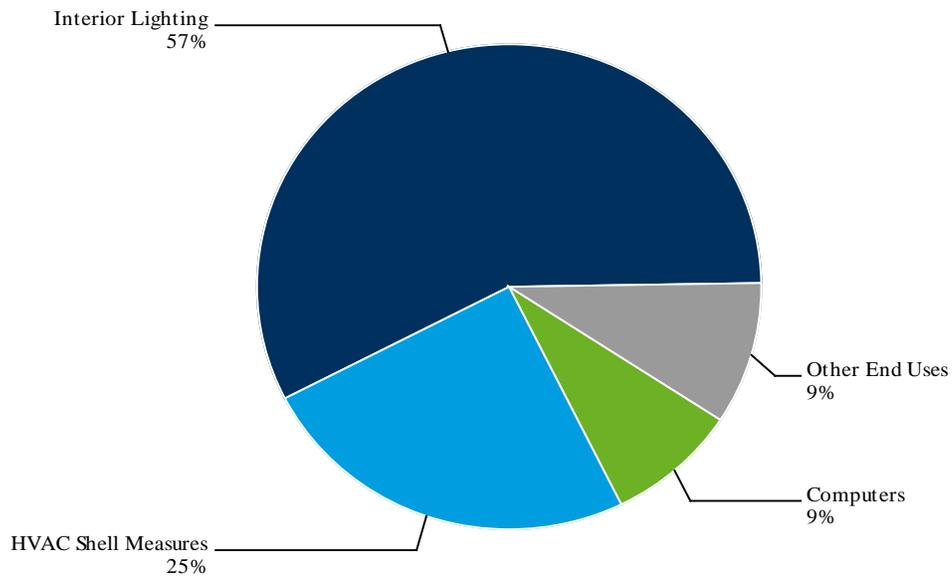
Note: 'Other End Uses' includes:
Water Heat: 1%, Cooking: 1%, Cooling: 1%, Vending Machine: 0%, Computers: 0%, Other Plug Load: 0%
Heat Pump: 0%, Printers: 0%, Servers: 0%, Refrigerators: 0%, Other: 0%, Photo Copiers: 0%

Figure A.4.3.5 Electric Technical Potential: Commercial Health by End Use



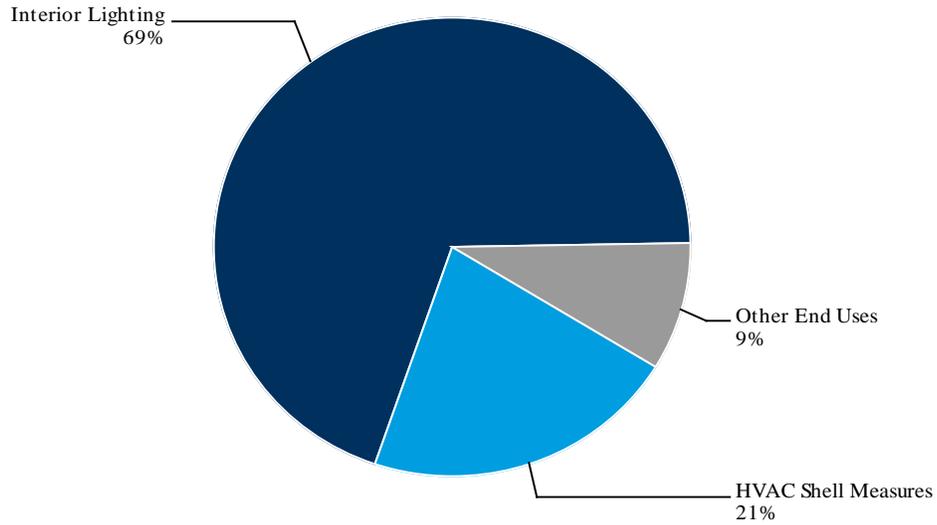
Note: 'Other End Uses' includes:
Computers: 2%, Refrigeration: 2%, Cooling: 1%, Refrigerators: 1%, Vending Machine: 0%, Other Plug Load: 0%
Printers: 0%, Cooking: 0%, Heat Pump: 0%, Other: 0%, Servers: 0%, Photo Copiers: 0%

Figure A.4.3.6 Electric Technical Potential: Commercial Large Office by End Use



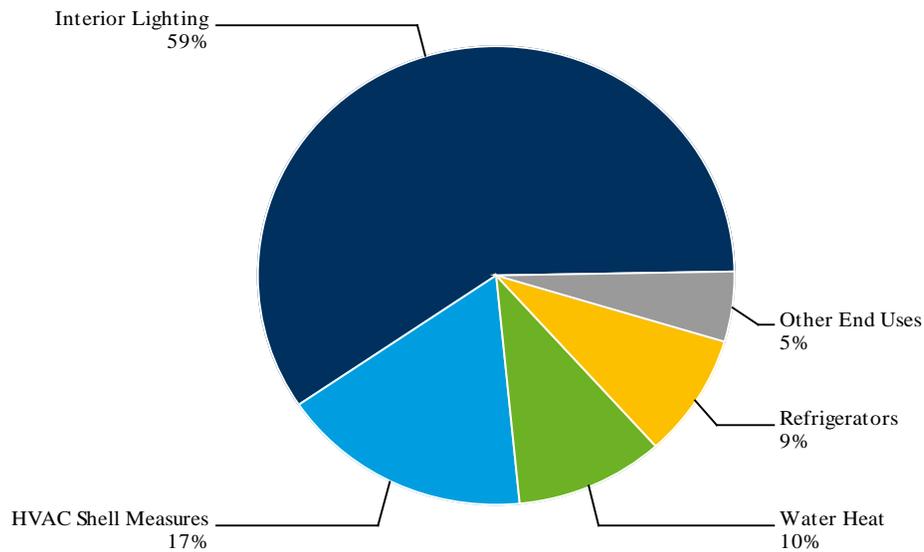
Note: 'Other End Uses' includes:
Refrigerators: 2%, Cooling: 2%, Water Heat: 1%, Printers: 1%, Other Plug Load: 1%, Servers: 1%

Figure A.4.3.7 Electric Technical Potential: Commercial Large Retail by End Use



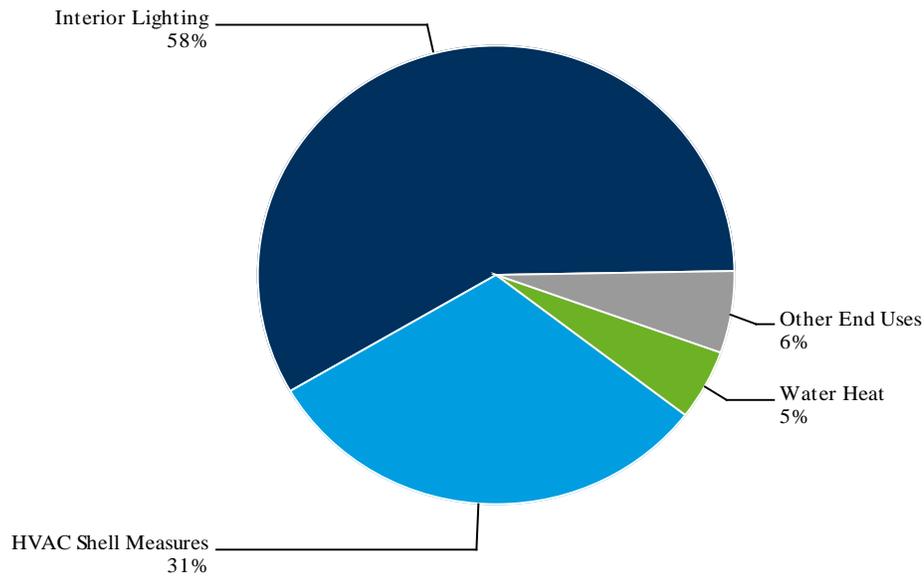
Note: 'Other End Uses' includes:
Refrigeration: 3%, Water Heat: 1%, Cooling: 1%, Computers: 1%, Vending Machine: 1%, Refrigerators: 1%
Other Plug Load: 0%, Exterior Lighting: 0%, Printers: 0%, Photo Copiers: 0%, Other: 0%, Fax: 0%

Figure A.4.3.8 Electric Technical Potential: Commercial Lodging by End Use



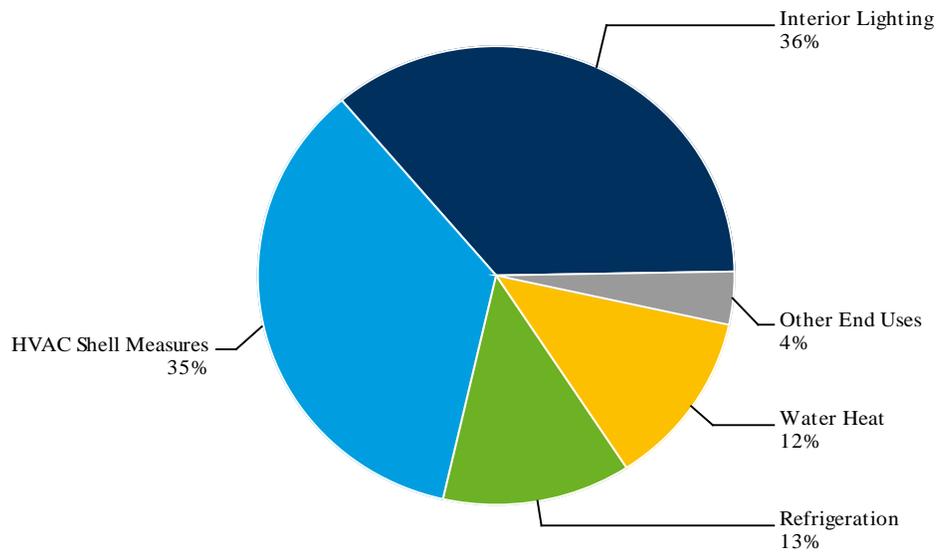
Note: 'Other End Uses' includes:
Refrigeration: 2%, Vending Machine: 1%, Cooling: 1%, Computers: 0%, Cooking: 0%, Heat Pump: 0%
Other Plug Load: 0%, Printers: 0%, Photo Copiers: 0%, Fax: 0%, Exterior Lighting: 0%, Servers: 0%

Figure A.4.3.9 Electric Technical Potential: Commercial Other Commercial by End Use



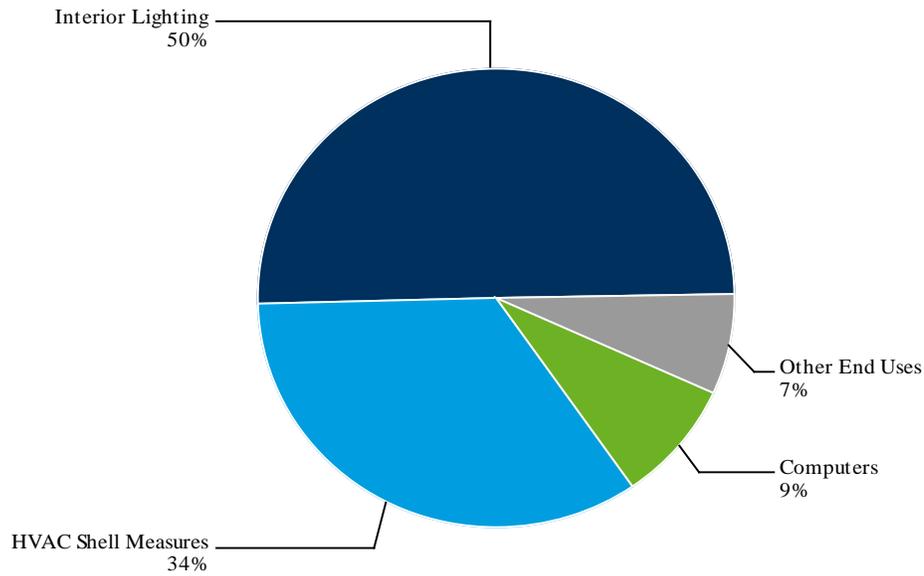
Note: 'Other End Uses' includes:
Cooling: 1%, Computers: 1%, Refrigeration: 1%, Vending Machine: 1%, Other Plug Load: 0%, Heat Pump: 0%
Exterior Lighting: 0%, Printers: 0%, Servers: 0%, Photo Copiers: 0%, Refrigerators: 0%, Fax: 0%

Figure A.4.3.10 Electric Technical Potential: Commercial Restaurant by End Use



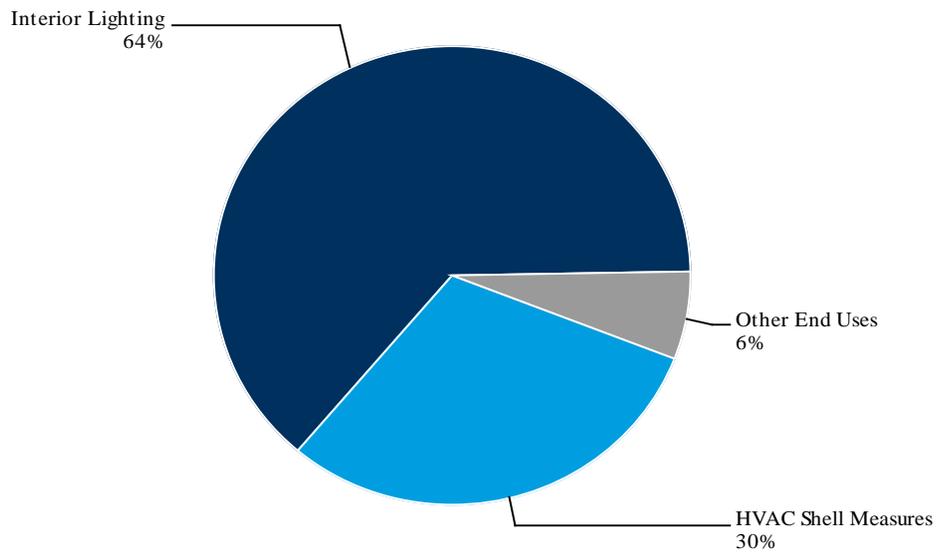
Note: 'Other End Uses' includes:
Cooling: 1%, Cooking: 0%, Vending Machine: 0%, Other Plug Load: 0%, Heat Pump: 0%, Computers: 0%
Photo Copiers: 0%, Refrigerators: 0%, Fax: 0%, Printers: 0%, Servers: 0%, Flat Screen Monitors: 0%

Figure A.4.3.11 Electric Technical Potential: Commercial Small Office by End Use



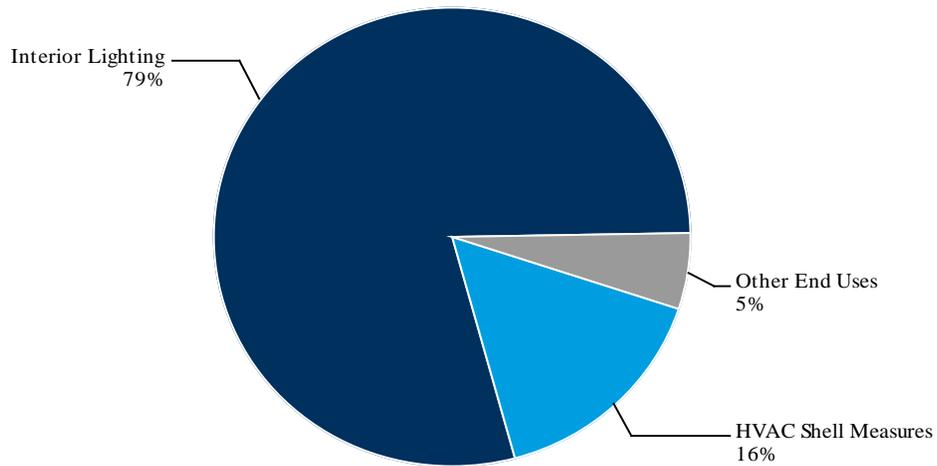
Note: 'Other End Uses' includes:
Cooling: 1%, Printers: 1%, Water Heat: 1%, Other Plug Load: 1%, Servers: 1%, Vending Machine: 1%
Heat Pump: 0%, Other: 0%, Photo Copiers: 0%, Refrigerators: 0%, Fax: 0%, Exterior Lighting: 0%

Figure A.4.3.12 Electric Technical Potential: Commercial Small Retail by End Use



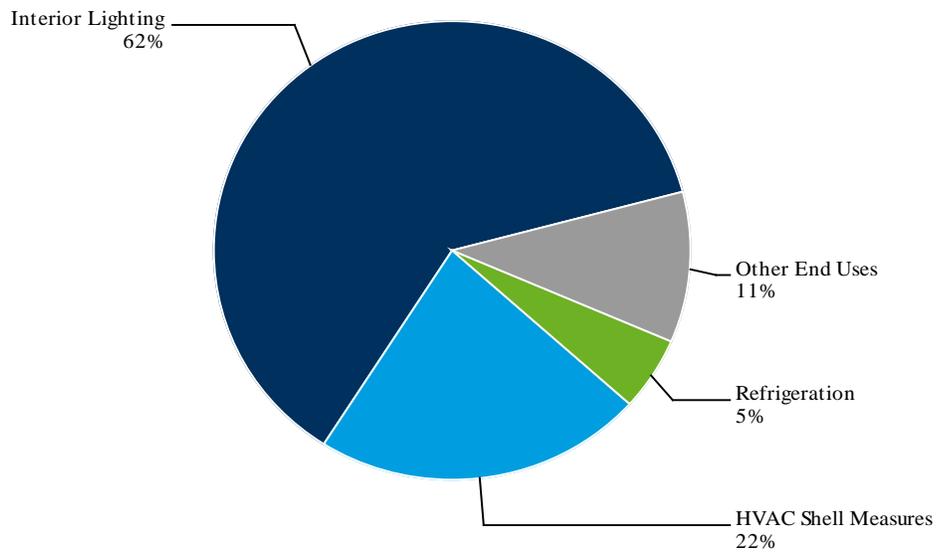
Note: 'Other End Uses' includes:
Cooling: 1%, Water Heat: 1%, Computers: 1%, Vending Machine: 1%, Other Plug Load: 1%, Printers: 0%
Heat Pump: 0%, Photo Copiers: 0%, Exterior Lighting: 0%, Fax: 0%, Servers: 0%, Refrigerators: 0%

Figure A.4.3.13 Electric Technical Potential: Commercial Warehouse by End Use



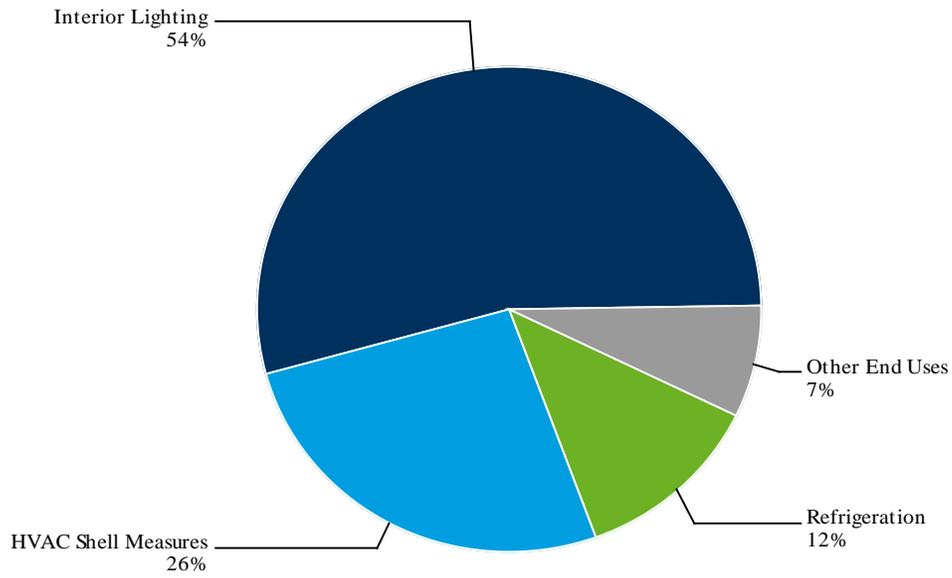
Note: 'Other End Uses' includes:
Computers: 2%, Water Heat: 1%, Vending Machine: 1%, Exterior Lighting: 1%, Other Plug Load: 0%, Cooling: 0%
Printers: 0%, Heat Pump: 0%, Photo Copiers: 0%, Servers: 0%, Fax: 0%, Refrigerators: 0%

Figure A.4.3.14 Electric Economic Potential: Commercial by End Use



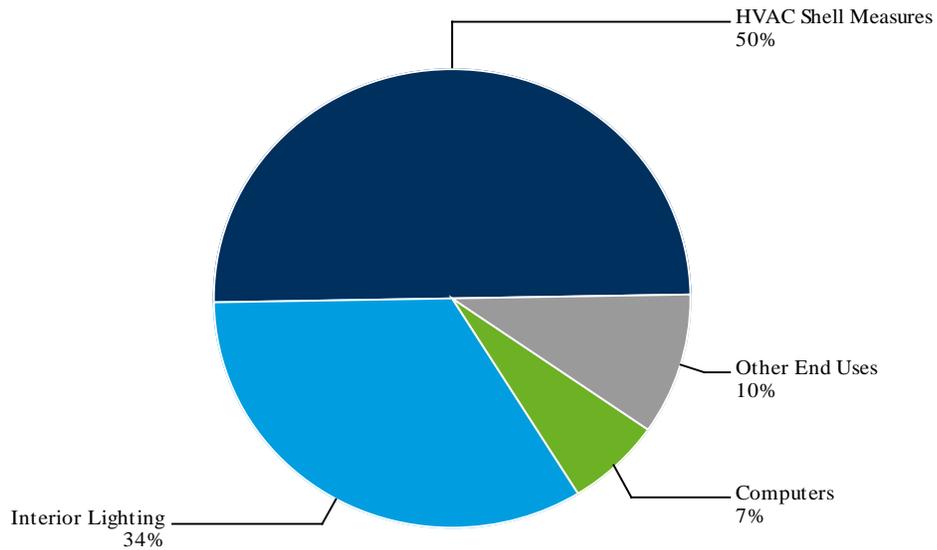
Note: 'Other End Uses' includes:
Water Heat: 4%, Computers: 3%, Cooling: 1%, Vending Machine: 1%, Printers: 0%, Heat Pump: 0%
Exterior Lighting: 0%, Servers: 0%, Fax: 0%, Other Plug Load: 0%, Other: 0%, Cooking: 0%

Figure A.4.3.15 Electric Economic Potential: Commercial Convenience by End Use



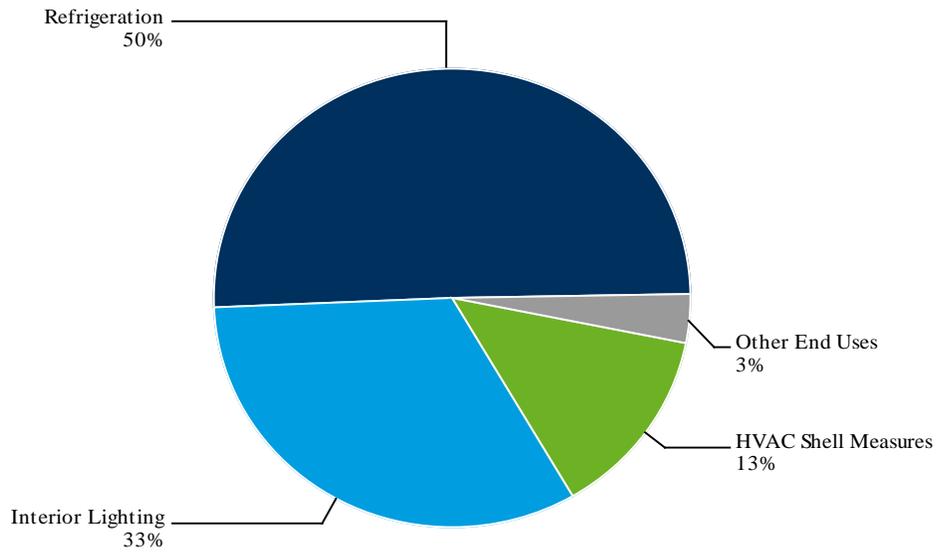
Note: 'Other End Uses' includes:
Vending Machine: 3%, Water Heat: 2%, Cooling: 1%, Heat Pump: 0%, Other: 0%, Computers: 0%

Figure A.4.3.16 Electric Economic Potential: Commercial Education by End Use



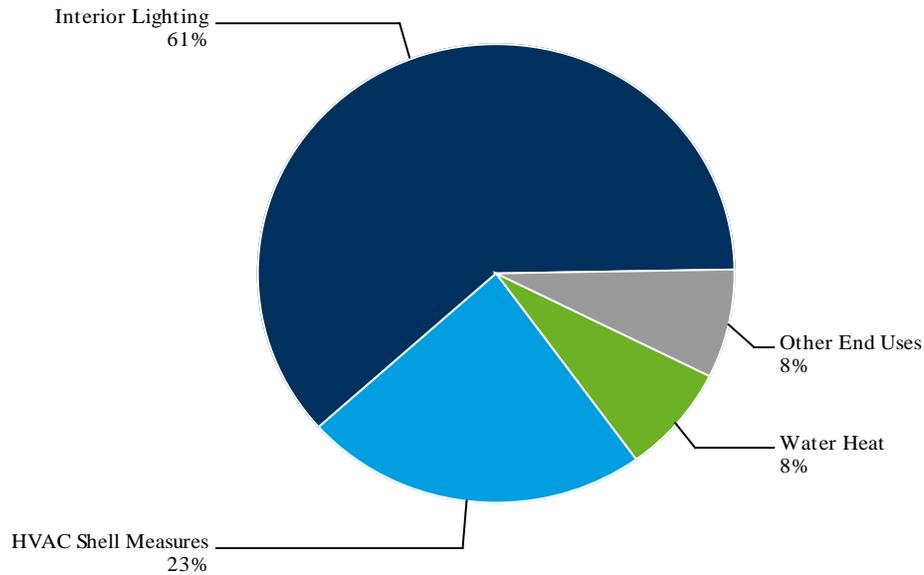
Note: 'Other End Uses' includes:
Water Heat: 3%, Refrigeration: 2%, Cooling: 2%, Vending Machine: 1%, Printers: 1%, Heat Pump: 1%
Other: 0%, Exterior Lighting: 0%, Servers: 0%, Fax: 0%, Other Plug Load: 0%, Dryer: 0%

Figure A.4.3.17 Electric Economic Potential: Commercial Grocery by End Use



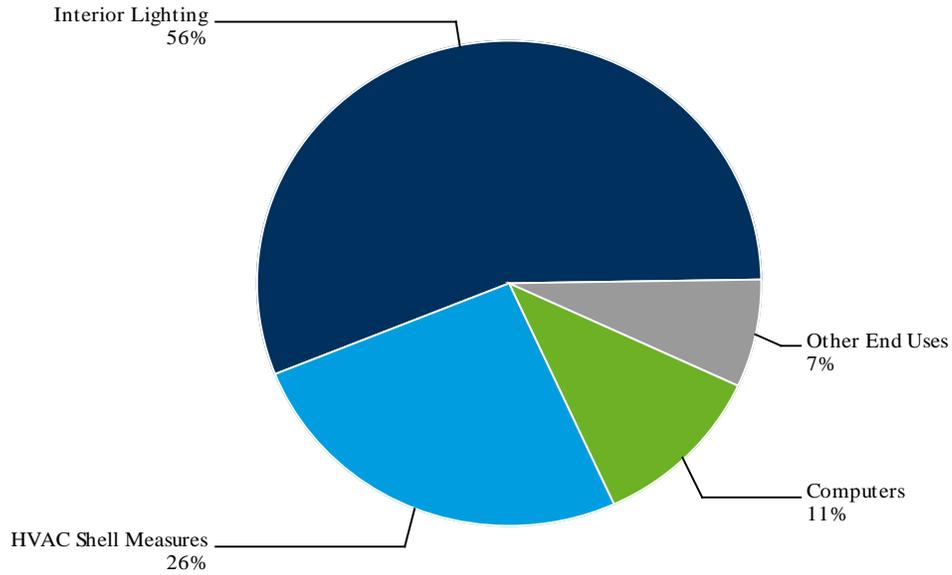
Note: 'Other End Uses' includes:
Water Heat: 1%, Cooling: 1%, Cooking: 0%, Vending Machine: 0%, Computers: 0%, Heat Pump: 0%
Printers: 0%, Servers: 0%, Other: 0%, Fax: 0%, Exterior Lighting: 0%, Other Plug Load: 0%

Figure A.4.3.18 Electric Economic Potential: Commercial Health by End Use



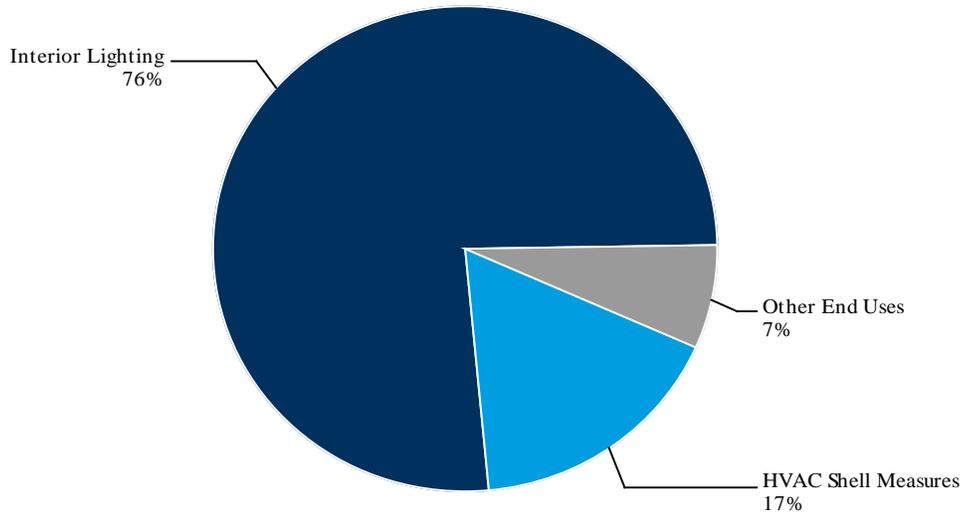
Note: 'Other End Uses' includes:
Computers: 3%, Cooling: 2%, Refrigeration: 1%, Vending Machine: 1%, Printers: 0%, Heat Pump: 0%
Other: 0%, Other Plug Load: 0%, Servers: 0%, Cooking: 0%, Fax: 0%, Dryer: 0%

Figure A.4.3.19 Electric Economic Potential: Commercial Large Office by End Use



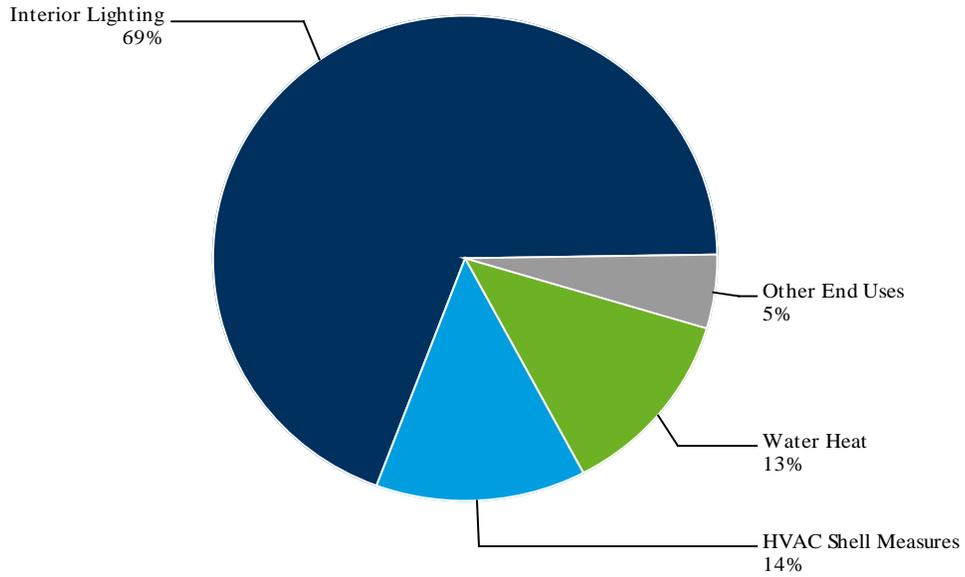
Note: 'Other End Uses' includes:
Water Heat: 2%, Cooling: 2%, Printers: 2%, Servers: 1%, Vending Machine: 1%, Other Plug Load: 0%

Figure A.4.3.20 Electric Economic Potential: Commercial Large Retail by End Use



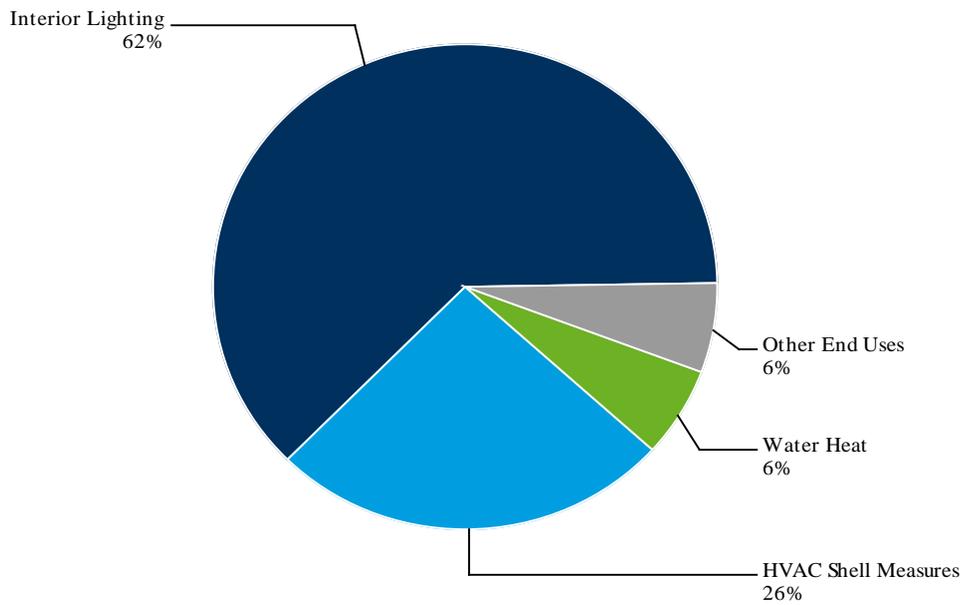
Note: 'Other End Uses' includes:
Refrigeration: 2%, Water Heat: 1%, Computers: 1%, Cooling: 1%, Vending Machine: 1%, Exterior Lighting: 0%

Figure A.4.3.21 Electric Economic Potential: Commercial Lodging by End Use



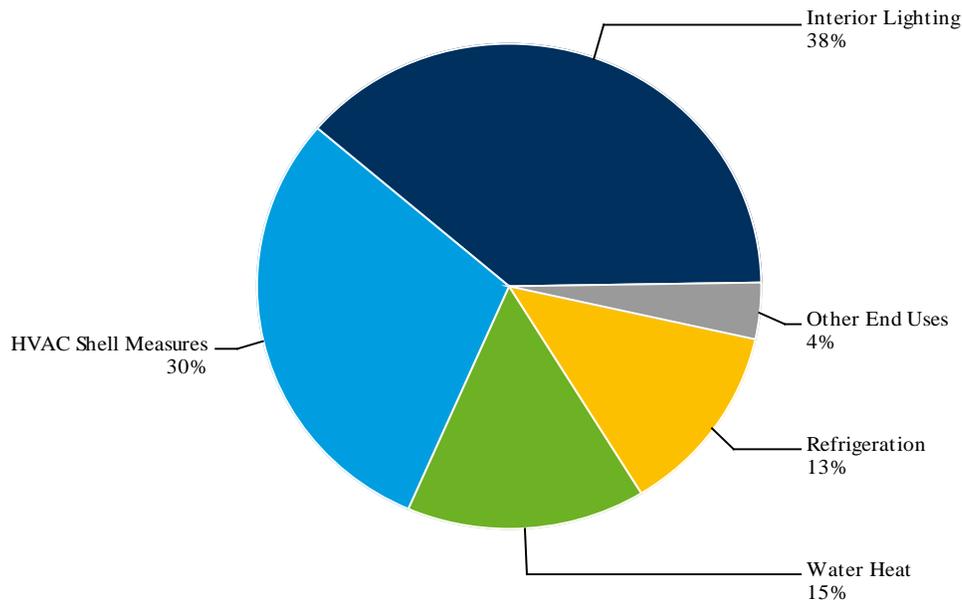
Note: 'Other End Uses' includes:
Refrigeration: 2%, Vending Machine: 1%, Cooling: 1%, Computers: 1%, Heat Pump: 0%, Printers: 0%

Figure A.4.3.22 Electric Economic Potential: Commercial Other Commercial by End Use



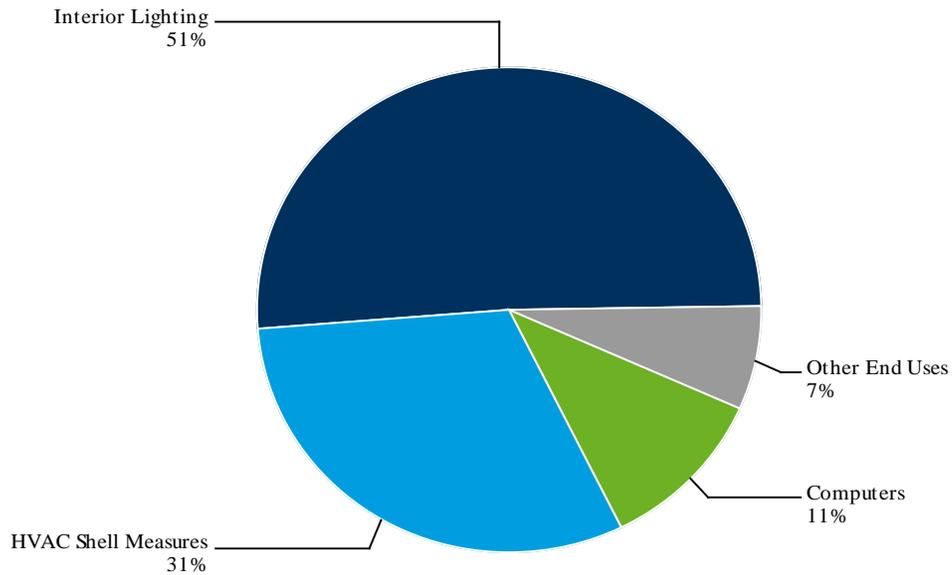
Note: 'Other End Uses' includes:
Cooling: 2%, Computers: 1%, Refrigeration: 1%, Vending Machine: 1%, Heat Pump: 0%, Exterior Lighting: 0%

Figure A.4.3.23 Electric Economic Potential: Commercial Restaurant by End Use



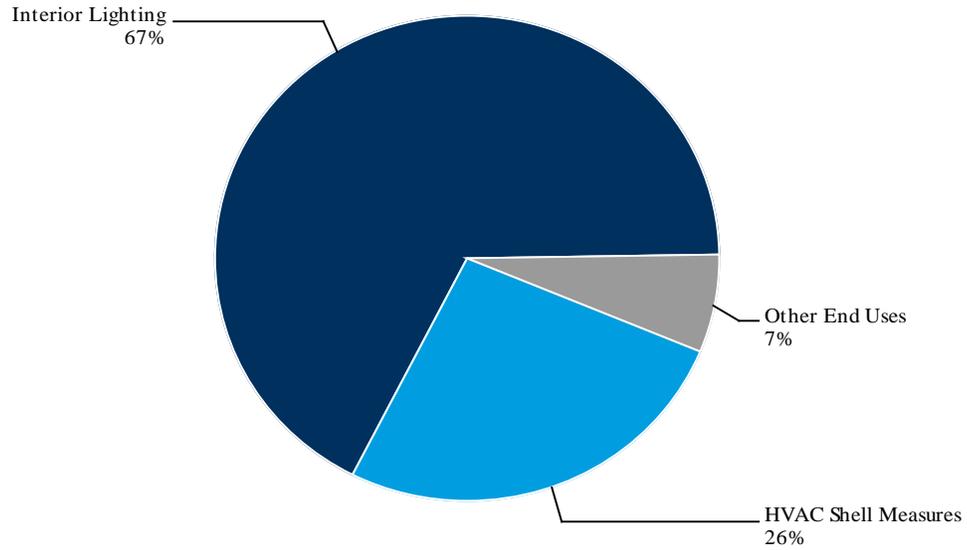
Note: 'Other End Uses' includes:
Cooling: 2%, Vending Machine: 0%, Heat Pump: 0%, Computers: 0%, Cooking: 0%, Fax: 0%

Figure A.4.3.24 Electric Economic Potential: Commercial Small Office by End Use



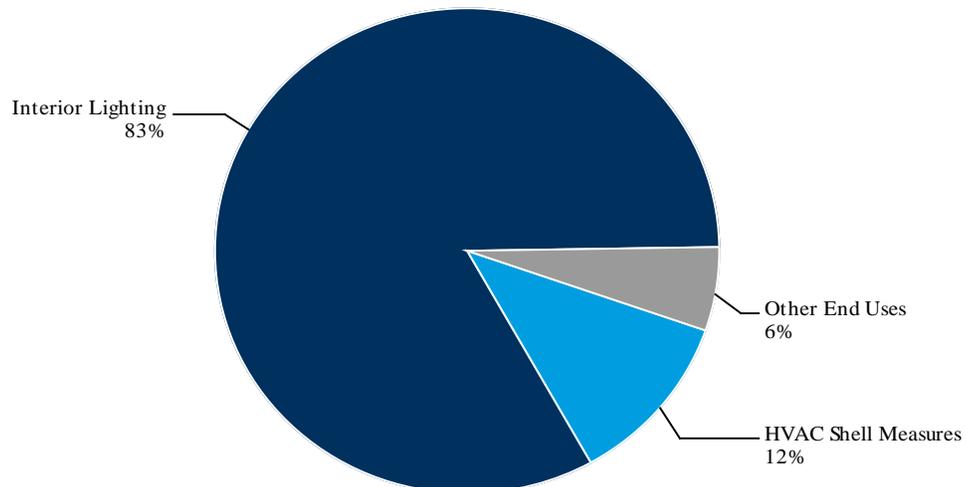
Note: 'Other End Uses' includes:
Cooling: 2%, Printers: 2%, Water Heat: 1%, Servers: 1%, Vending Machine: 1%, Heat Pump: 0%

Figure A.4.3.25 Electric Economic Potential: Commercial Small Retail by End Use



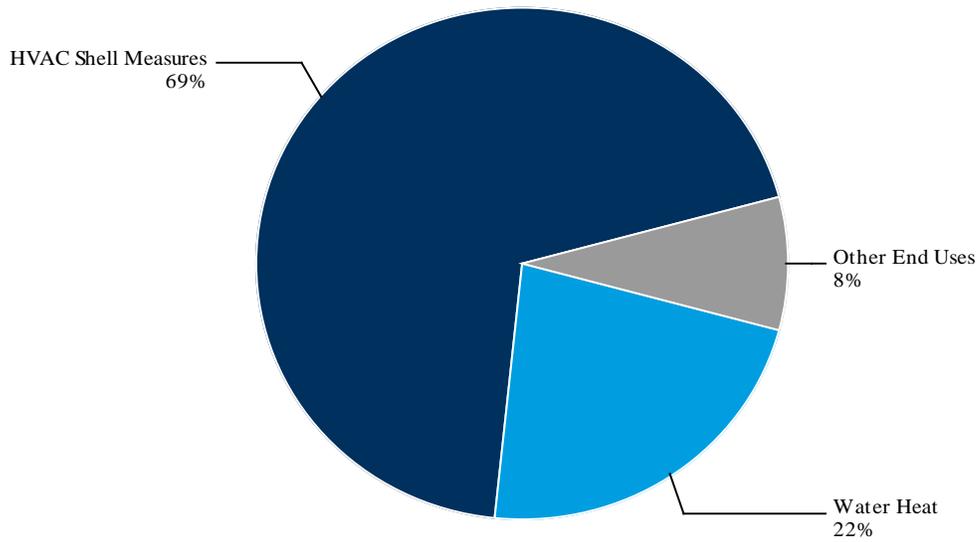
Note: 'Other End Uses' includes:
Cooling: 2%, Computers: 1%, Water Heat: 1%, Vending Machine: 1%, Printers: 0%, Heat Pump: 0%

Figure A.4.3.26 Electric Economic Potential: Commercial Warehouse by End Use



Note: 'Other End Uses' includes:
Computers: 2%, Water Heat: 1%, Vending Machine: 1%, Exterior Lighting: 1%, Cooling: 1%, Printers: 0%

Figure A.4.4.1 Gas Technical Potential: Commercial by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.2 Gas Technical Potential: Commercial Convenience by End Use

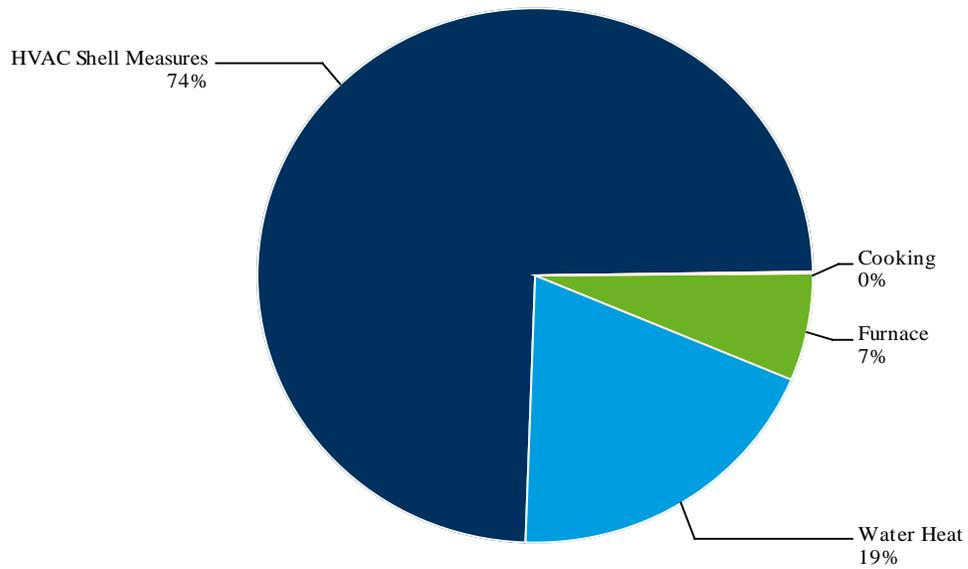
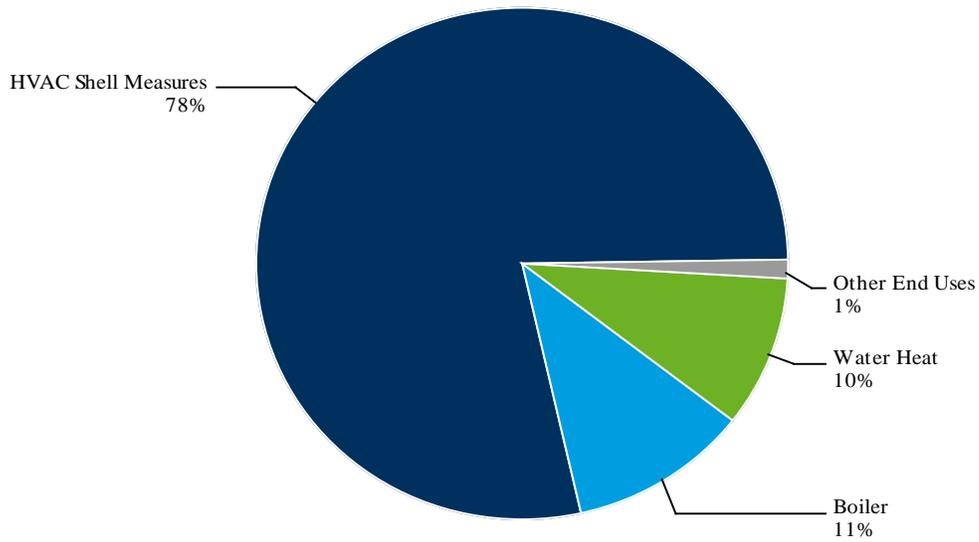


Figure A.4.4.3 Gas Technical Potential: Commercial Education by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.4 Gas Technical Potential: Commercial Grocery by End Use

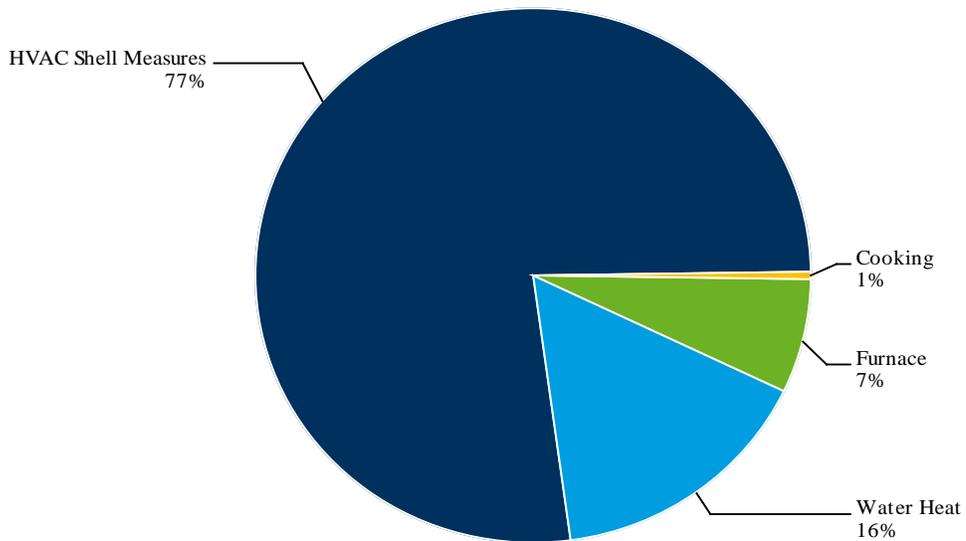


Figure A.4.4.5 Gas Technical Potential: Commercial Health by End Use

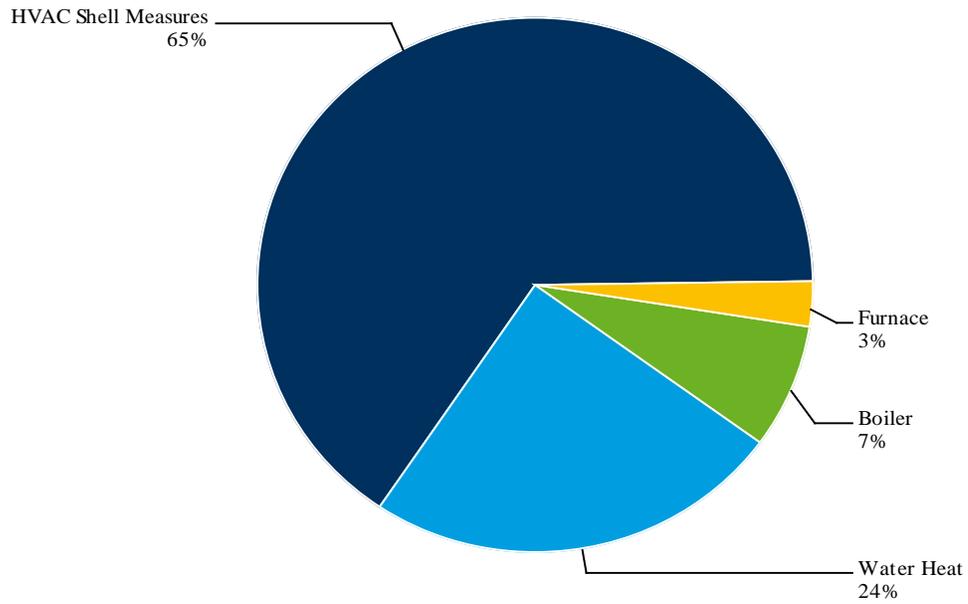


Figure A.4.4.6 Gas Technical Potential: Commercial Large Office by End Use

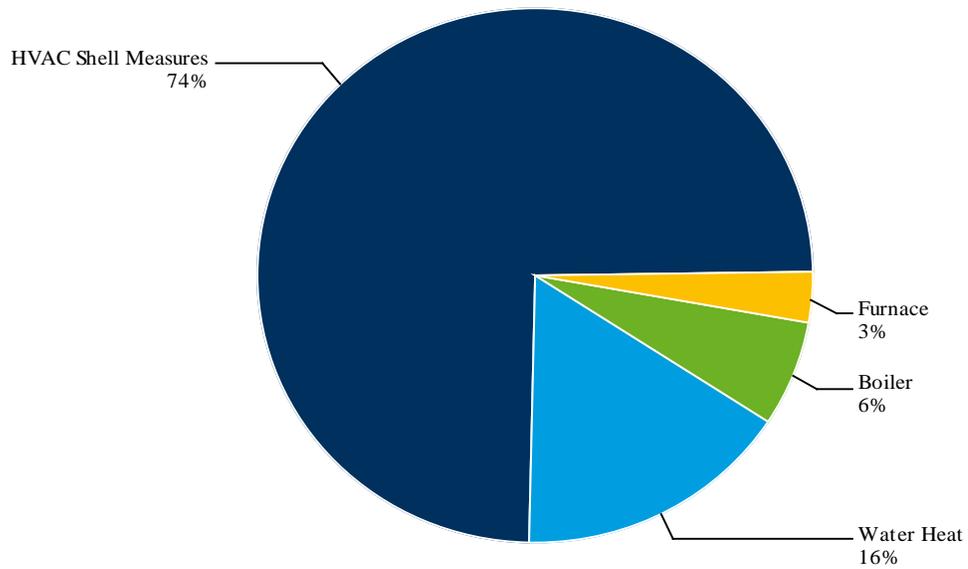
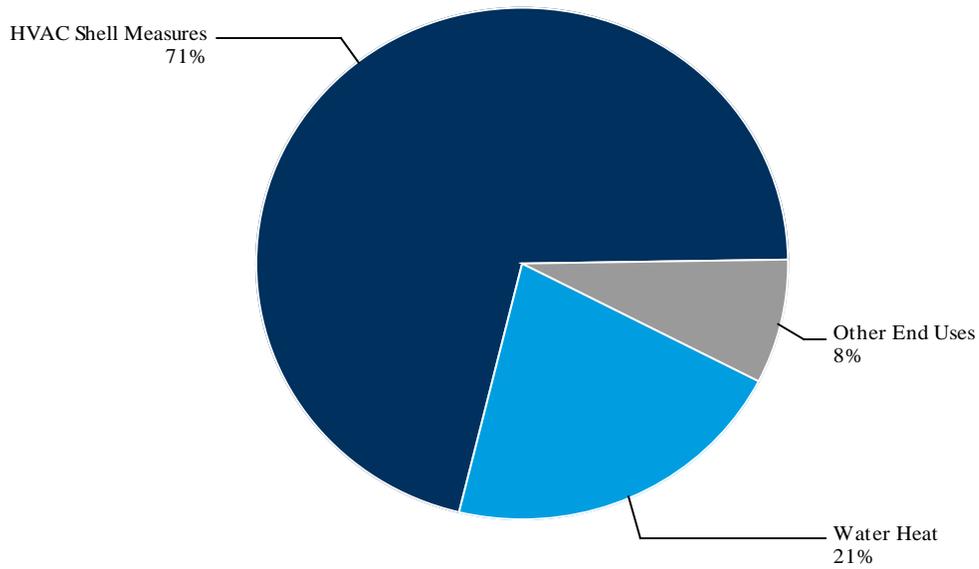
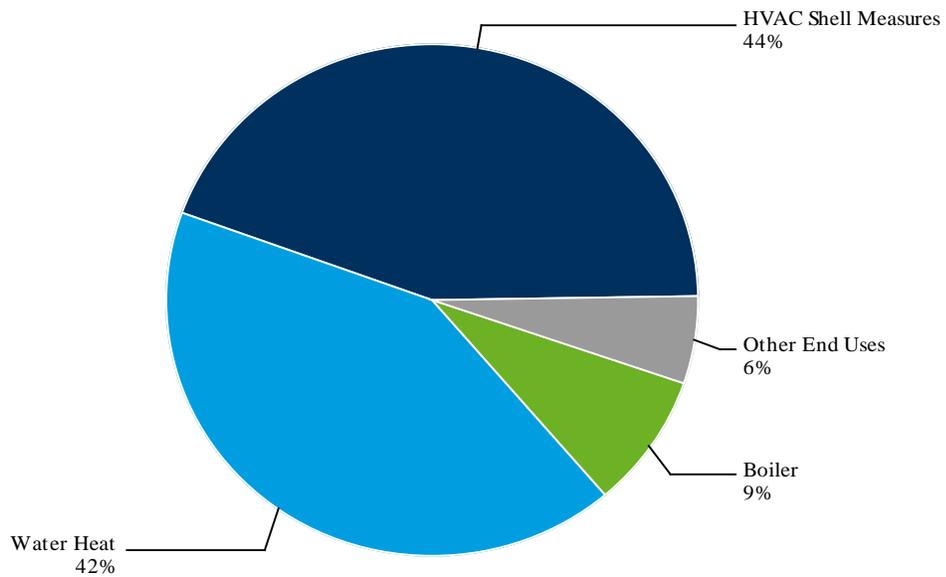


Figure A.4.4.7 Gas Technical Potential: Commercial Large Retail by End Use



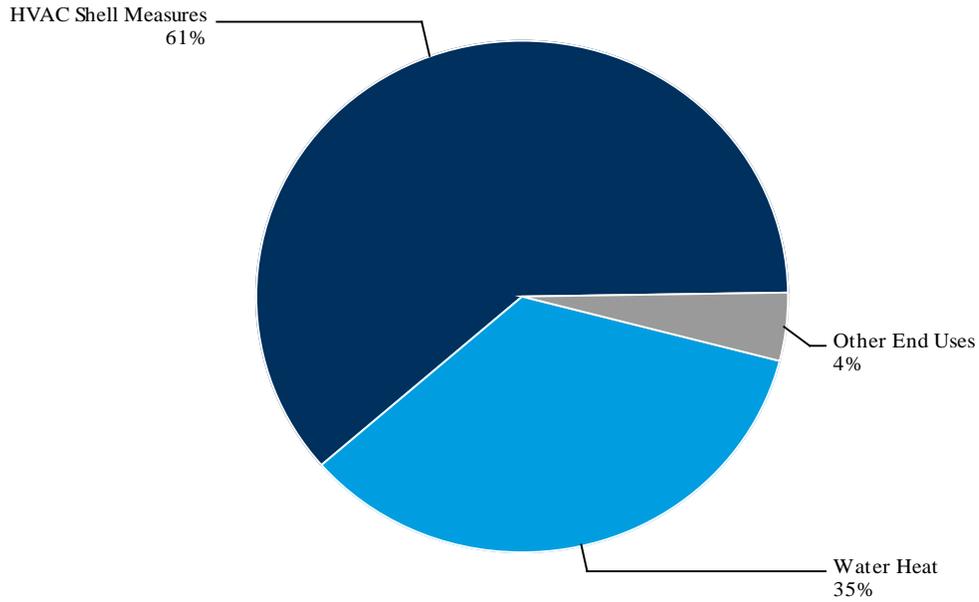
Note: 'Other End Uses' includes:

Figure A.4.4.8 Gas Technical Potential: Commercial Lodging by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.9 Gas Technical Potential: Commercial Other Commercial by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.10 Gas Technical Potential: Commercial Restaurant by End Use

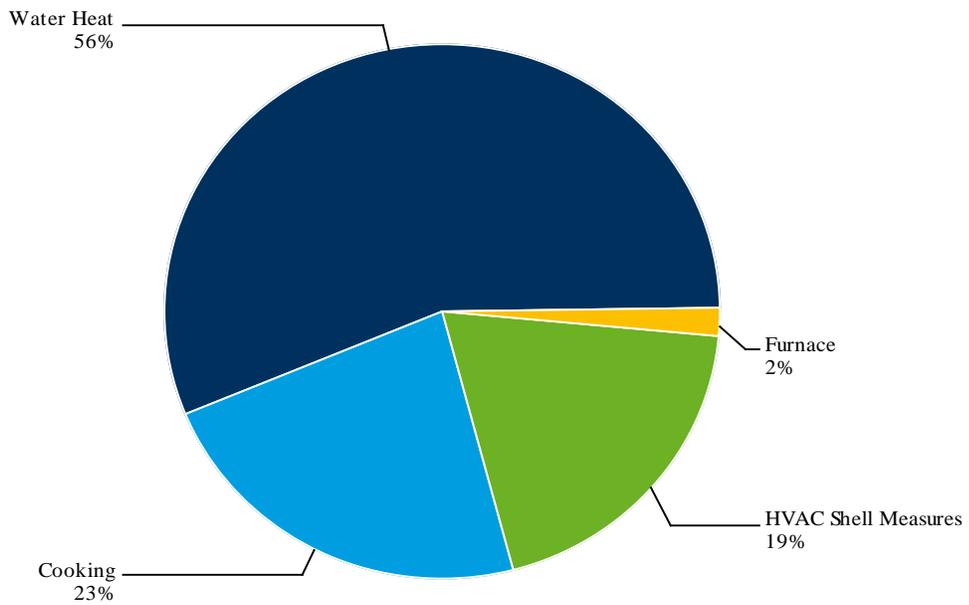


Figure A.4.4.11 Gas Technical Potential: Commercial Small Office by End Use

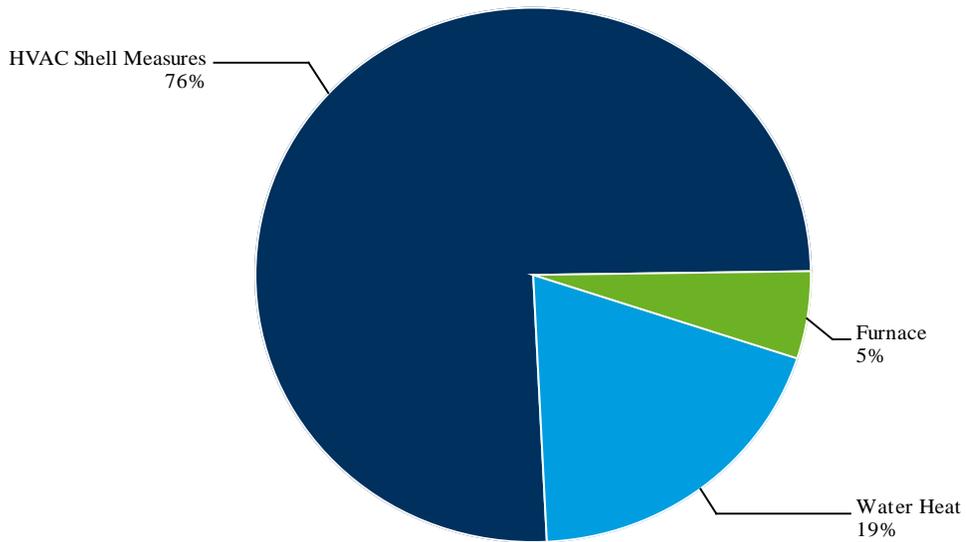


Figure A.4.4.12 Gas Technical Potential: Commercial Small Retail by End Use

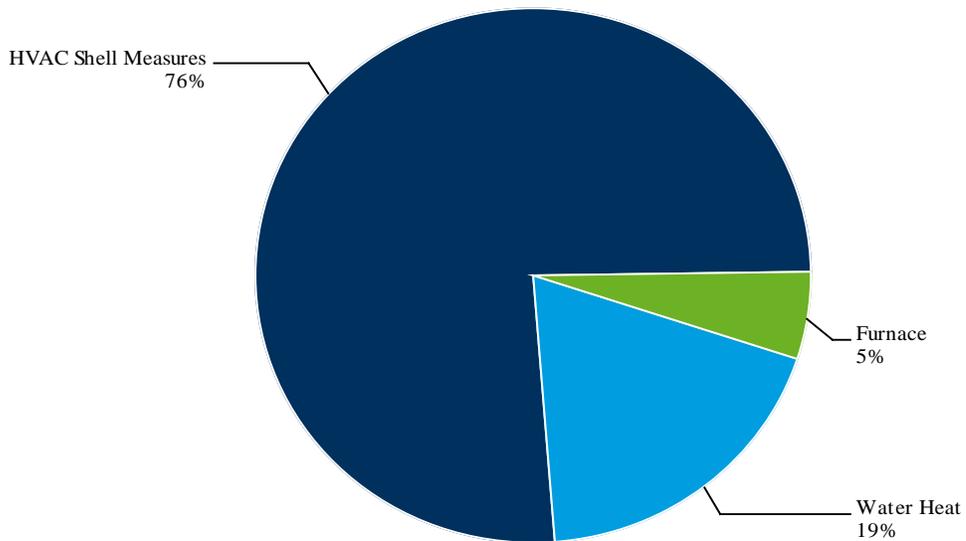


Figure A.4.4.13 Gas Technical Potential: Commercial Warehouse by End Use

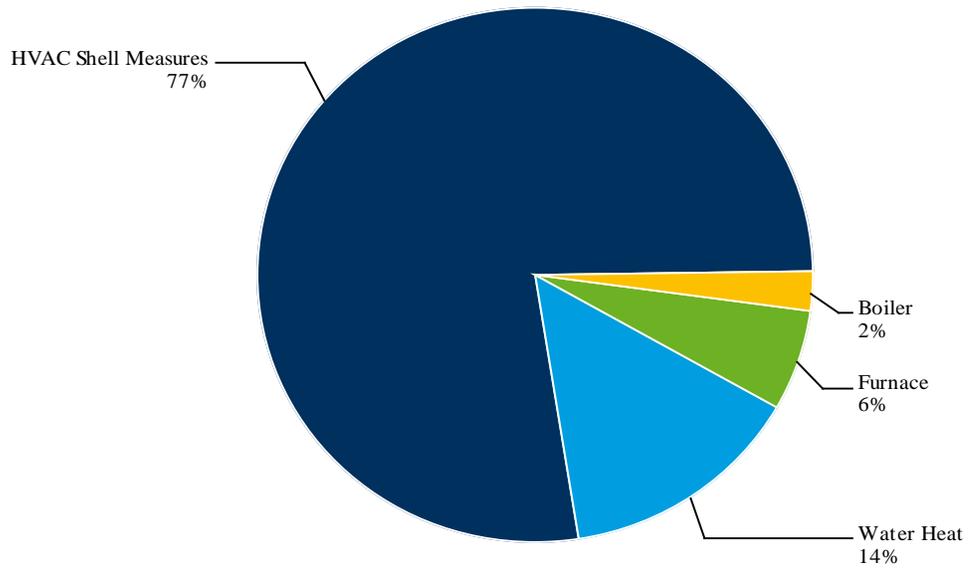
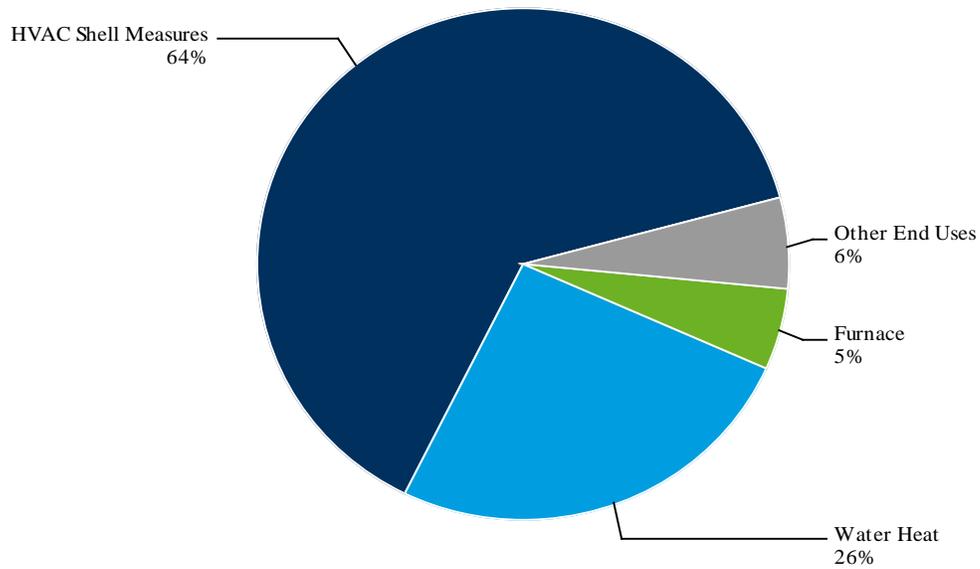


Figure A.4.4.14 Gas Economic Potential: Commercial by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.15 Gas Economic Potential: Commercial Convenience by End Use

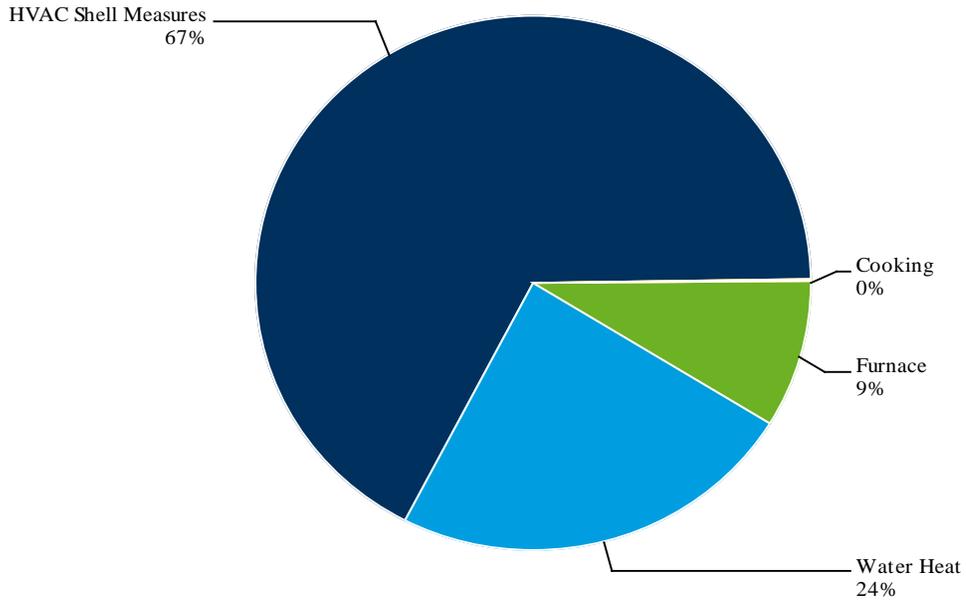
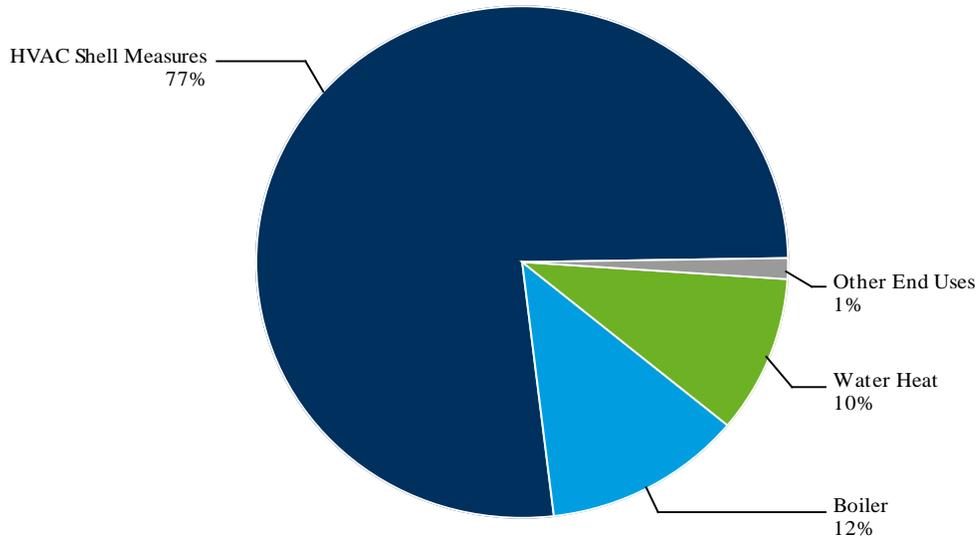


Figure A.4.4.16 Gas Economic Potential: Commercial Education by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.17 Gas Economic Potential: Commercial Grocery by End Use

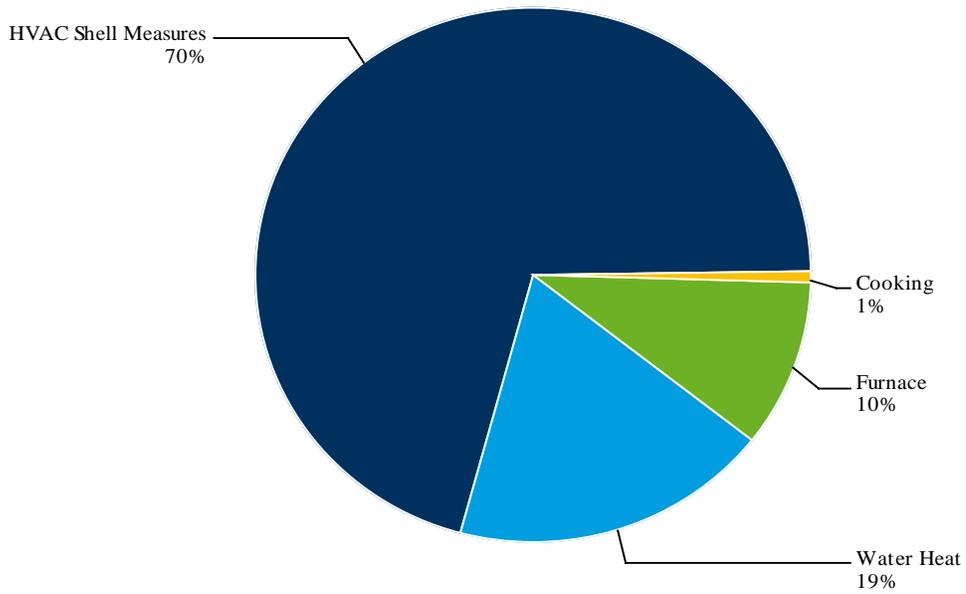


Figure A.4.4.18 Gas Economic Potential: Commercial Health by End Use

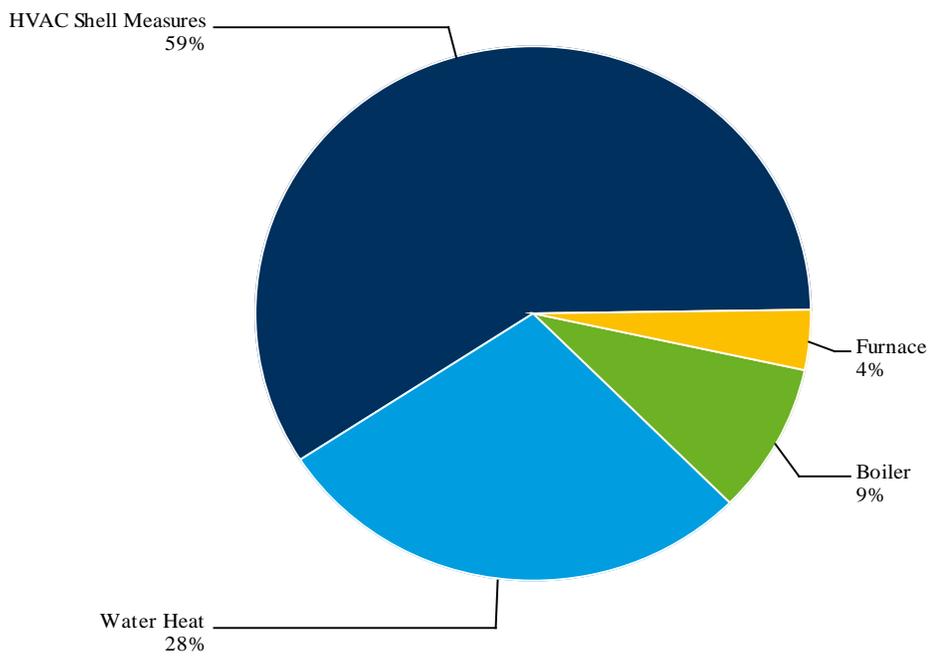


Figure A.4.4.19 Gas Economic Potential: Commercial Large Office by End Use

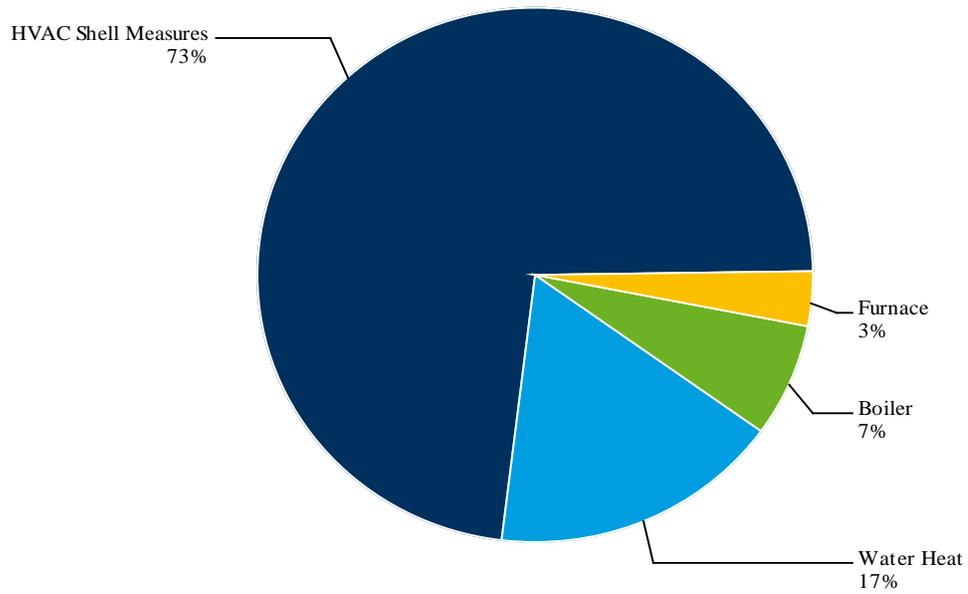


Figure A.4.4.20 Gas Economic Potential: Commercial Large Retail by End Use

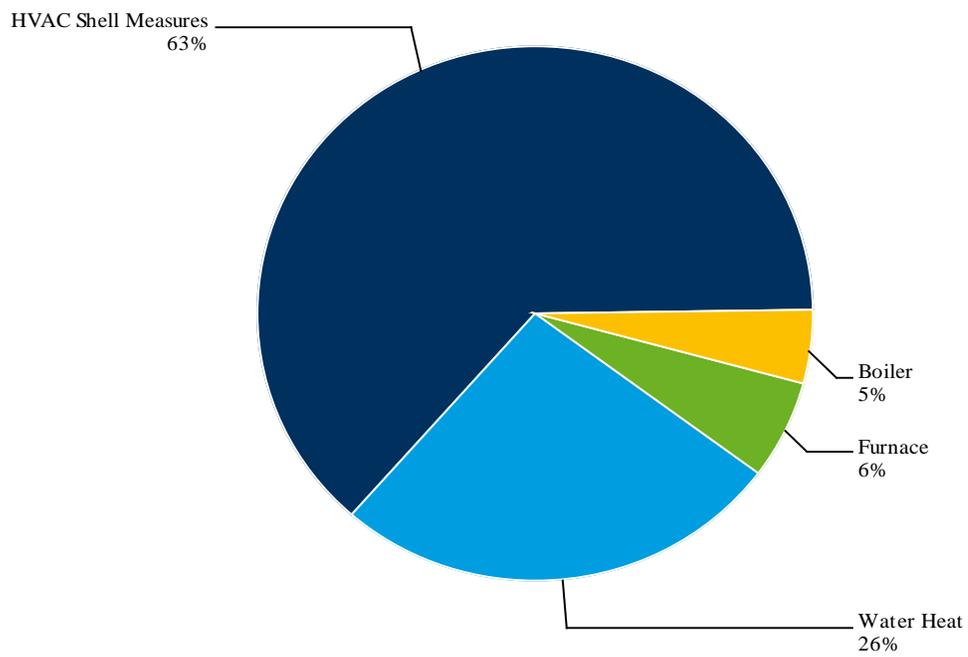
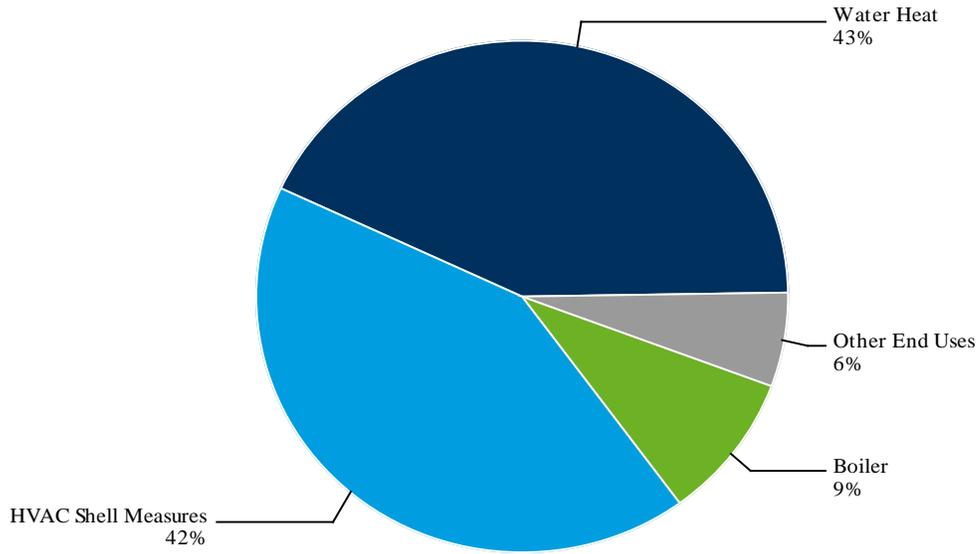


Figure A.4.4.21 Gas Economic Potential: Commercial Lodging by End Use



Note: 'Other End Uses' includes:

Figure A.4.4.22 Gas Economic Potential: Commercial Other Commercial by End Use

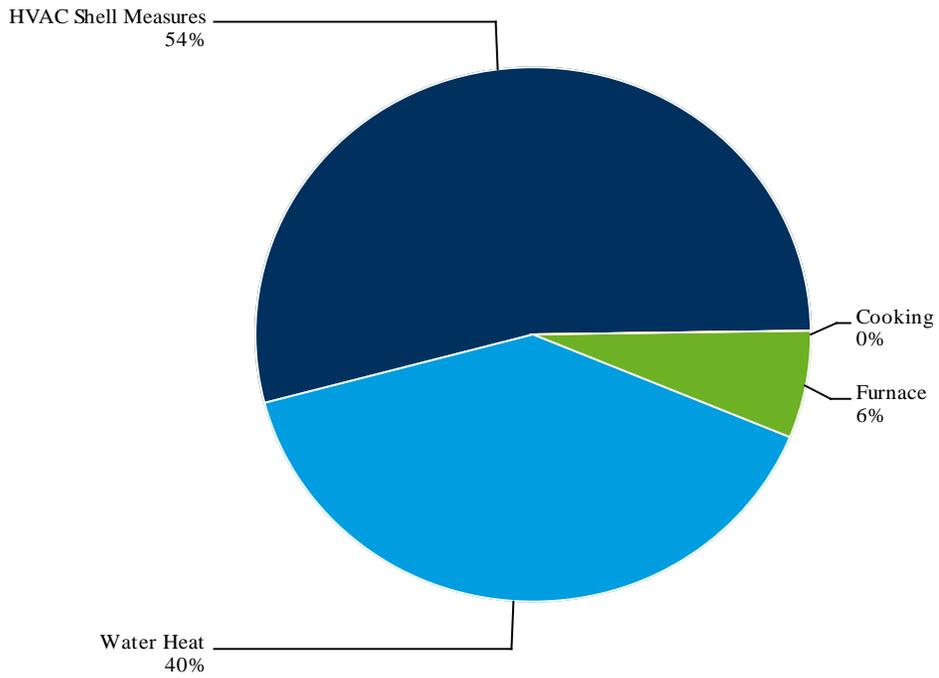


Figure A.4.4.23 Gas Economic Potential: Commercial Restaurant by End Use

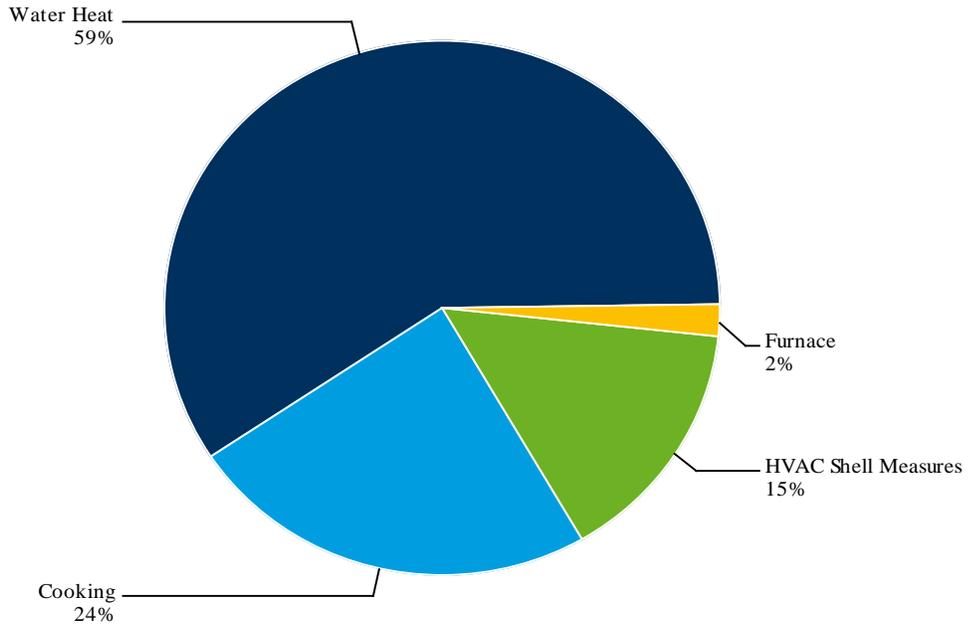


Figure A.4.4.24 Gas Economic Potential: Commercial Small Office by End Use

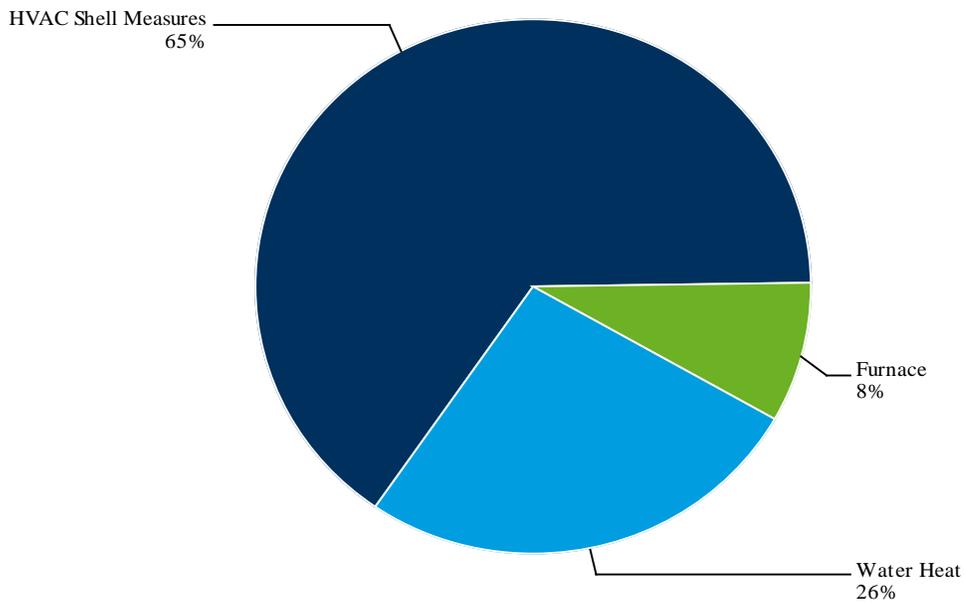


Figure A.4.4.25 Gas Economic Potential: Commercial Small Retail by End Use

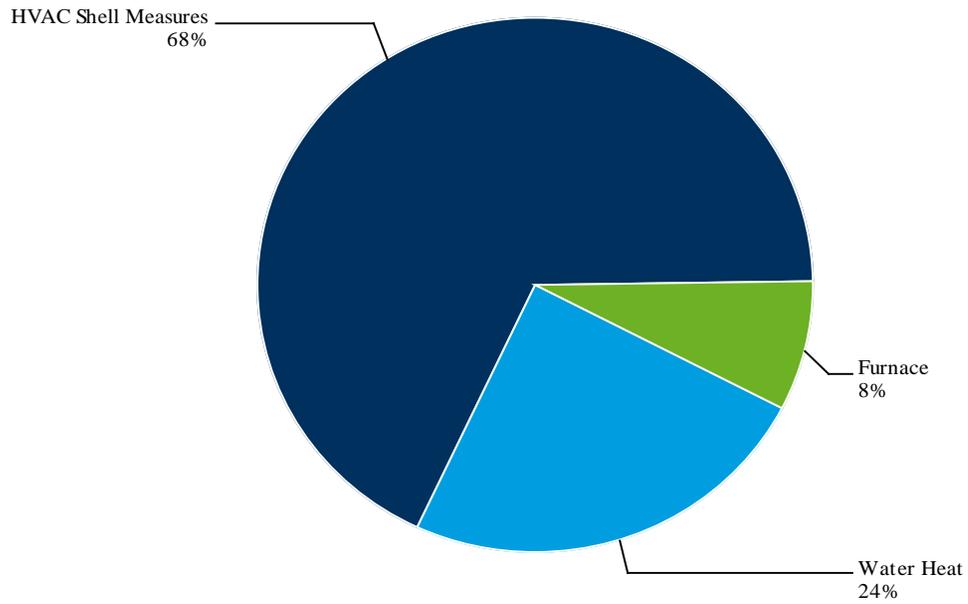


Figure A.4.4.26 Gas Economic Potential: Commercial Warehouse by End Use

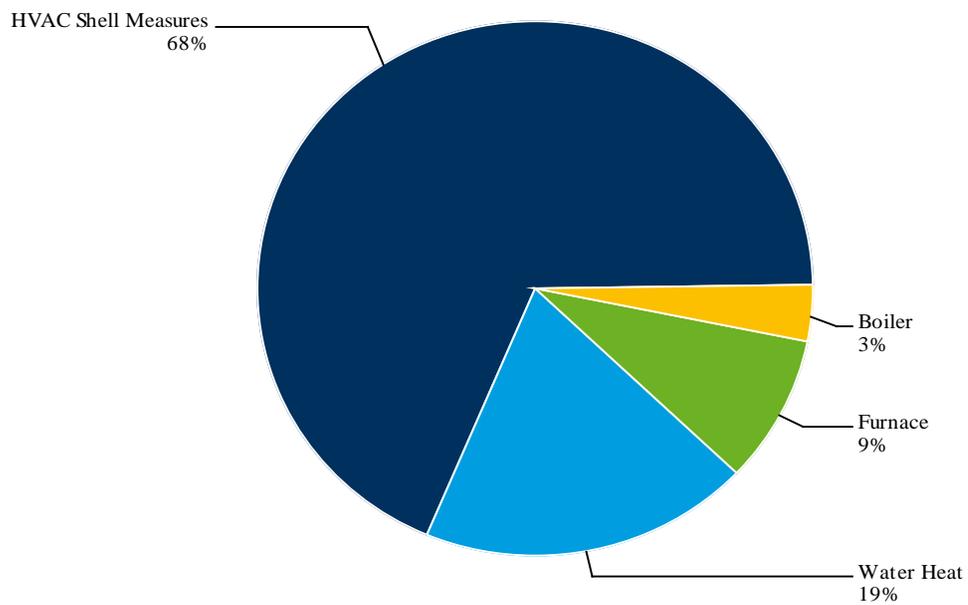
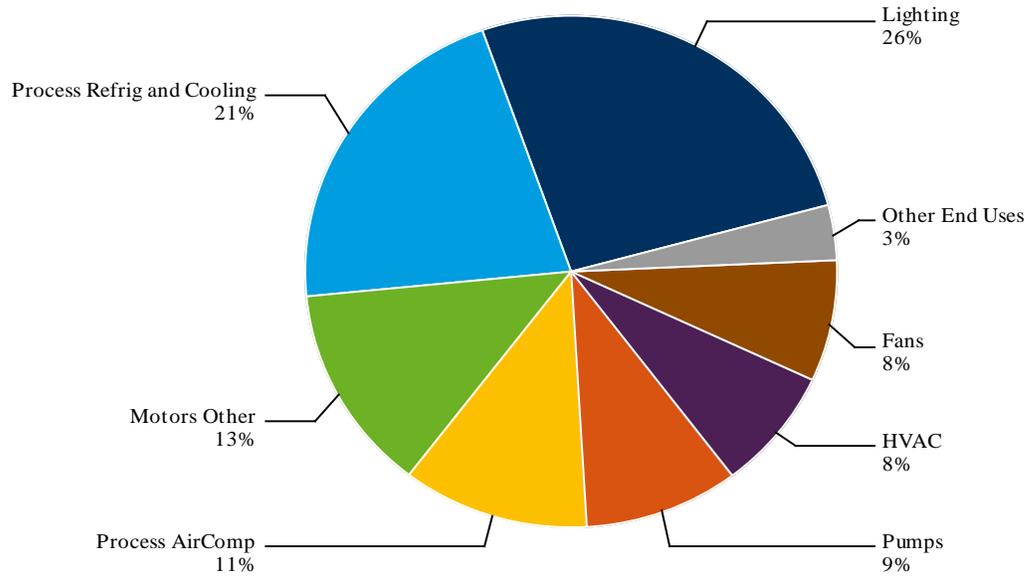
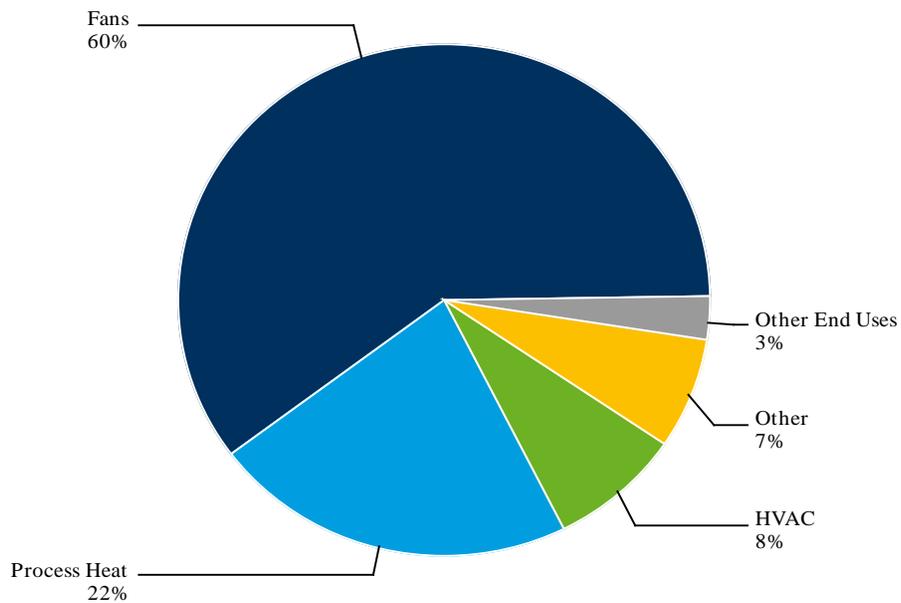


Figure A.4.5.1 Electric Technical Potential: Industrial by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.2 Electric Technical Potential: Industrial Agriculture by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.3 Electric Technical Potential: Industrial Chemical Mfg by End Use

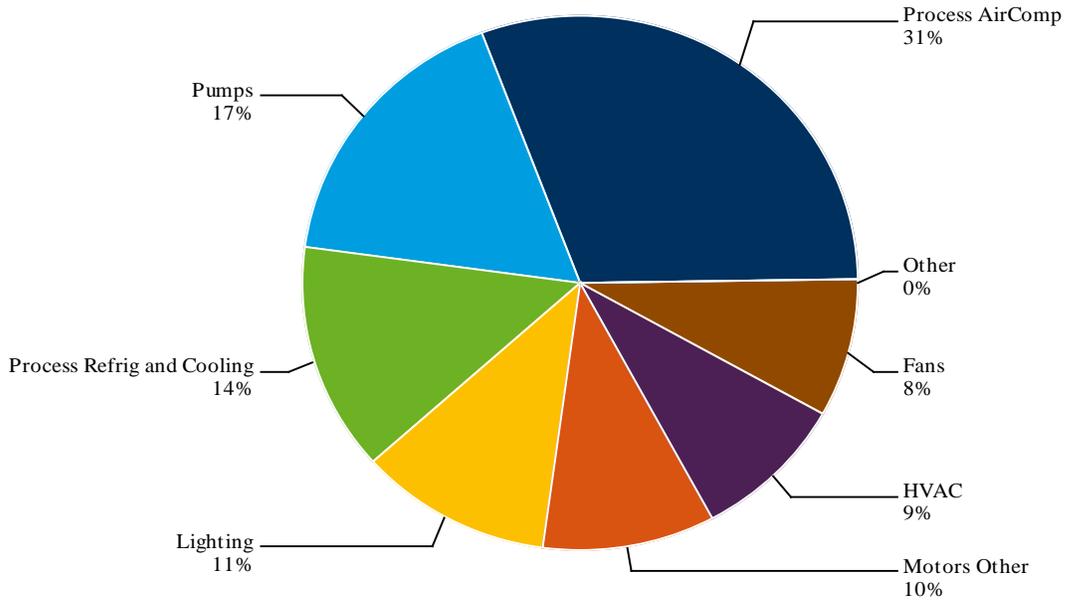
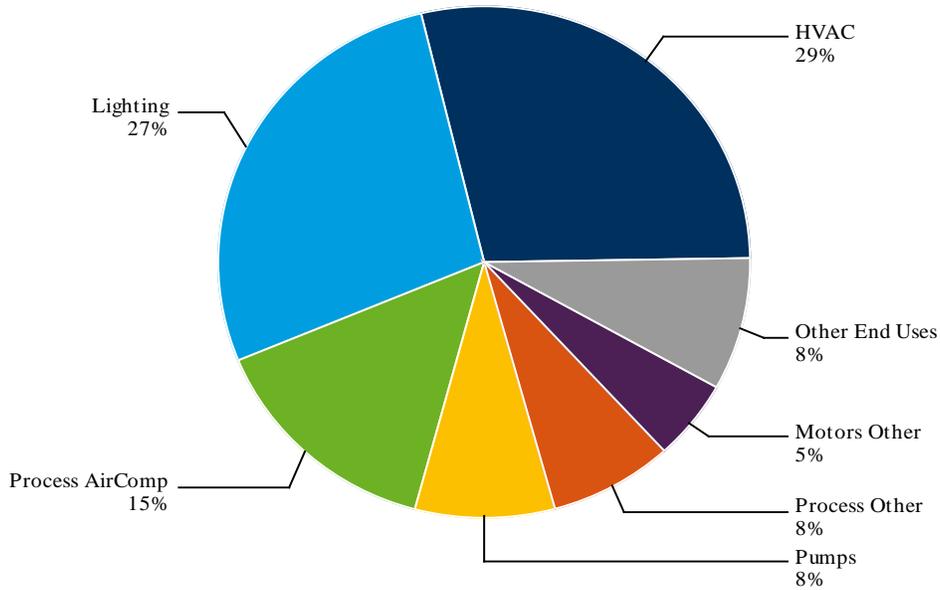
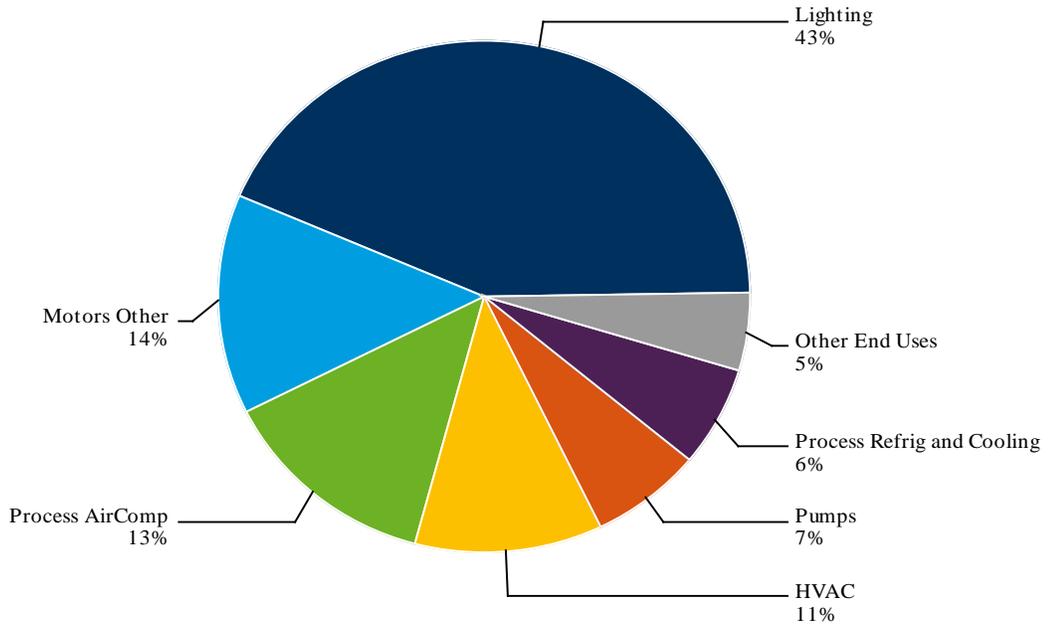


Figure A.4.5.4 Electric Technical Potential: Industrial Electrical Equipment Mfg by End Use



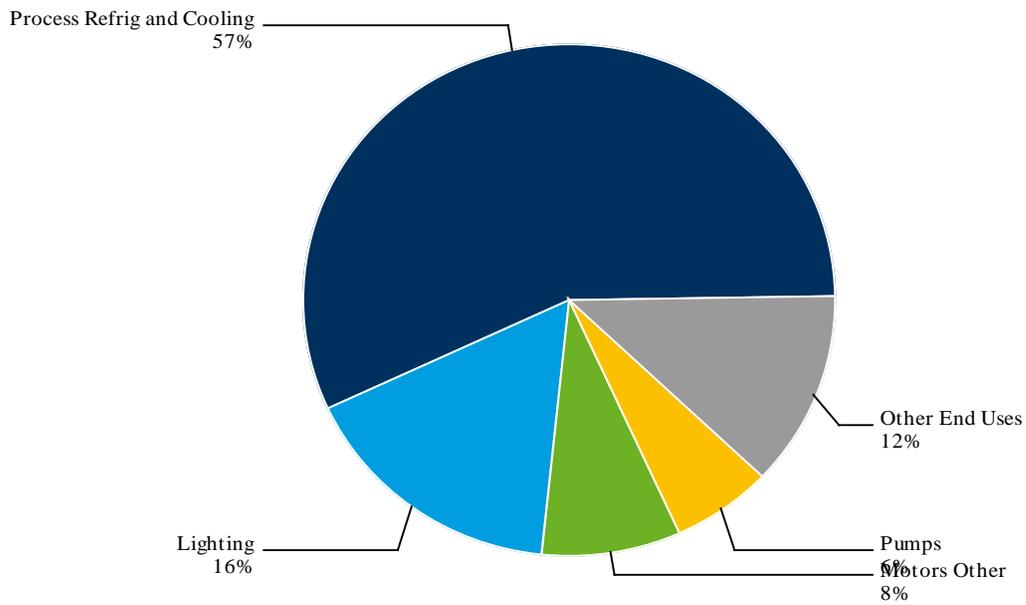
Note: 'Other End Uses' includes:

Figure A.4.5.5 Electric Technical Potential: Industrial Fabricated Metal Products by End Use



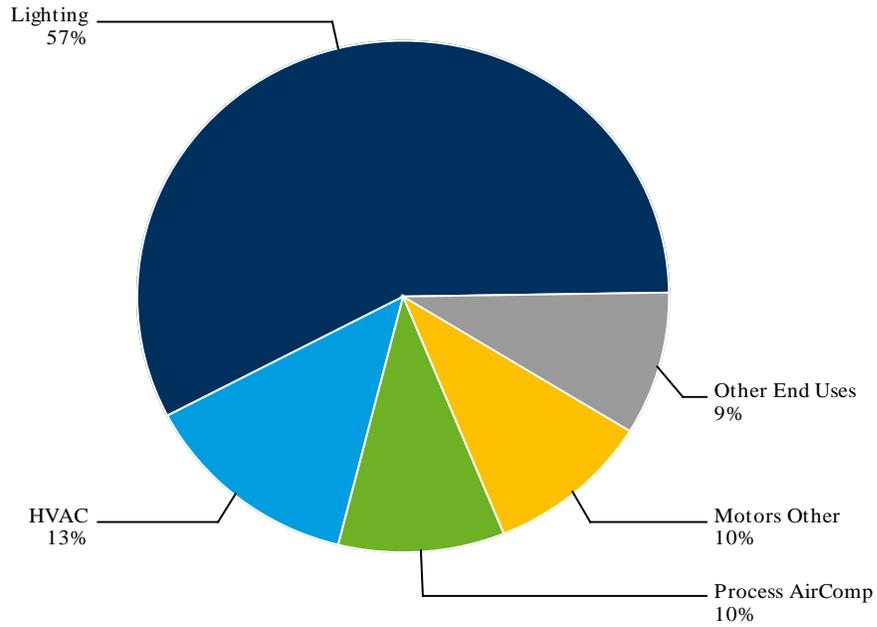
Note: 'Other End Uses' includes:

Figure A.4.5.6 Electric Technical Potential: Industrial Food Mfg by End Use



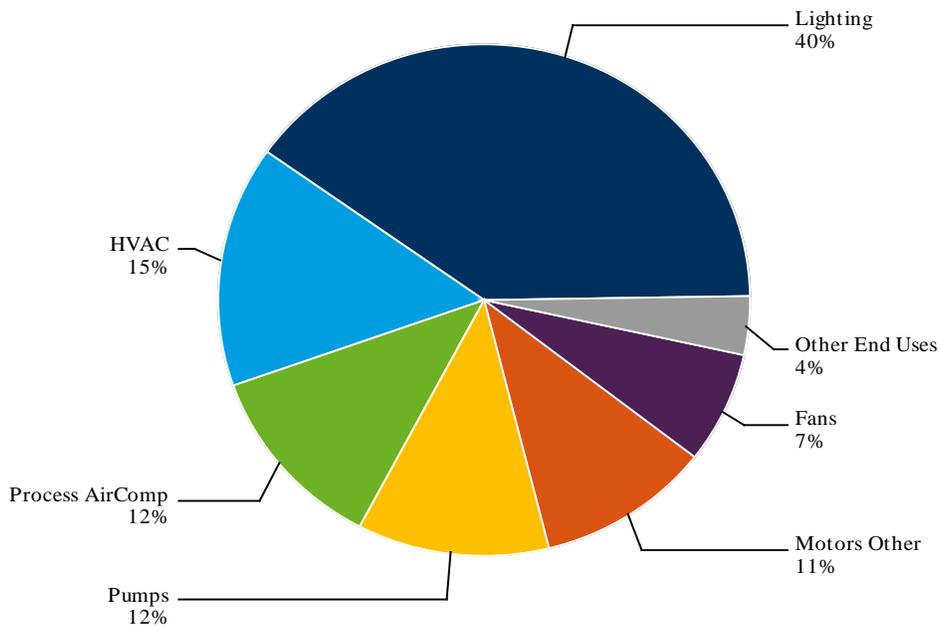
Note: 'Other End Uses' includes:

Figure A.4.5.7 Electric Technical Potential: Industrial Furniture Mfg by End Use



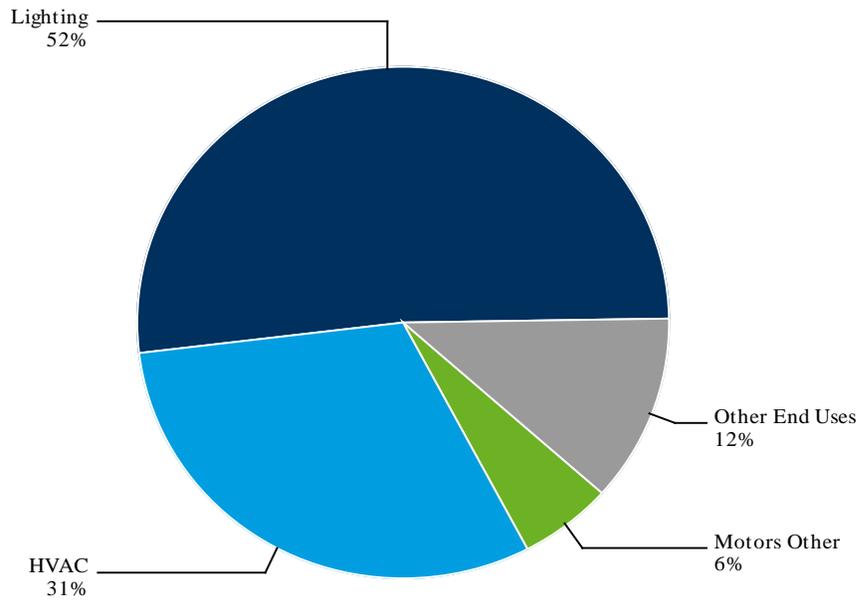
Note: 'Other End Uses' includes:

Figure A.4.5.8 Electric Technical Potential: Industrial Industrial Machinery by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.9 Electric Technical Potential: Industrial Instruments by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.10 Electric Technical Potential: Industrial Mining by End Use

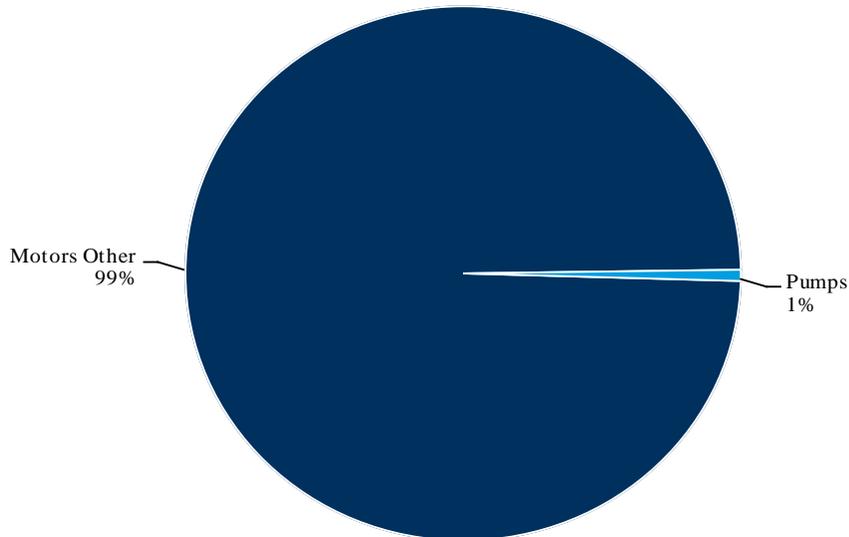
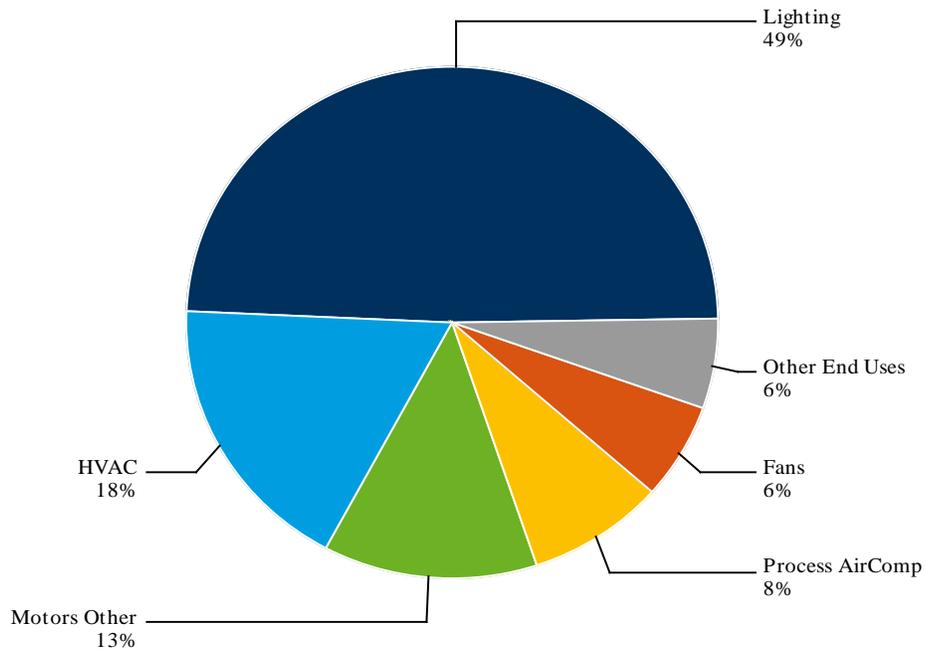
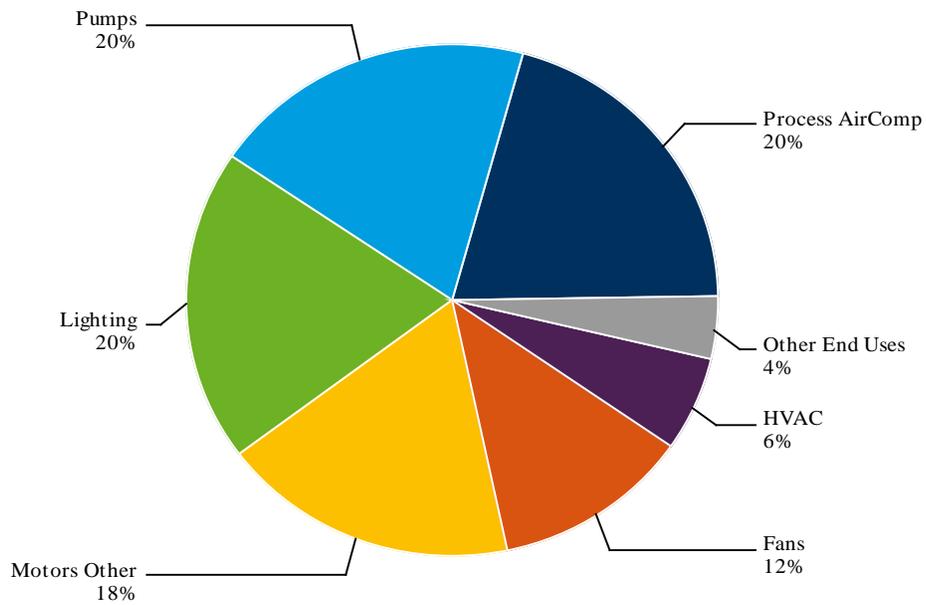


Figure A.4.5.11 Electric Technical Potential: Industrial Miscellaneous Mfg by End Use



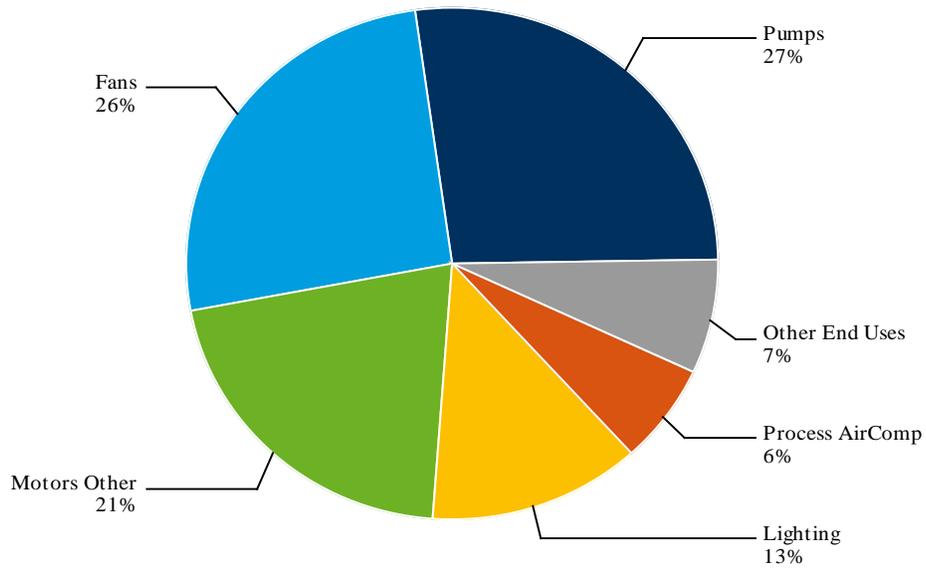
Note: 'Other End Uses' includes:

Figure A.4.5.12 Electric Technical Potential: Industrial Nonmetallic Mineral Products by End Use



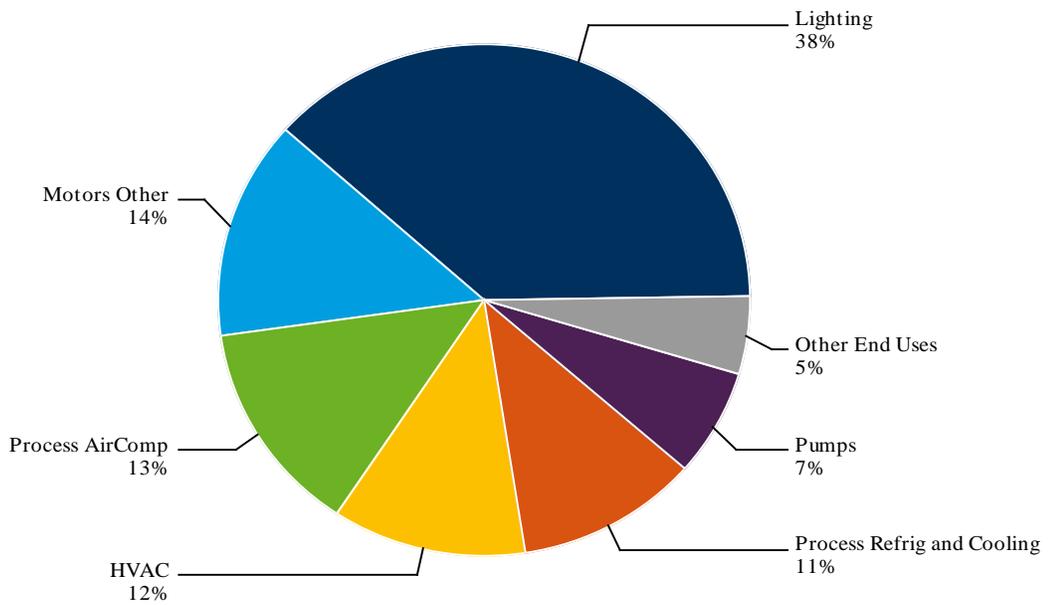
Note: 'Other End Uses' includes:

Figure A.4.5.13 Electric Technical Potential: Industrial Paper Mfg by End Use



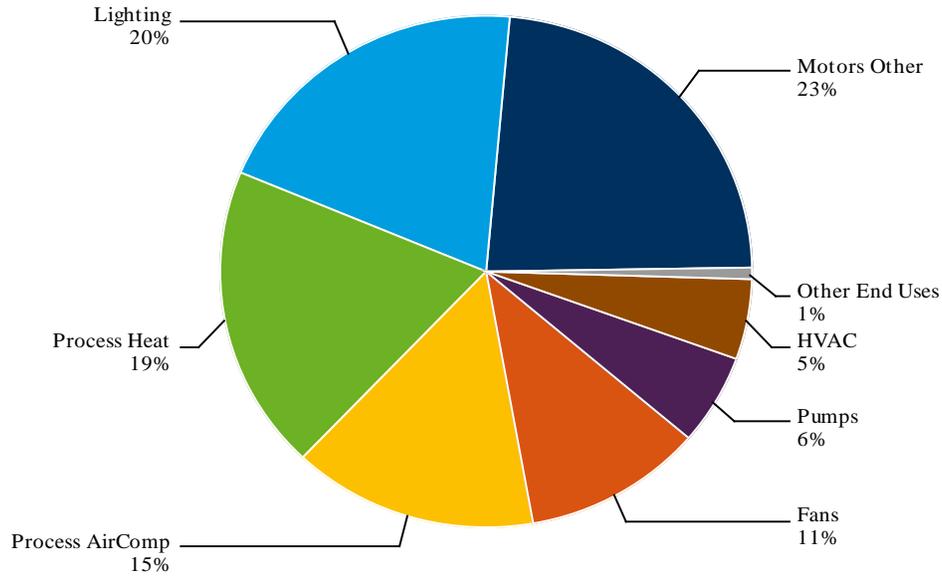
Note: 'Other End Uses' includes:

Figure A.4.5.14 Electric Technical Potential: Industrial Plastics Rubber Products by End Use



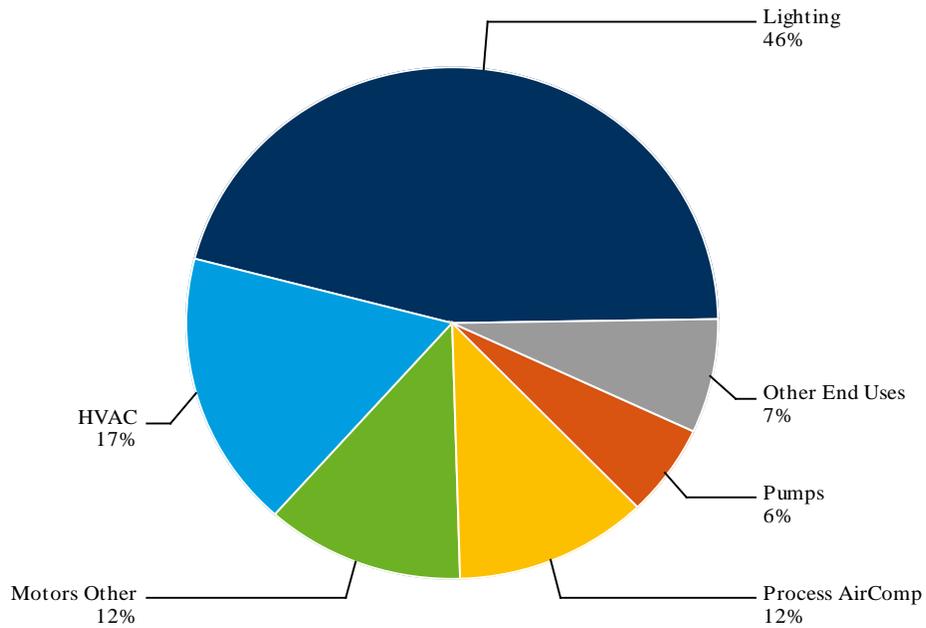
Note: 'Other End Uses' includes:

Figure A.4.5.15 Electric Technical Potential: Industrial Primary Metal Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.16 Electric Technical Potential: Industrial Printing Related Support by End Use

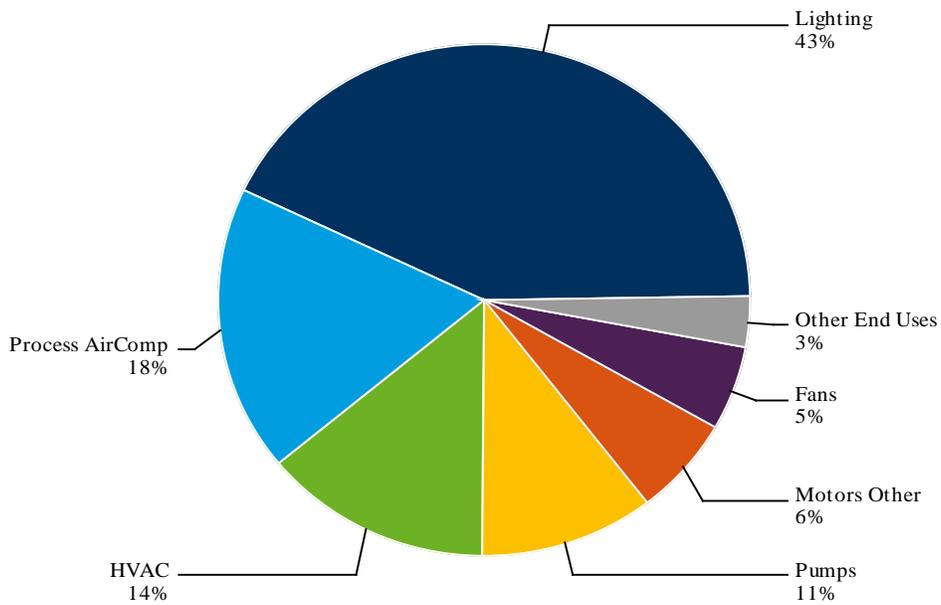


Note: 'Other End Uses' includes:

Figure A.4.5.17 Electric Technical Potential: Industrial Street Lighting by End Use

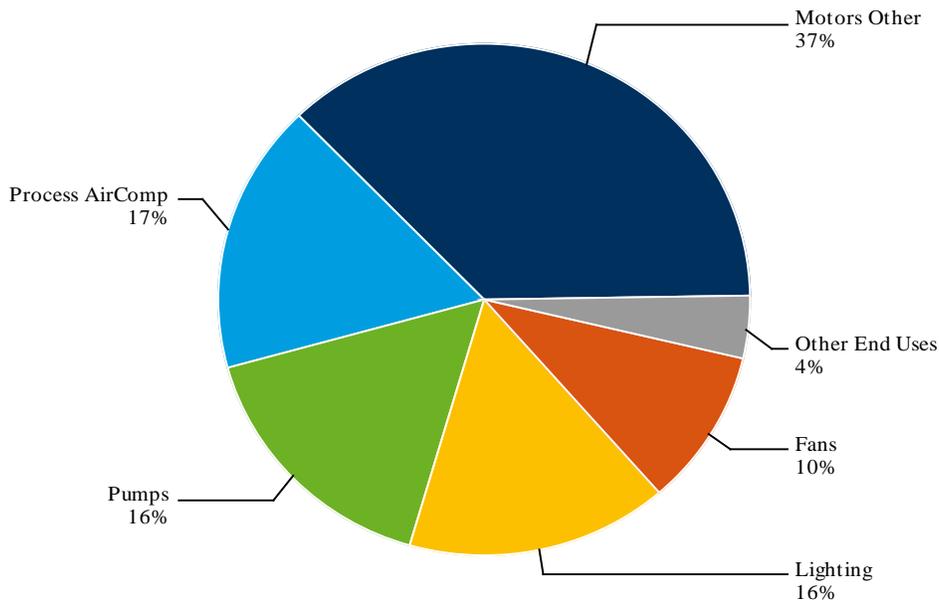
Lighting
100%

Figure A.4.5.18 Electric Technical Potential: Industrial Transportation Equipment Mfg by End Use



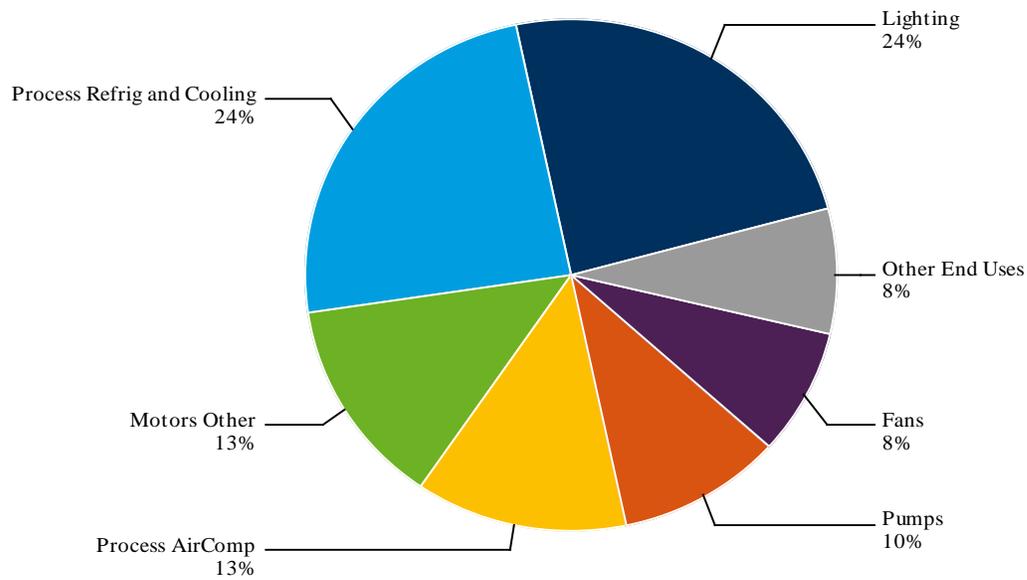
Note: 'Other End Uses' includes:

Figure A.4.5.19 Electric Technical Potential: Industrial Wood Product Mfg by End Use



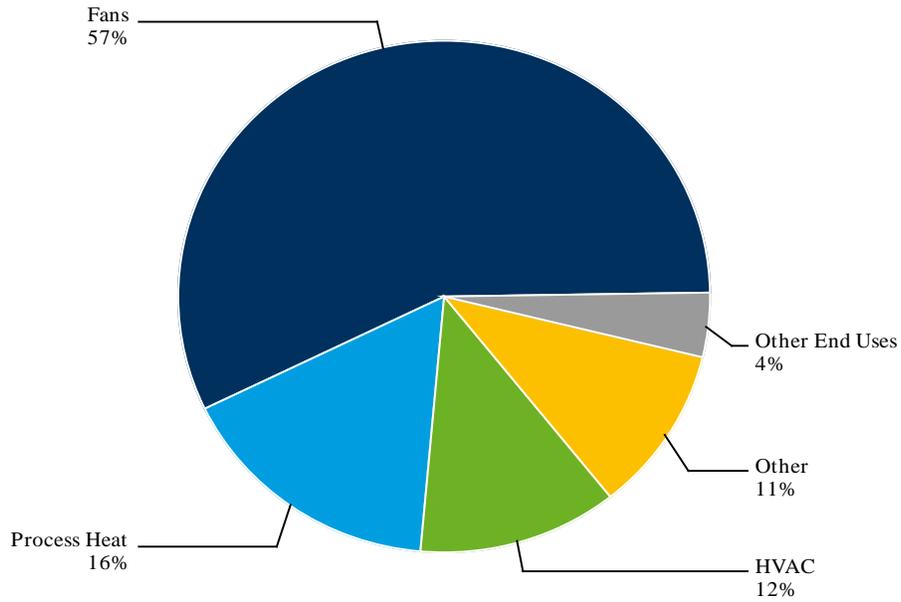
Note: 'Other End Uses' includes:

Figure A.4.5.20 Electric Economic Potential: Industrial by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.21 Electric Economic Potential: Industrial Agriculture by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.22 Electric Economic Potential: Industrial Chemical Mfg by End Use

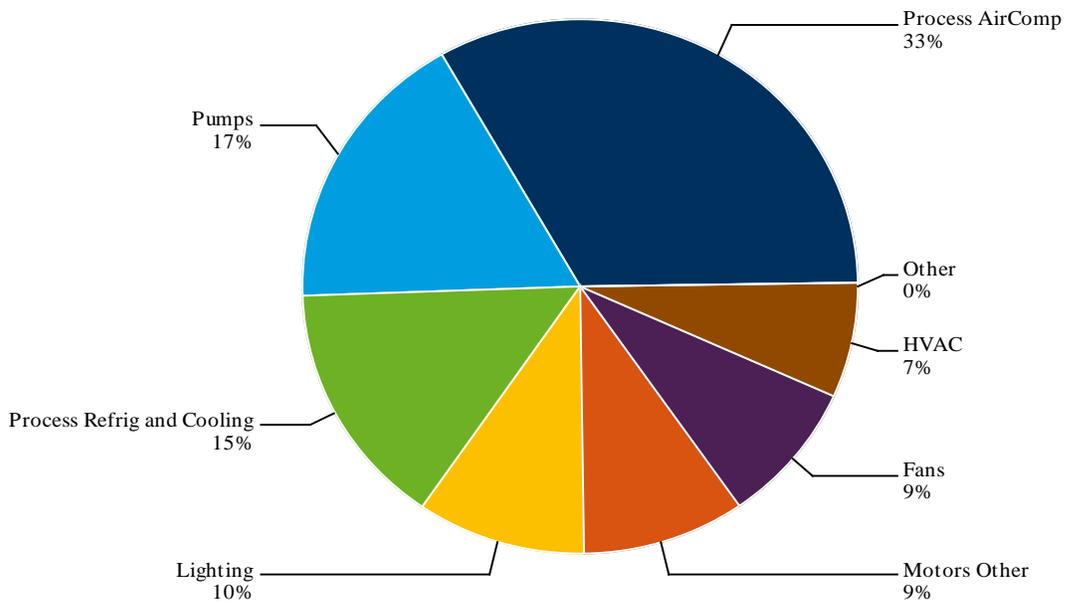
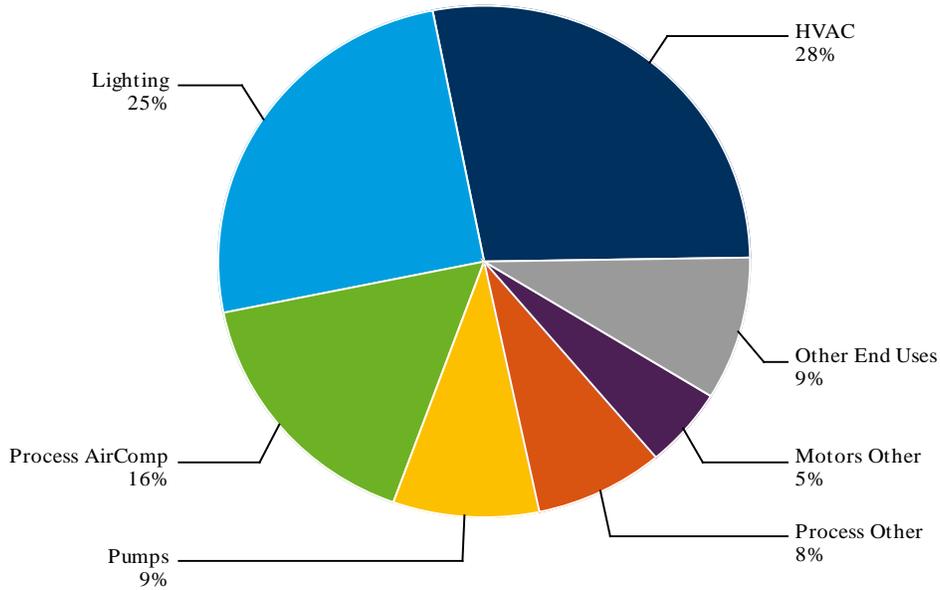


Figure A.4.5.23 Electric Economic Potential: Industrial Electrical Equipment Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.24 Electric Economic Potential: Industrial Fabricated Metal Products by End Use

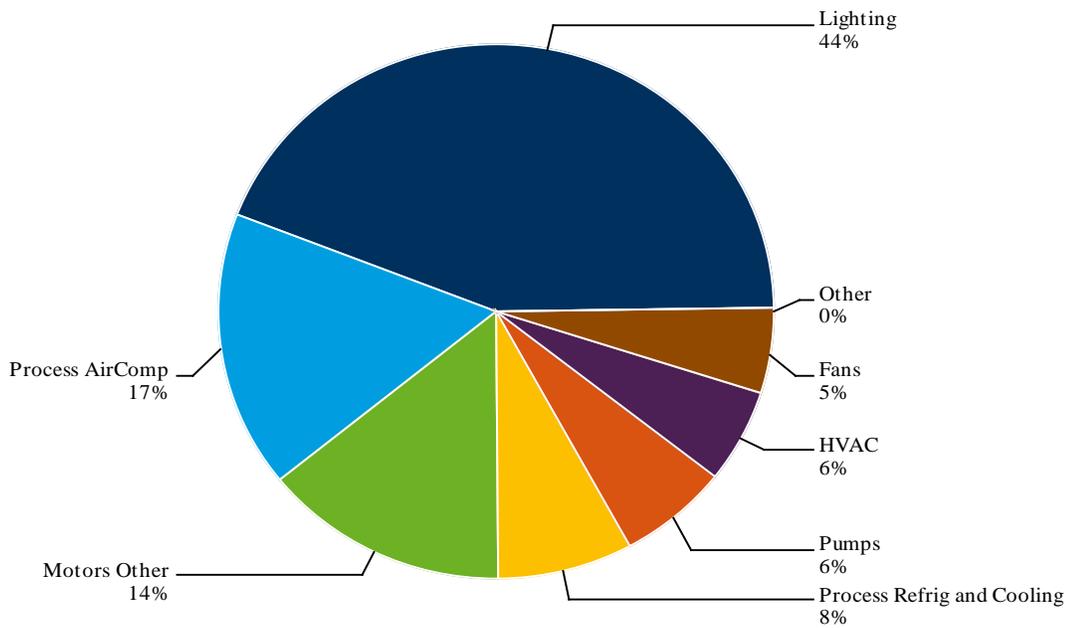
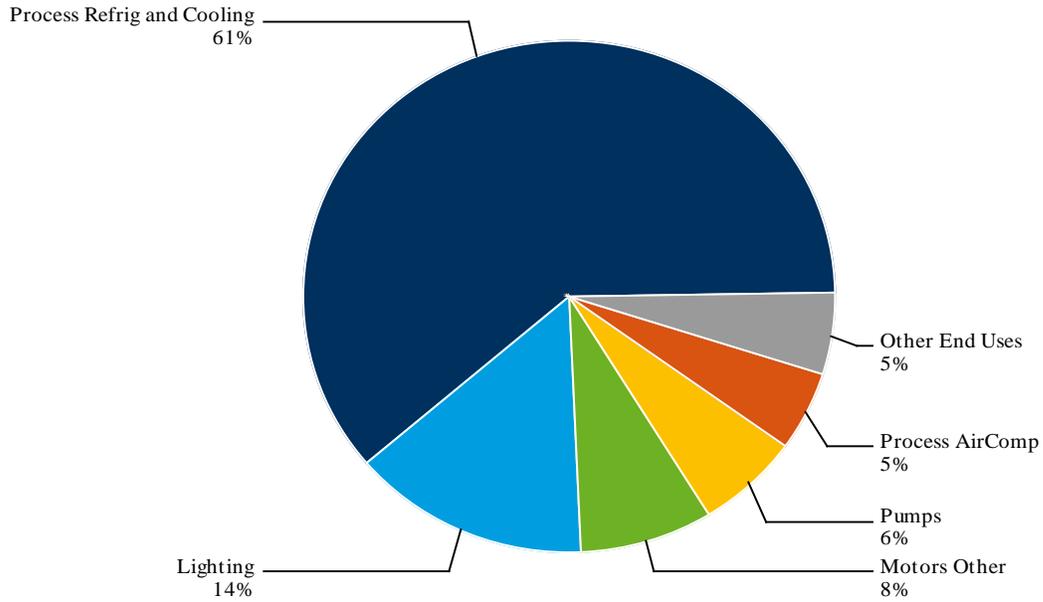
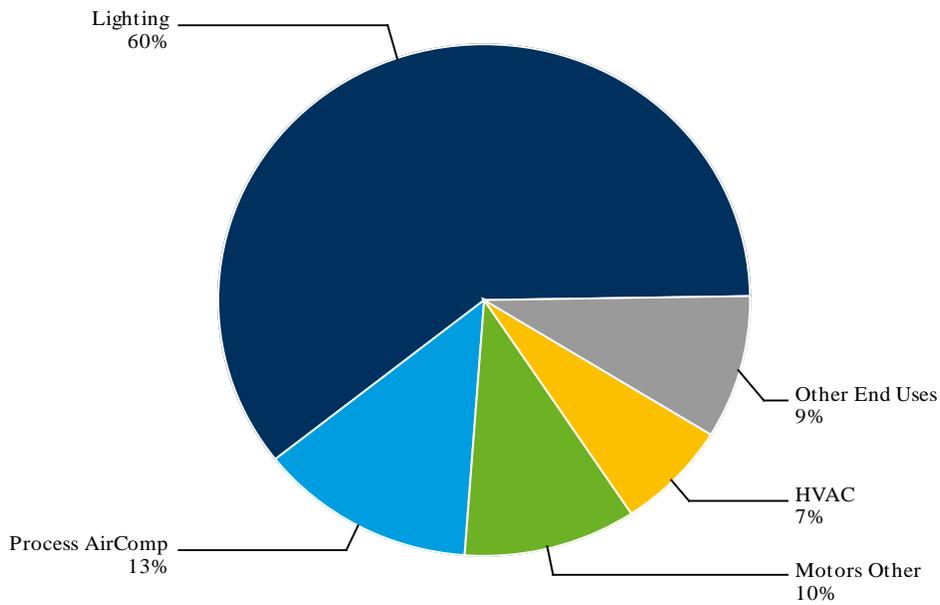


Figure A.4.5.25 Electric Economic Potential: Industrial Food Mfg by End Use



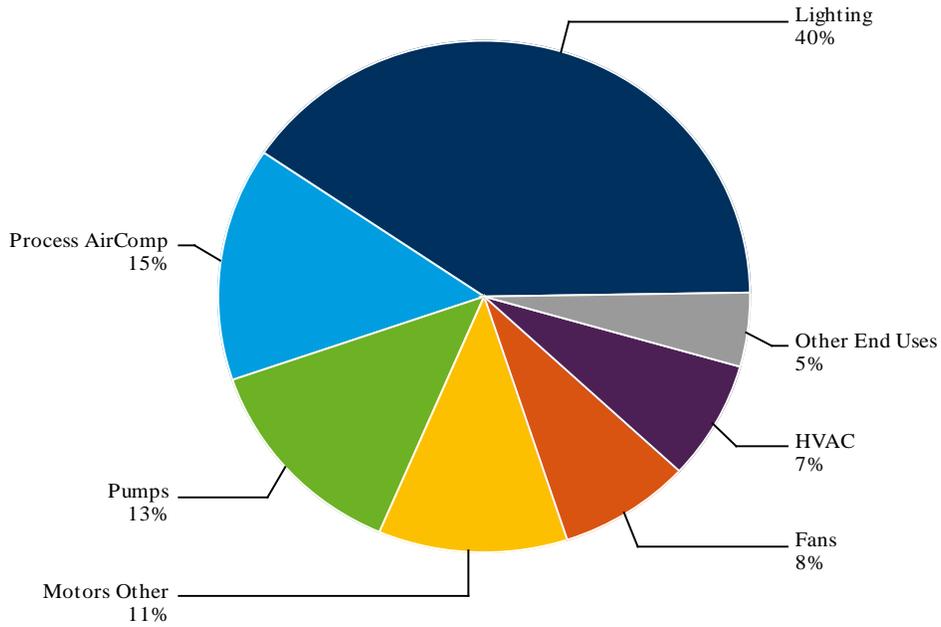
Note: 'Other End Uses' includes:

Figure A.4.5.26 Electric Economic Potential: Industrial Furniture Mfg by End Use



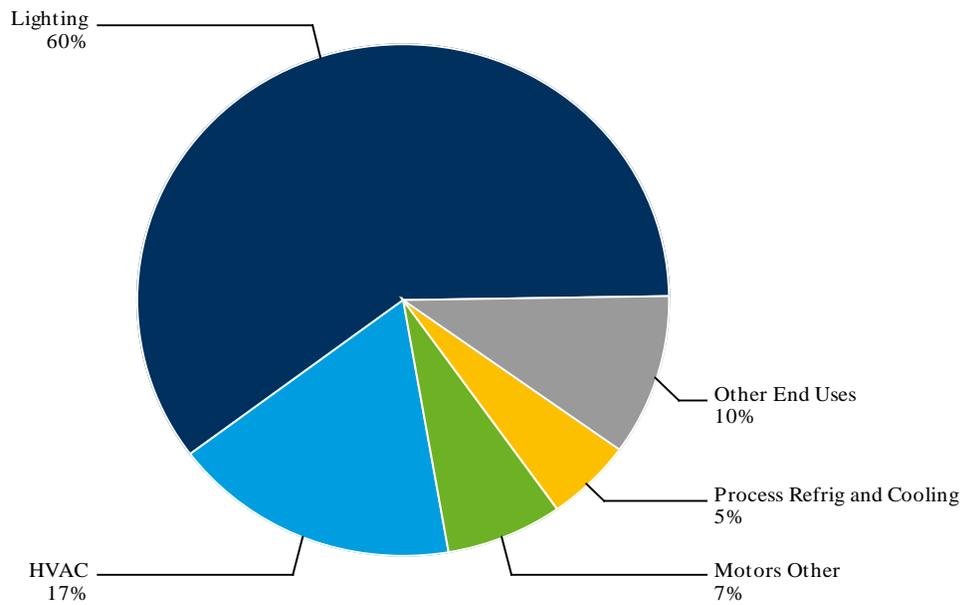
Note: 'Other End Uses' includes:

Figure A.4.5.27 Electric Economic Potential: Industrial Machinery by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.28 Electric Economic Potential: Industrial Instruments by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.29 Electric Economic Potential: Industrial Mining by End Use

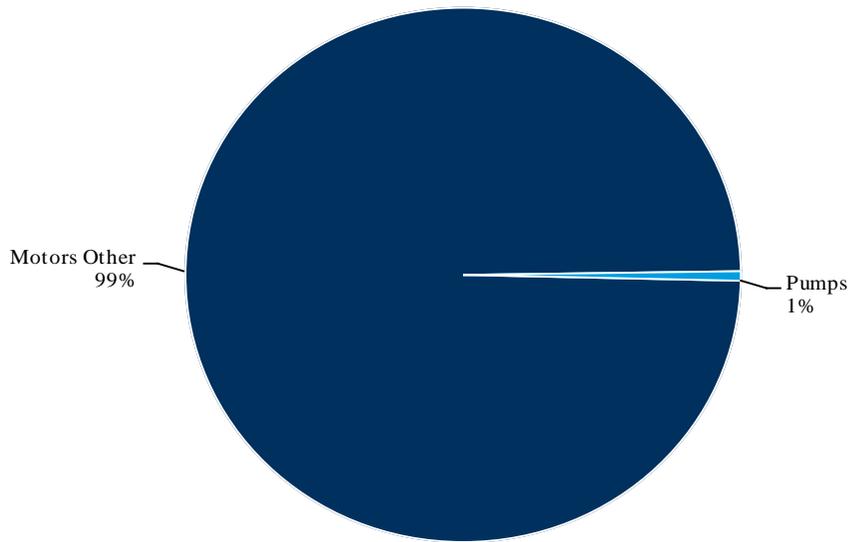
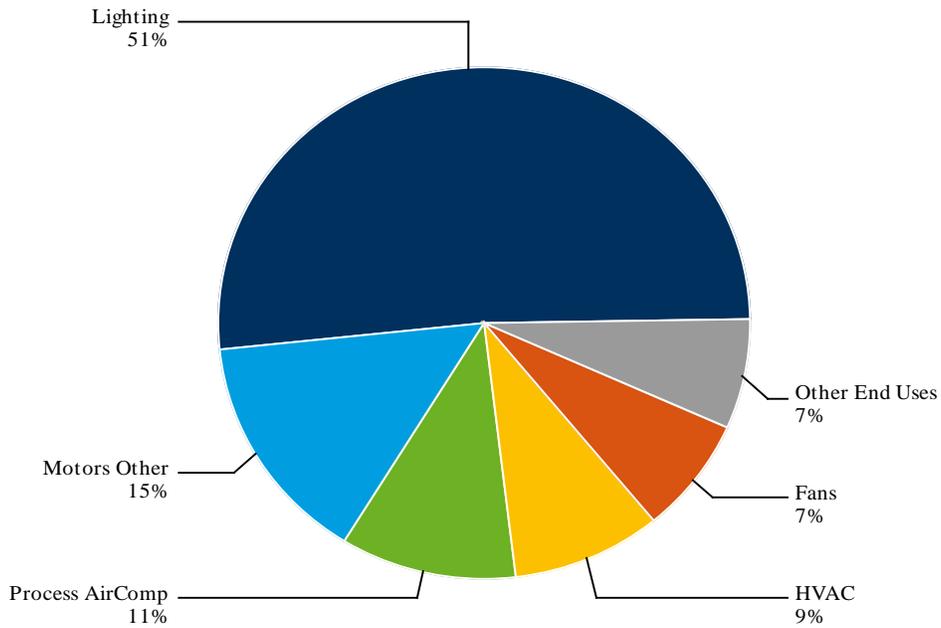
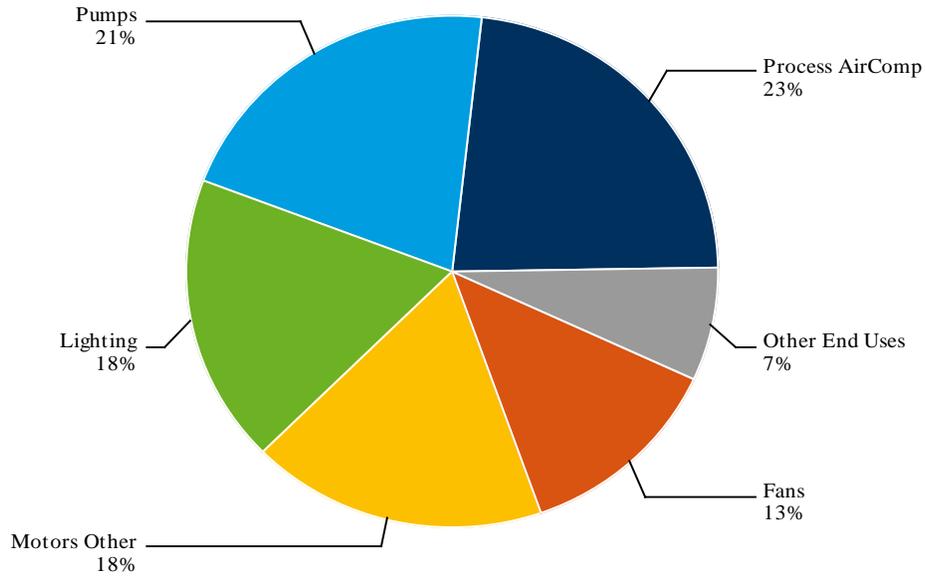


Figure A.4.5.30 Electric Economic Potential: Industrial Miscellaneous Mfg by End Use



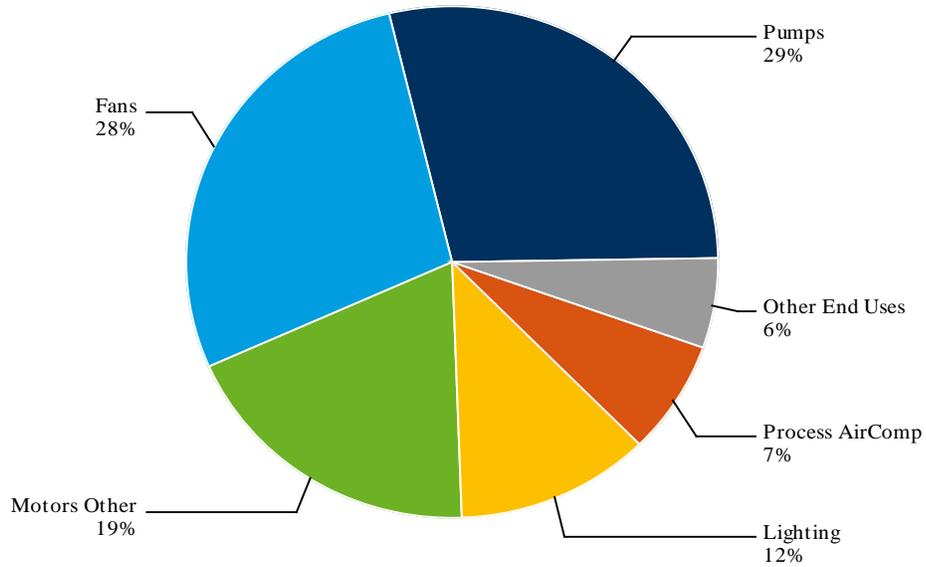
Note: 'Other End Uses' includes:

Figure A.4.5.31 Electric Economic Potential: Industrial Nonmetallic Mineral Products by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.32 Electric Economic Potential: Industrial Paper Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.33 Electric Economic Potential: Industrial Plastics Rubber Products by End Use

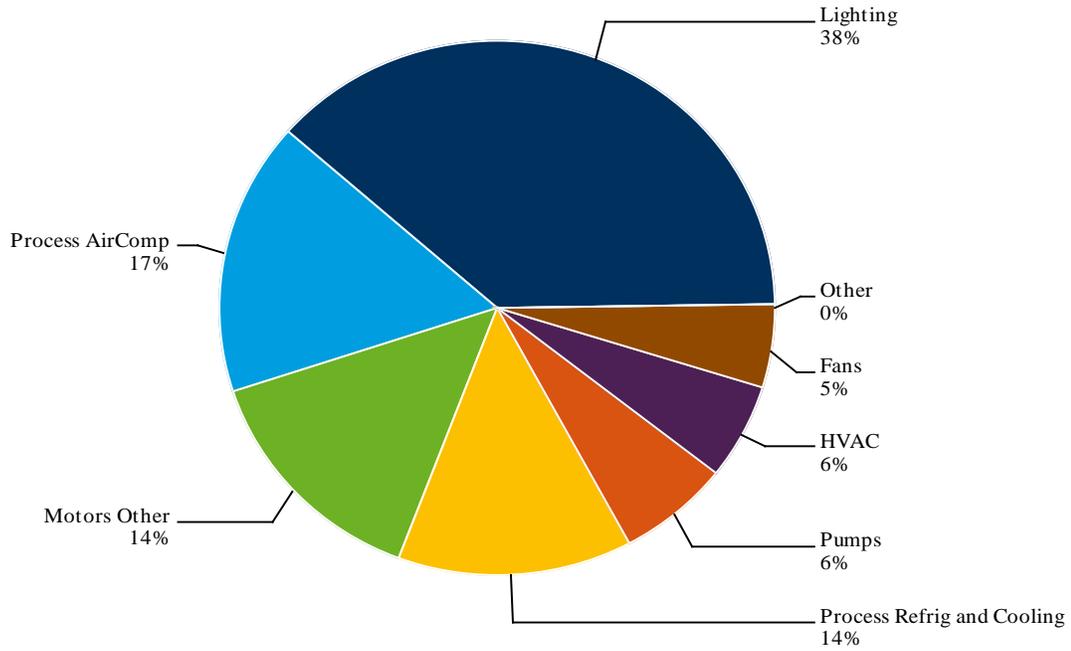
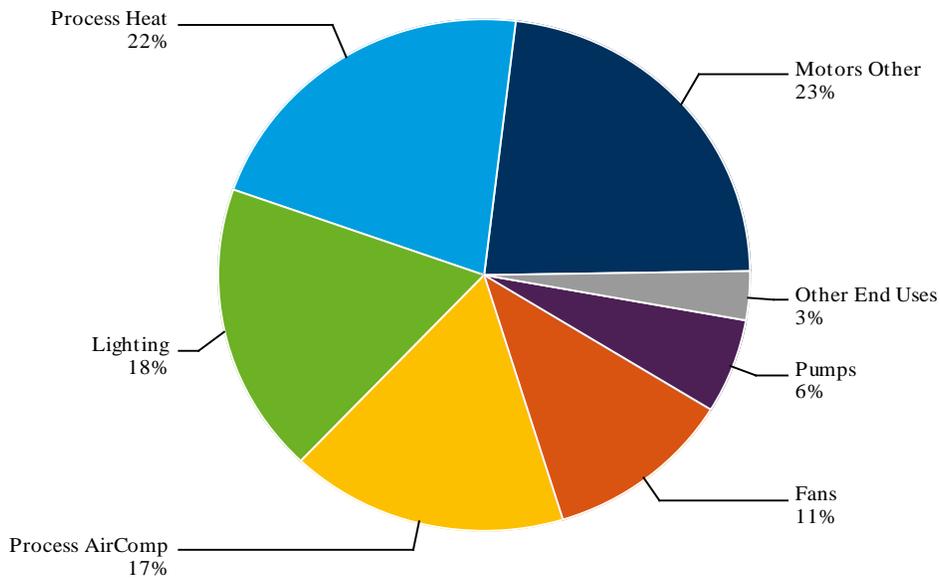
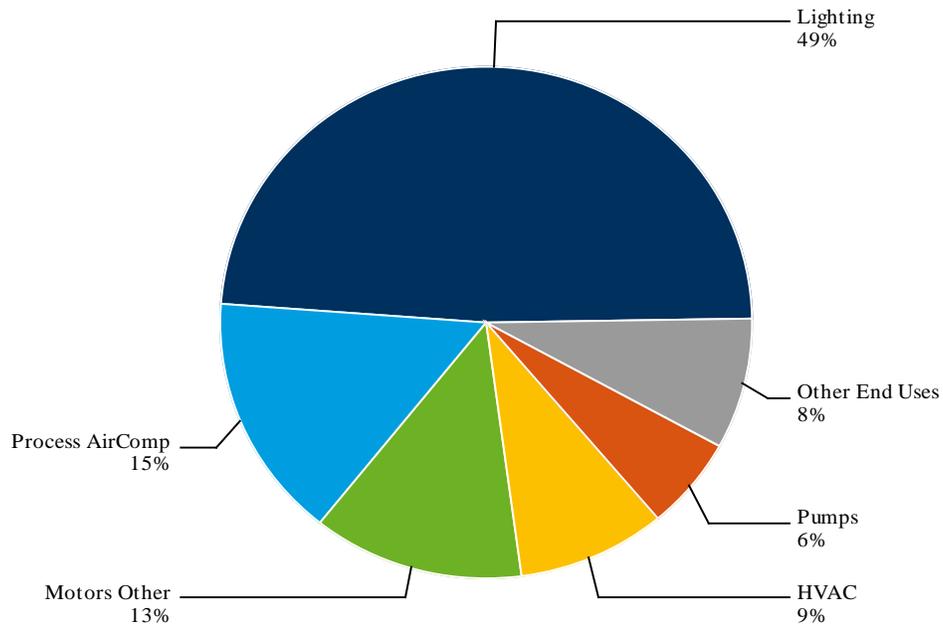


Figure A.4.5.34 Electric Economic Potential: Industrial Primary Metal Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.35 Electric Economic Potential: Industrial Printing Related Support by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.36 Electric Economic Potential: Industrial Street Lighting by End Use

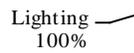
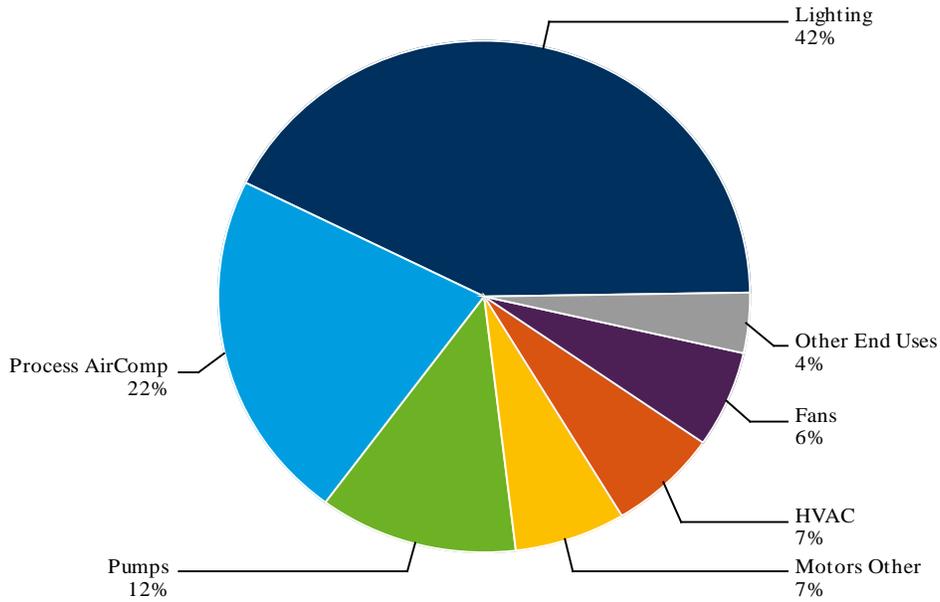
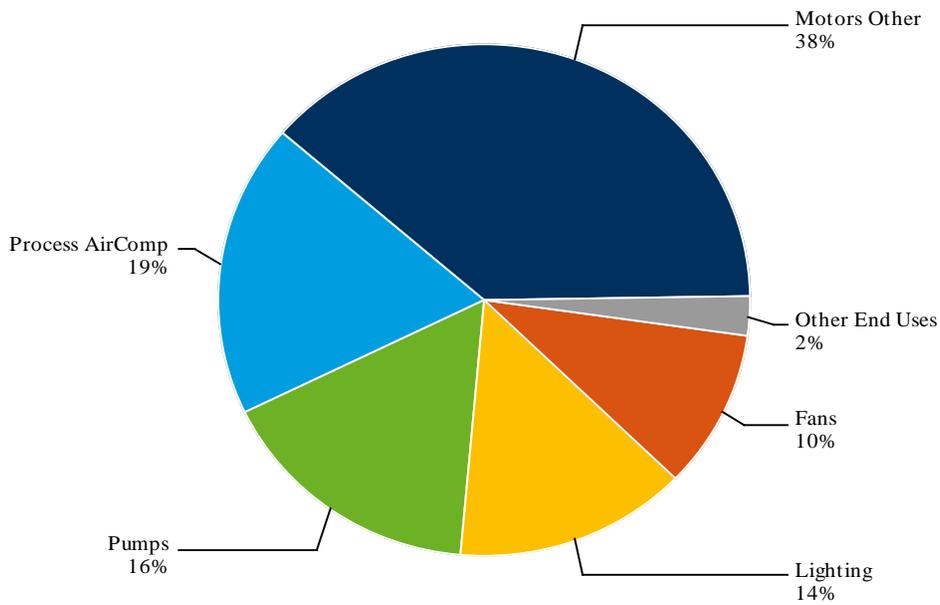


Figure A.4.5.37 Electric Economic Potential: Industrial Transportation Equipment Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.5.38 Electric Economic Potential: Industrial Wood Product Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.6.1 Gas Technical Potential: Industrial by End Use

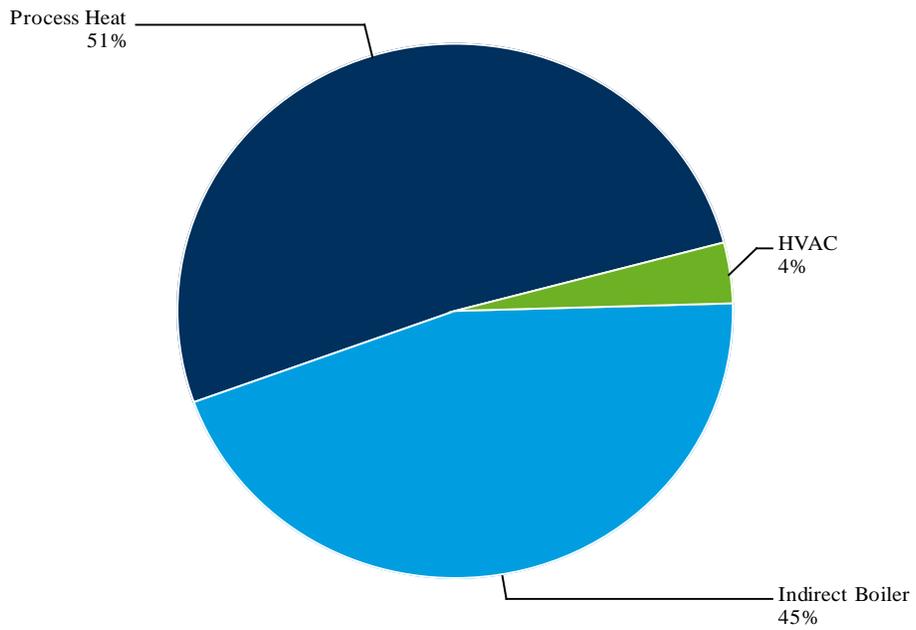


Figure A.4.6.2 Gas Technical Potential: Industrial Agriculture by End Use

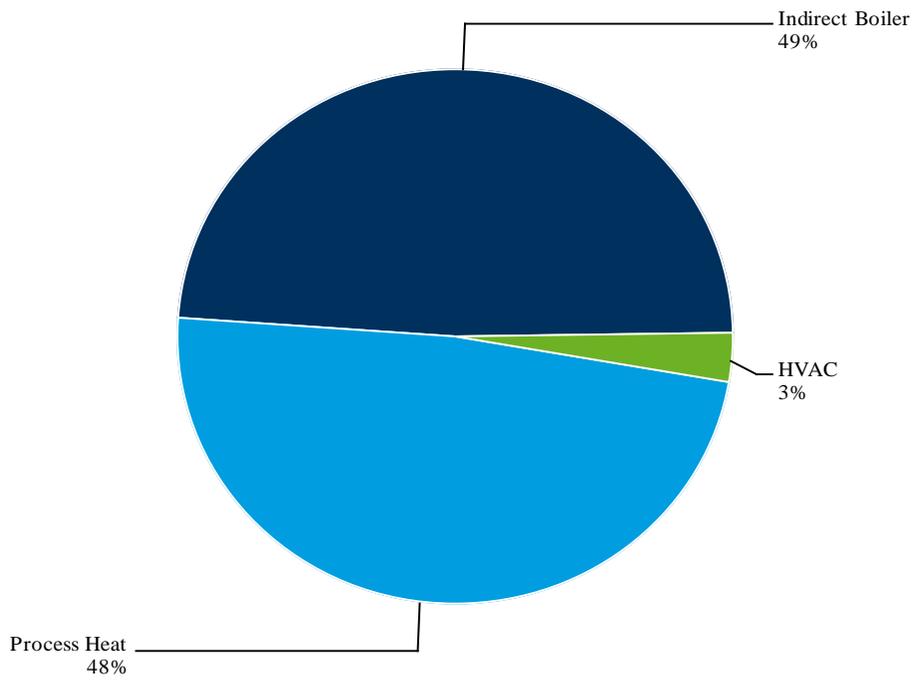


Figure A.4.6.3 Gas Technical Potential: Industrial Chemical Mfg by End Use

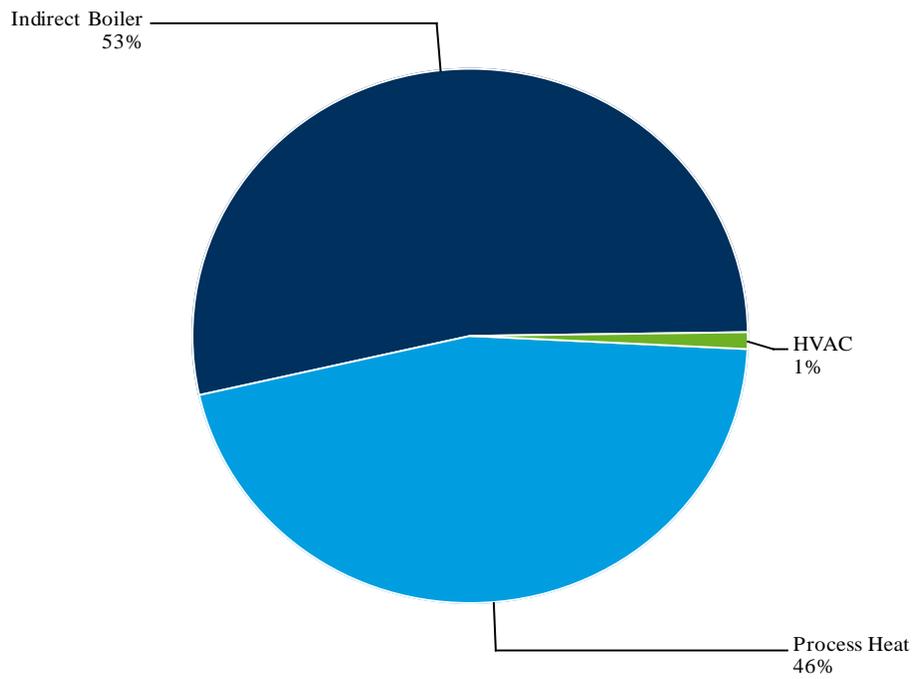


Figure A.4.6.4 Gas Technical Potential: Industrial Electrical Equipment Mfg by End Use

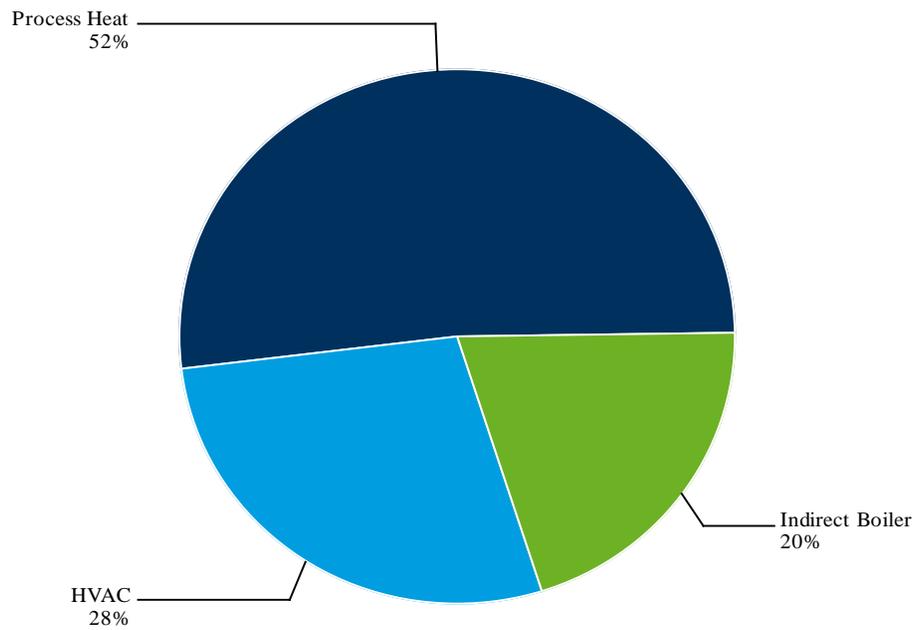


Figure A.4.6.5 Gas Technical Potential: Industrial Fabricated Metal Products by End Use

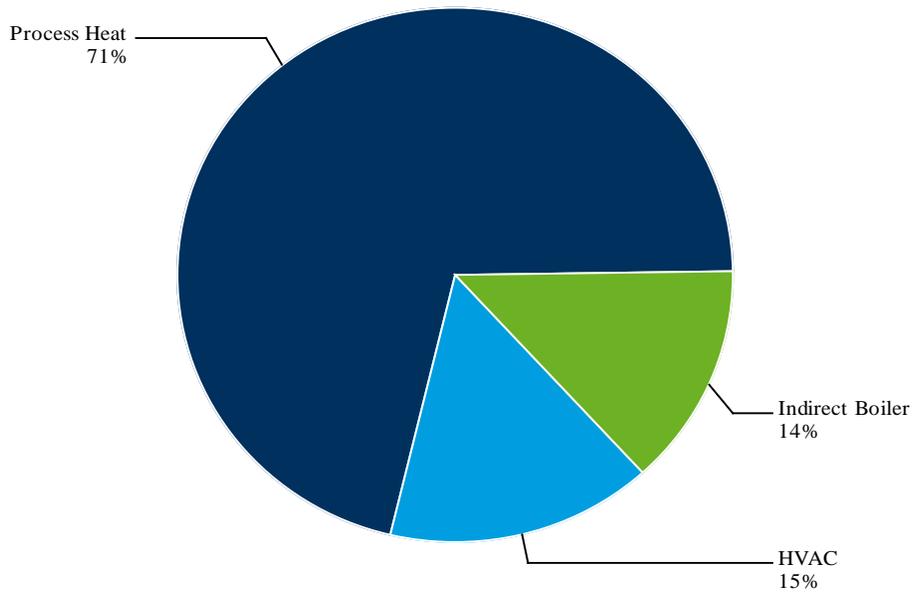


Figure A.4.6.6 Gas Technical Potential: Industrial Food Mfg by End Use

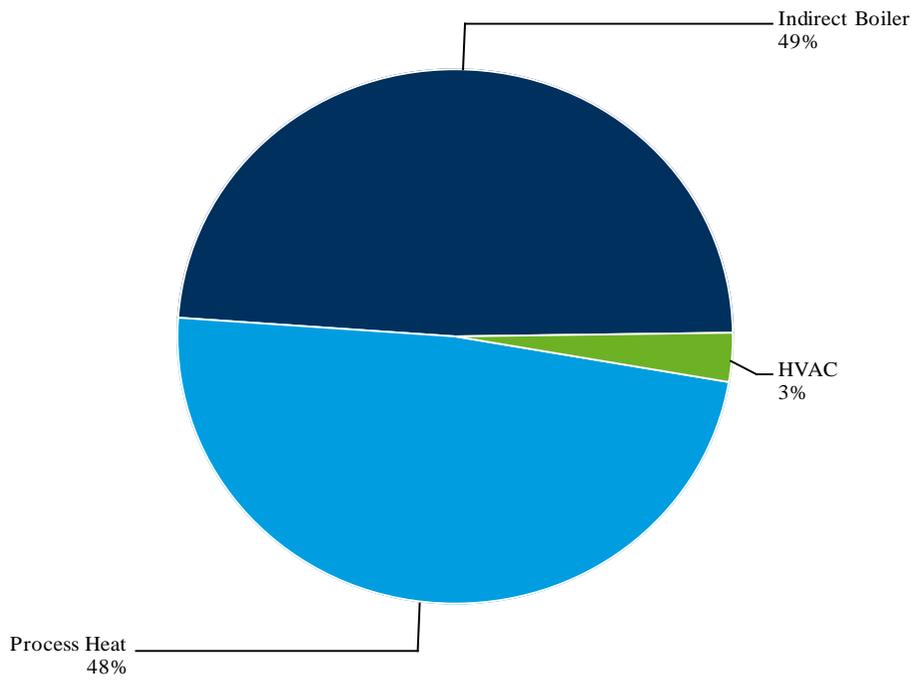


Figure A.4.6.7 Gas Technical Potential: Industrial Furniture Mfg by End Use

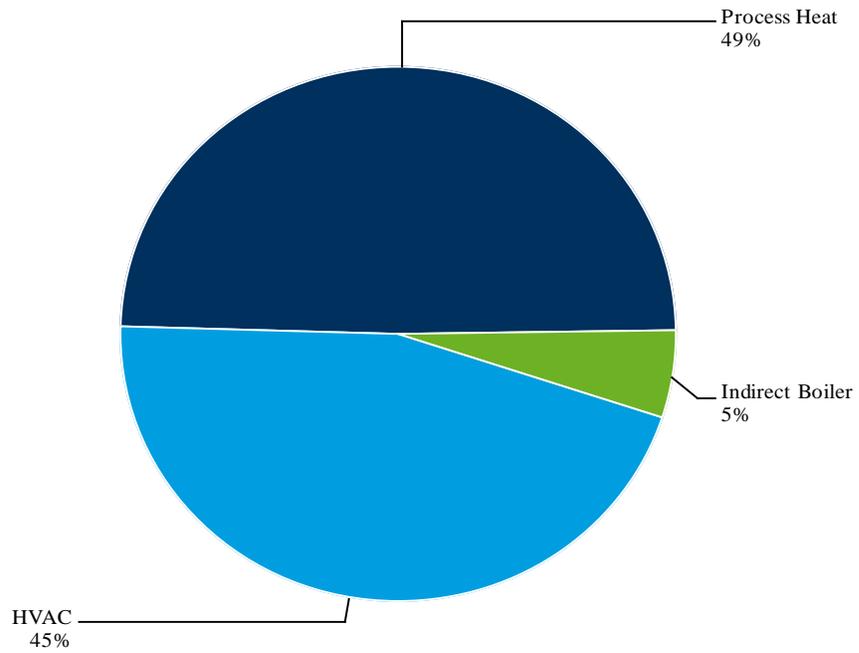


Figure A.4.6.8 Gas Technical Potential: Industrial Industrial Machinery by End Use

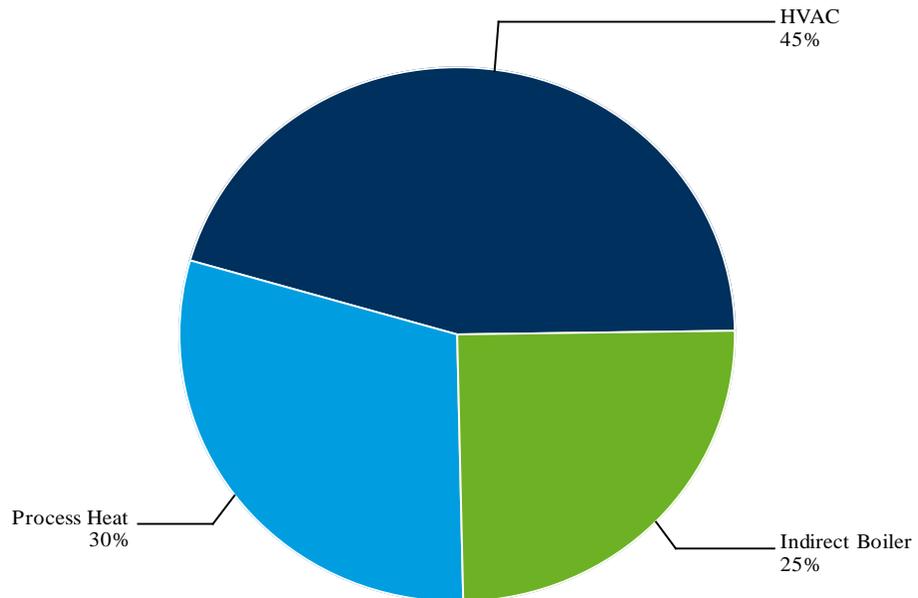


Figure A.4.6.9 Gas Technical Potential: Industrial Instruments by End Use

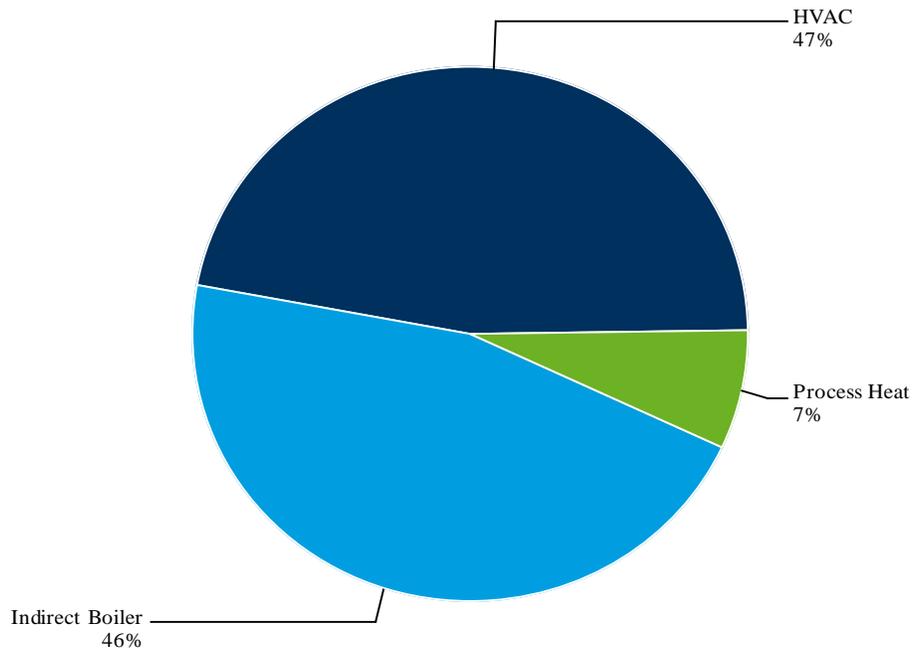


Figure A.4.6.11 Gas Technical Potential: Industrial Miscellaneous Mfg by End Use

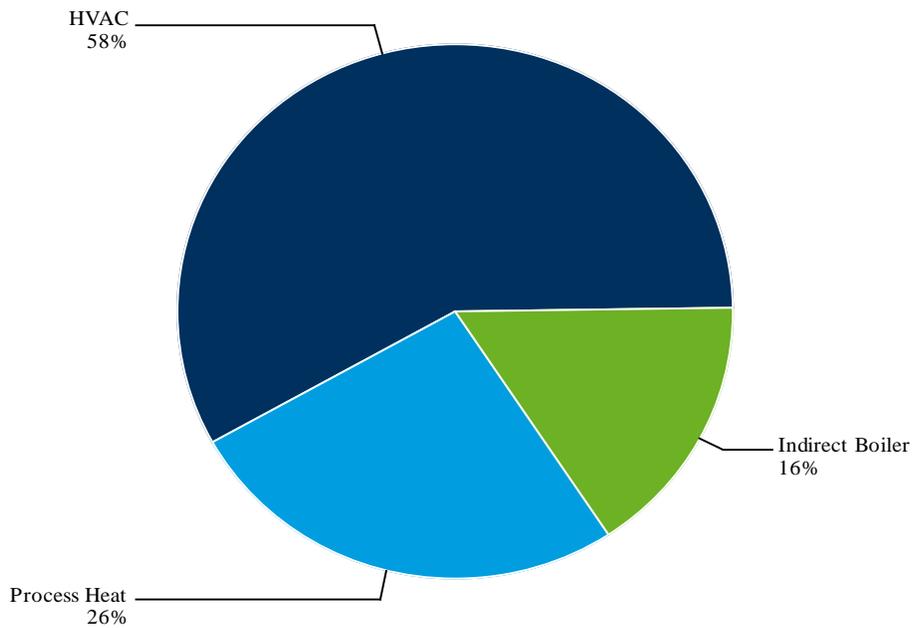
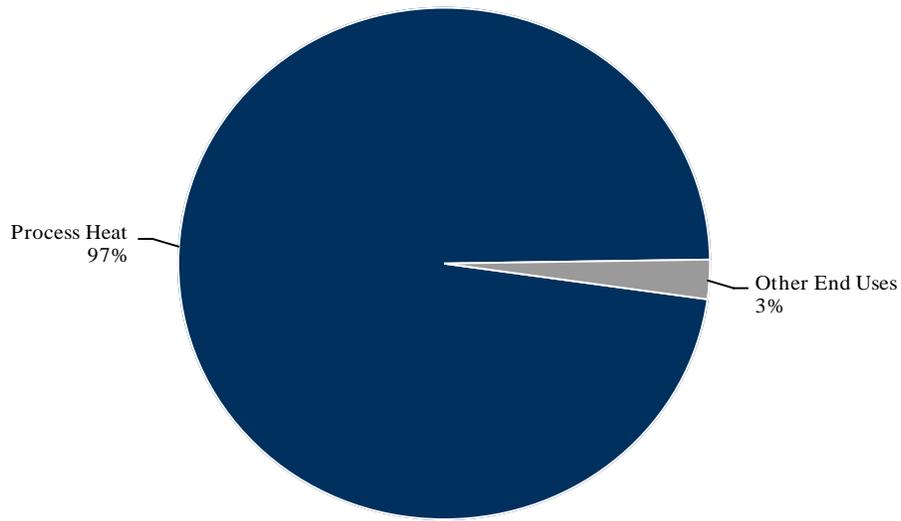


Figure A.4.6.12 Gas Technical Potential: Industrial Nonmetallic Mineral Products by End Use



Note: 'Other End Uses' includes:

Figure A.4.6.13 Gas Technical Potential: Industrial Paper Mfg by End Use

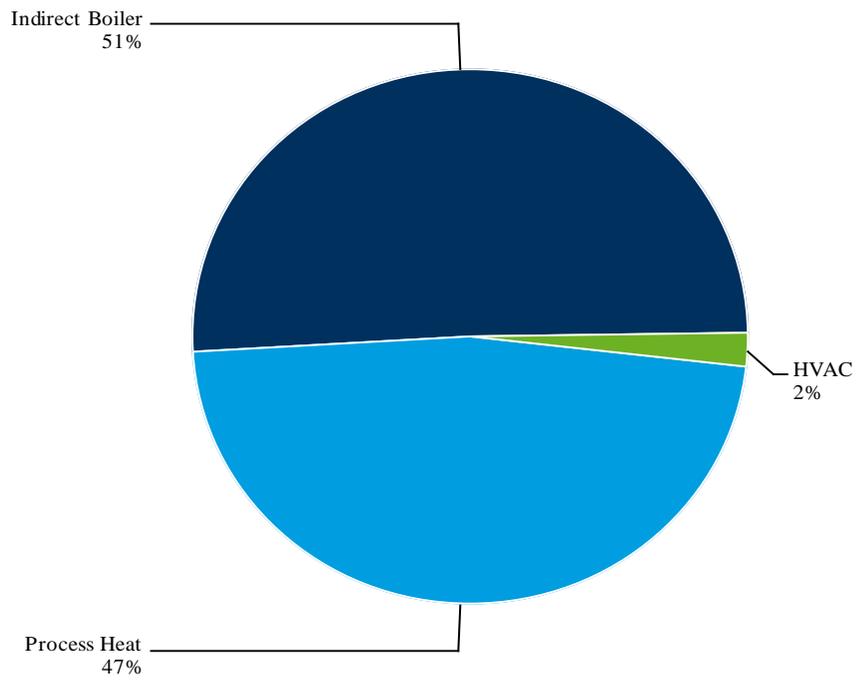


Figure A.4.6.14 Gas Technical Potential: Industrial Plastics Rubber Products by End Use

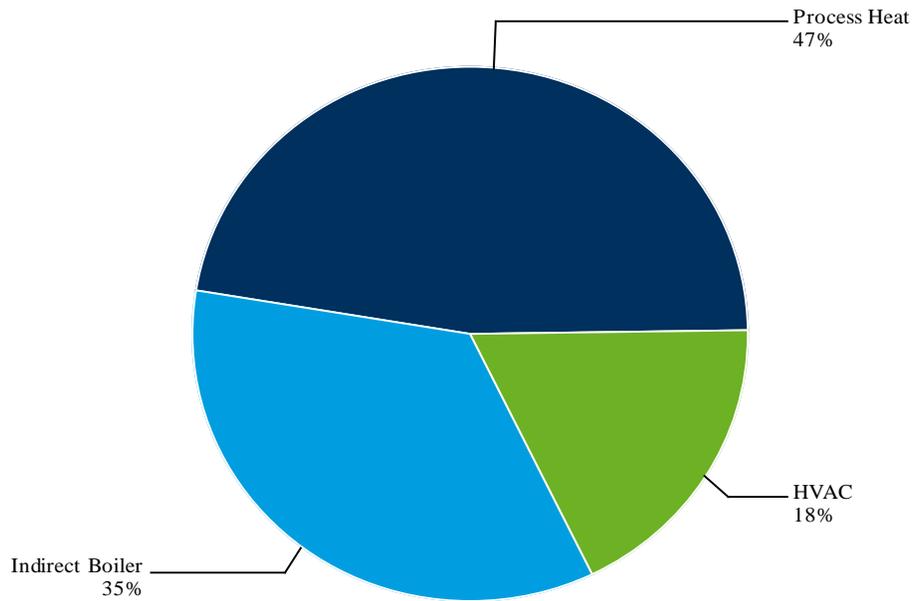
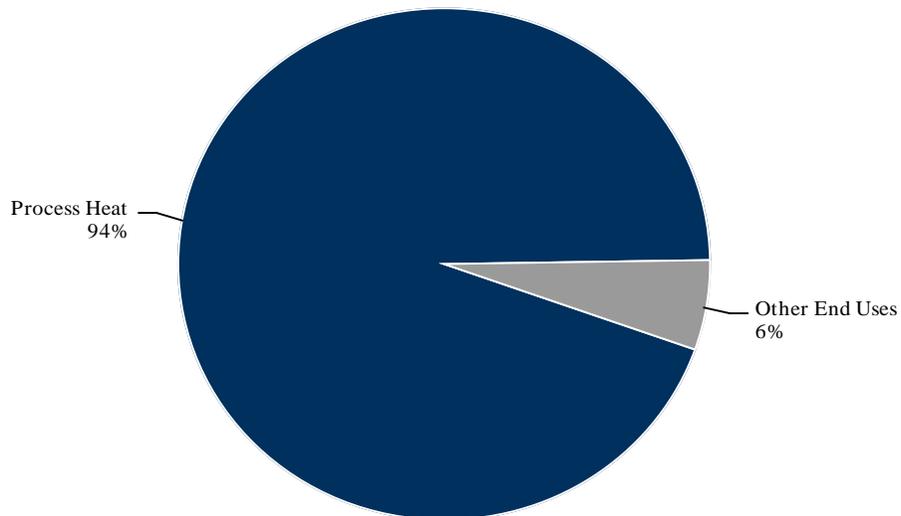


Figure A.4.6.15 Gas Technical Potential: Industrial Primary Metal Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.6.16 Gas Technical Potential: Industrial Printing Related Support by End Use

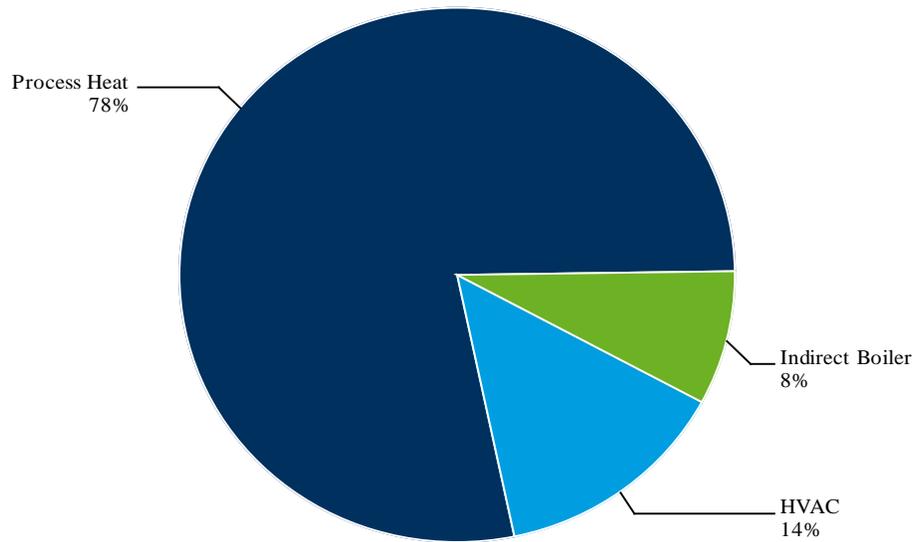


Figure A.4.6.17 Gas Technical Potential: Industrial Transportation Equipment Mfg by End Use

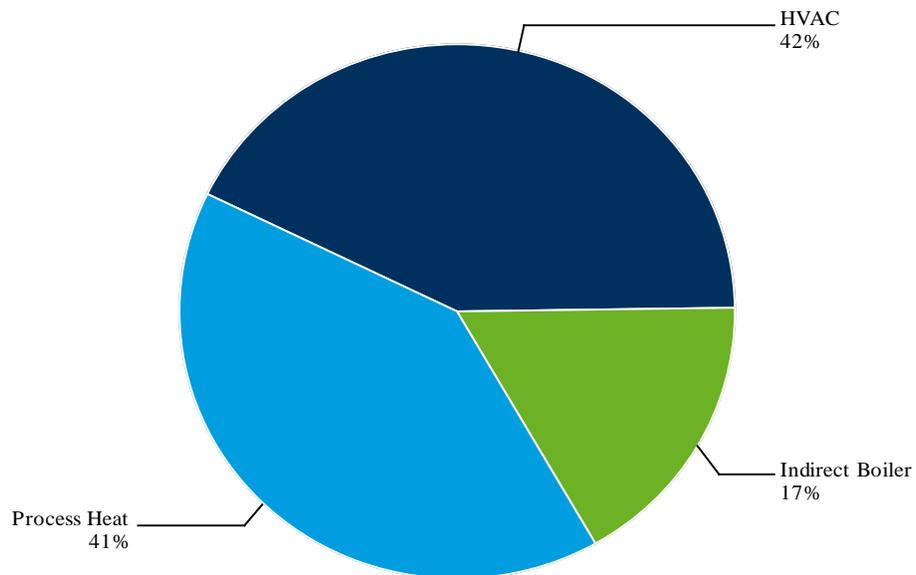


Figure A.4.6.18 Gas Technical Potential: Industrial Wood Product Mfg by End Use

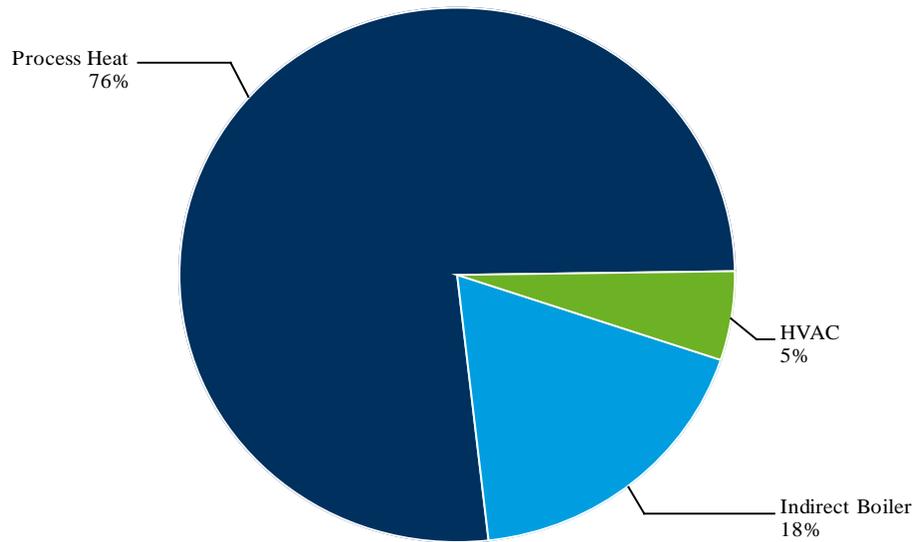


Figure A.4.6.19 Gas Economic Potential: Industrial by End Use

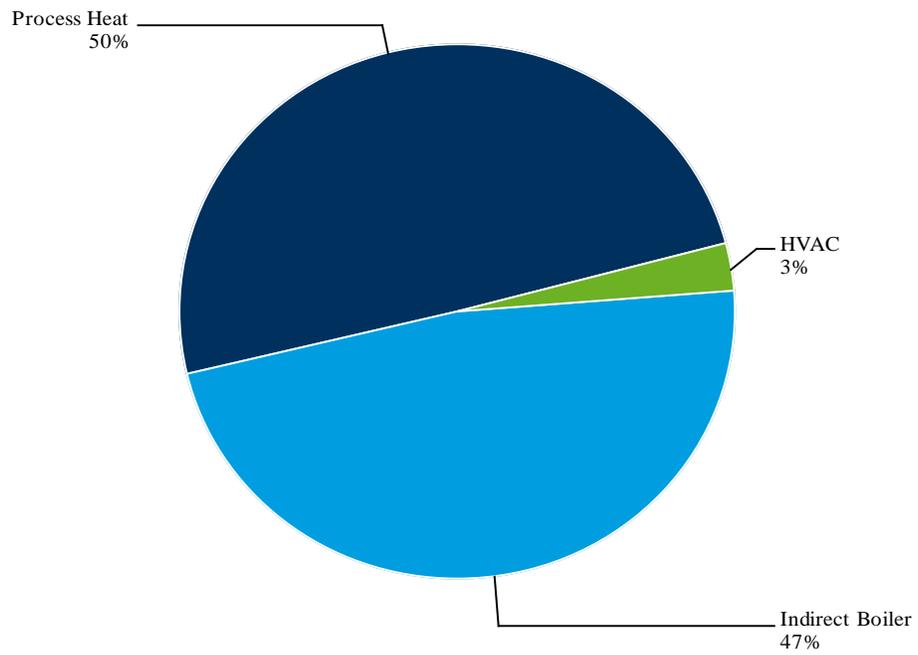


Figure A.4.6.20 Gas Economic Potential: Industrial Agriculture by End Use

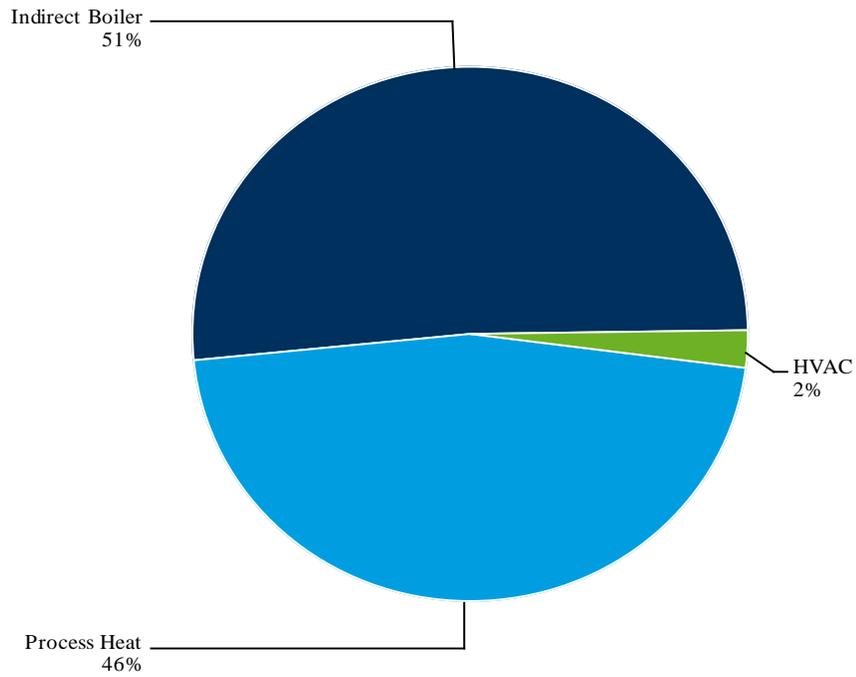


Figure A.4.6.21 Gas Economic Potential: Industrial Chemical Mfg by End Use

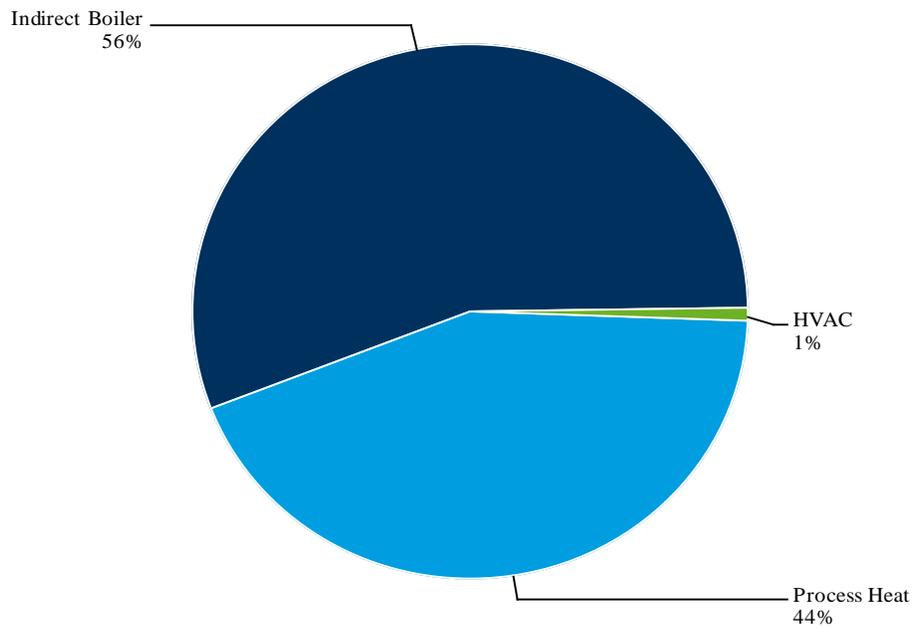


Figure A.4.6.22 Gas Economic Potential: Industrial Electrical Equipment Mfg by End Use

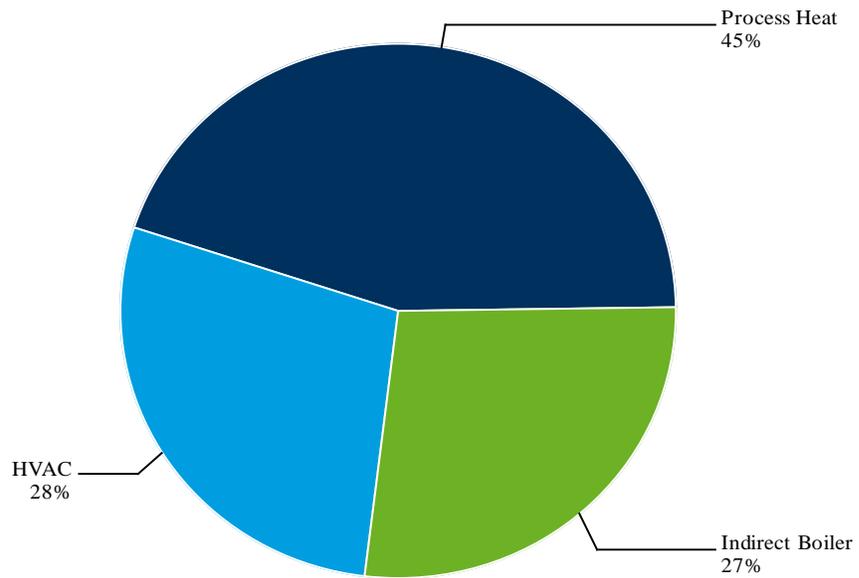


Figure A.4.6.23 Gas Economic Potential: Industrial Fabricated Metal Products by End Use

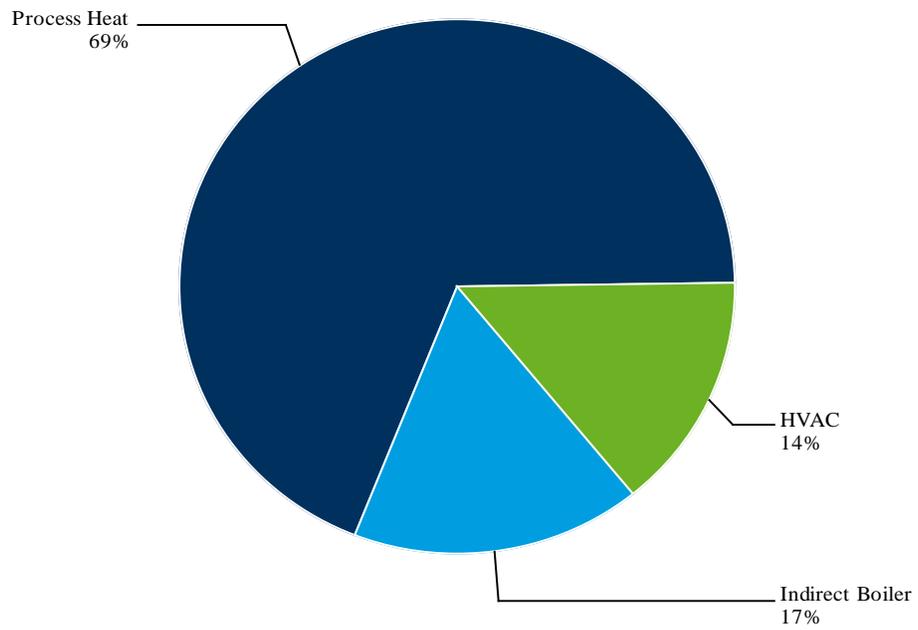


Figure A.4.6.24 Gas Economic Potential: Industrial Food Mfg by End Use

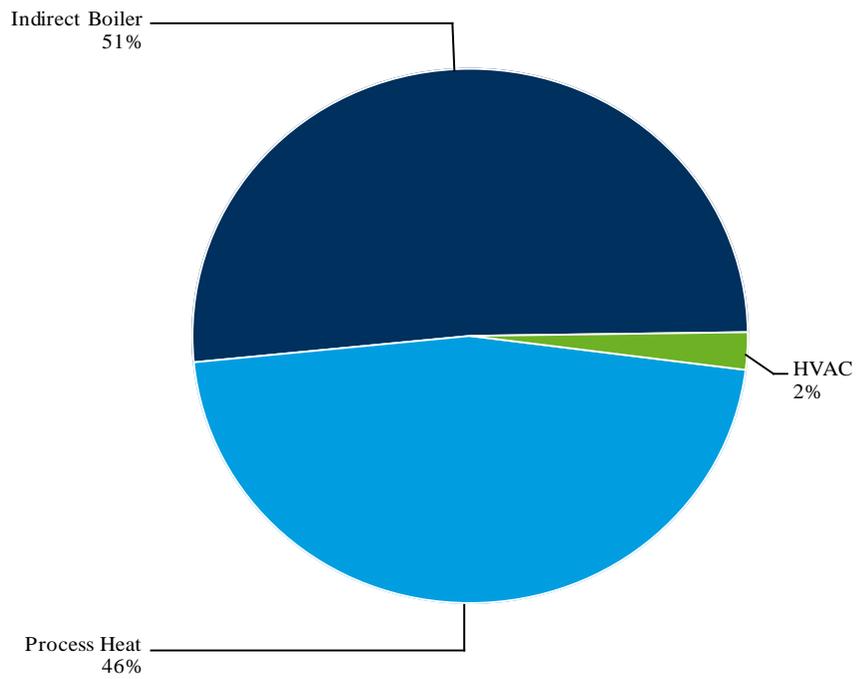


Figure A.4.6.25 Gas Economic Potential: Industrial Furniture Mfg by End Use

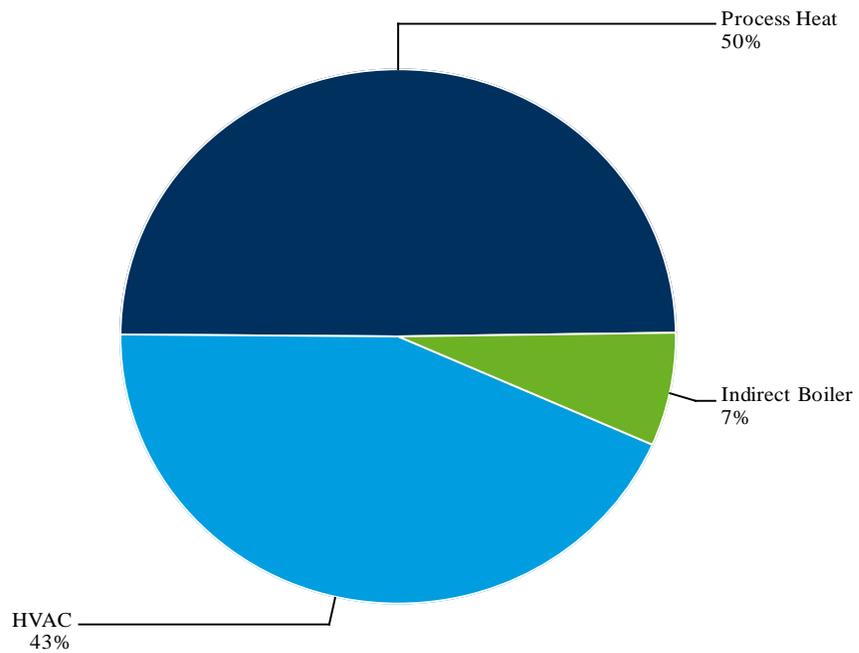


Figure A.4.6.26 Gas Economic Potential: Industrial Industrial Machinery by End Use

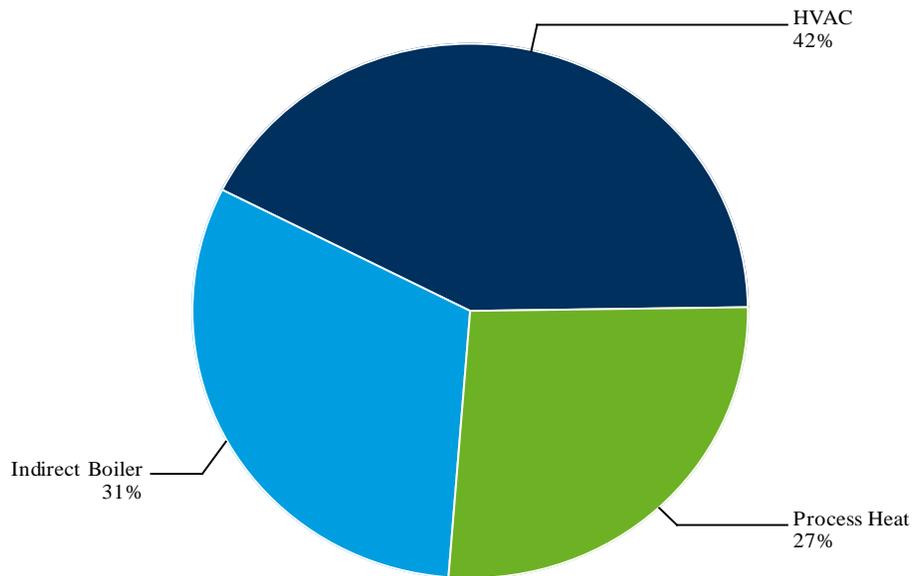


Figure A.4.6.27 Gas Economic Potential: Industrial Instruments by End Use

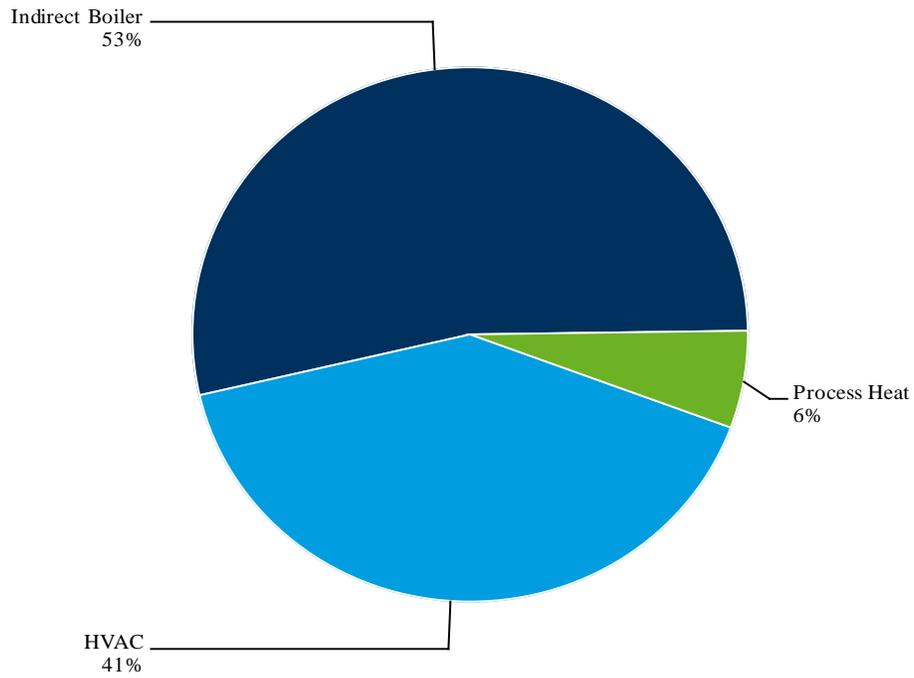


Figure A.4.6.29 Gas Economic Potential: Industrial Miscellaneous Mfg by End Use

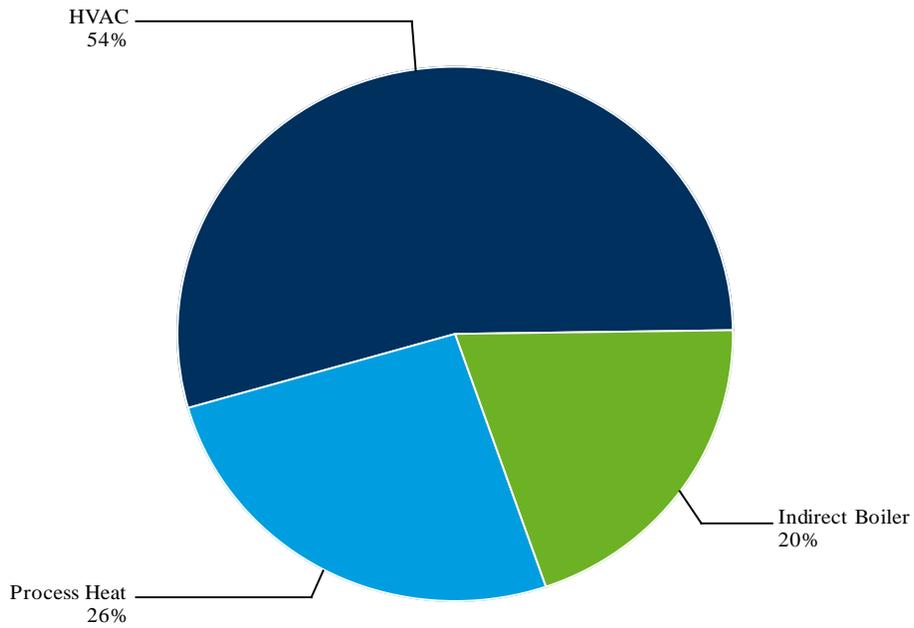
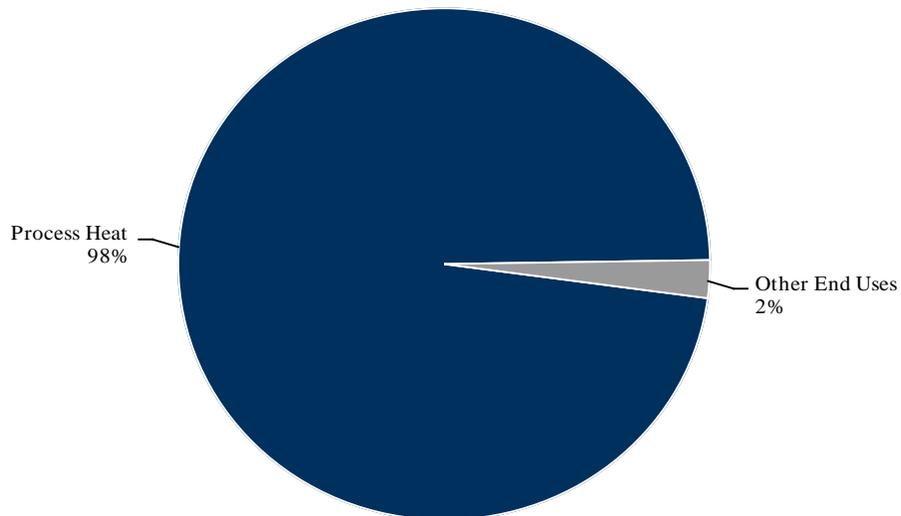


Figure A.4.6.30 Gas Economic Potential: Industrial Nonmetallic Mineral Products by End Use



Note: 'Other End Uses' includes:

Figure A.4.6.31 Gas Economic Potential: Industrial Paper Mfg by End Use

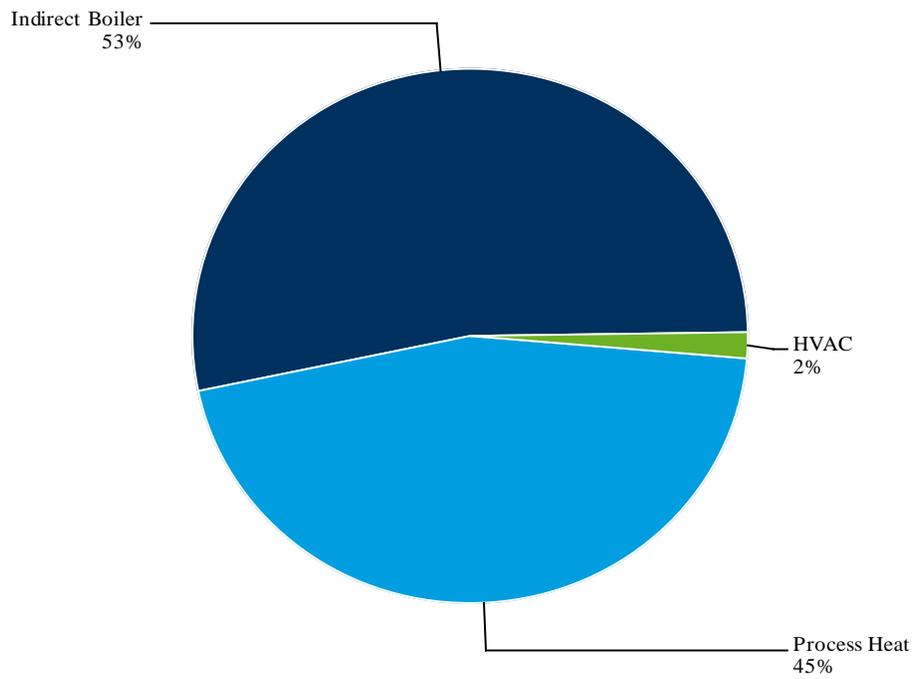


Figure A.4.6.32 Gas Economic Potential: Industrial Plastics Rubber Products by End Use

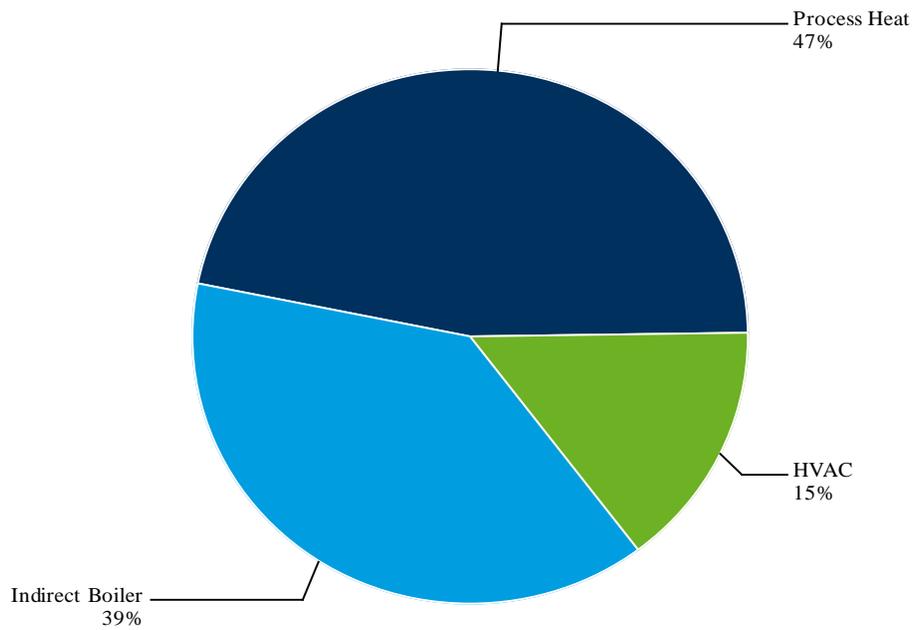
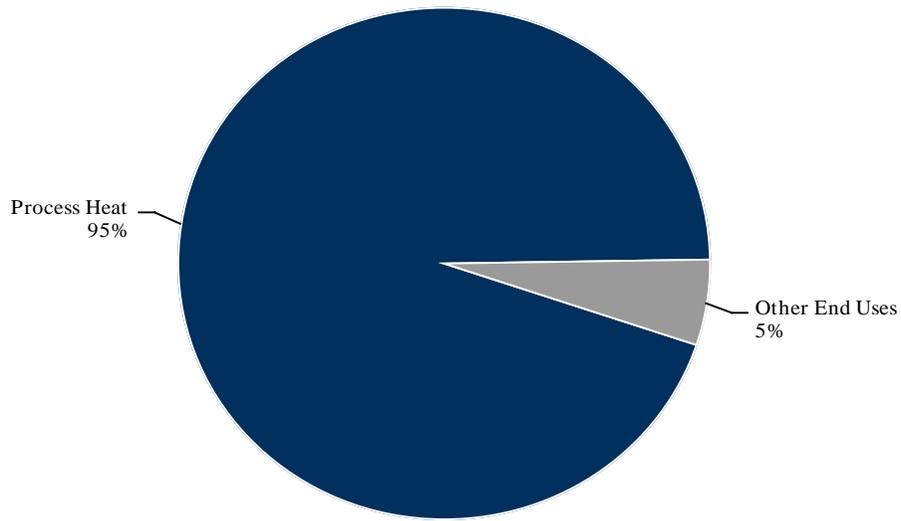


Figure A.4.6.33 Gas Economic Potential: Industrial Primary Metal Mfg by End Use



Note: 'Other End Uses' includes:

Figure A.4.6.34 Gas Economic Potential: Industrial Printing Related Support by End Use

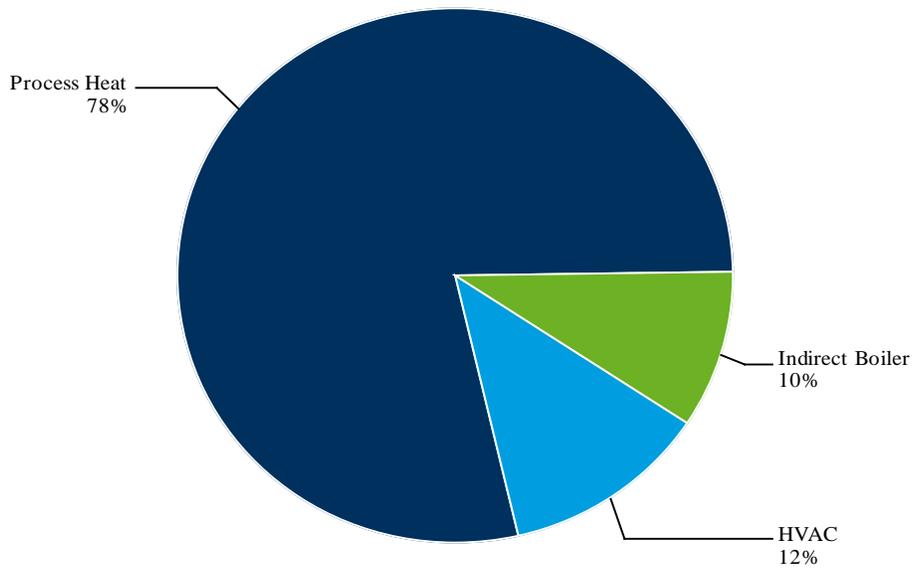


Figure A.4.6.35 Gas Economic Potential: Industrial Transportation Equipment Mfg by End Use

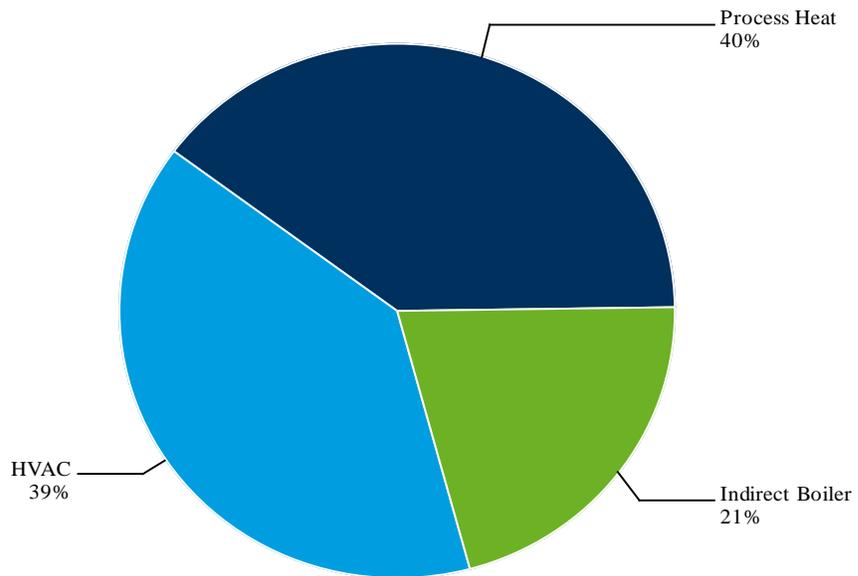
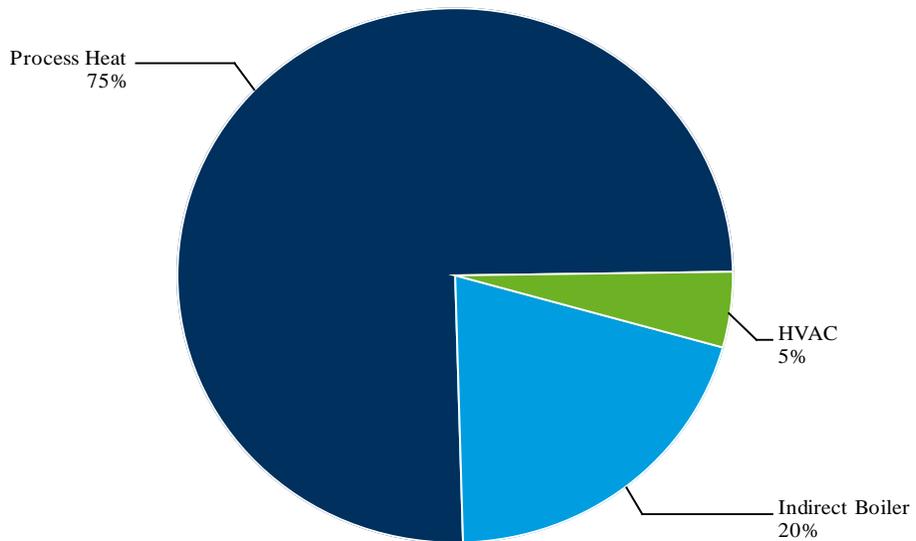


Figure A.4.6.36 Gas Economic Potential: Industrial Wood Product Mfg by End Use



APPENDIX A.5: MARKET POTENTIAL

HVAC

Active Chilled Beam Cooling with Dedicated Outdoor Air System¹: Conventional variable air volume (VAV) systems for large commercial buildings use a large fraction of their energy just to distribute energy in the air; pumping air is much less efficient than pumping water. One alternative is the "chilled beam" system, in which small amounts of outdoor air are entrained into a larger supply of recirculated air, and passed across a radiant-convective "chilled-beam" fixture. One benefit is that the chiller energy is delivered efficiently to the zone by being carried in water. Also, to prevent condensation, much warmer water is used, which helps reduce energy consumption. These systems can be quieter, and can allow smaller floor-to-floor heights, due to lack of ducts, which reduces construction cost.

Commercial Energy Recovery Ventilation Systems²: Energy recovery ventilation (ERV) systems exchange heat (often both sensible heat and water vapor) between the outgoing exhaust air and the ventilation air being brought in. In contrast, heat recovery devices transfer only the sensible heat between the supply and exhaust airstreams by making use of the temperature difference between the two airstreams. Under appropriate conditions, this allows for a reduced capacity of the HVAC system and saves energy. Exhaust energy recovery technologies include energy recovery loops, heat pipes, plate exchangers, and rotating wheel air to air heat exchangers.

Optimized Residential Duct Work³: Installing ductwork in conditioned spaces (i.e., within the insulated building envelope) substantially eliminates air and energy losses to the outside. This can allow smaller heating and cooling systems to be used resulting in first cost savings. Interior ducts are also subjected to less severe conditions, which may prolong the life of sealants used to reduce leakage. An optimized duct system has appropriately sized ducts, short runs, the smoothest interior surfaces possible, and the fewest, most gradual direction and size changes possible. Besides reducing energy loss, reducing the air leakage in the ductwork can also mean that smaller capacity furnaces, air conditioners and blower fans can be installed to meet air conditioning requirements, reducing initial equipment costs.

Lighting

Lighting – LED Linear Replacement: Solid State Lighting (SSL) or LED linear replacement of 4 foot T-8 fluorescent fixtures reduces the power density, which results in overall energy savings.

¹ H. Sachs, W. Lin, and A. Lowenberger; ACEEE Emerging Energy -Savings HVAC Technologies and Practices for the Buildings Sector (2009). Report # A092.

² Ibid

³ Ibid

Water Heat

Add-on Heat Pump Water Heater⁴: Storage tank electric water heaters rely on electric resistance heaters to heat water to a setpoint temperature. A heat pump water heater utilizes a refrigeration engine that moves heat from the ambient environment to heat water in a storage tank. An add-on heat pump water heater system is attached to the cold water line of an existing storage water heater and uses the refrigeration cycle and heat exchangers to preheat the cold water inlet. For electric water heaters, the electric resistance heaters are used as back-up heating if the heat pump is unable to meet the water heater temperature setpoint.

Condensing Tankless Water Heater⁵: Tankless gas water heaters promise greater efficiency, 0.82 EF, when compared to typical storage gas water heater and an endless supply of hot water – up to the limits of their firing rate. Similarly, condensing tankless units are more sophisticated than standard tankless units and use two separate heat exchangers (usually one copper and one stainless steel) to extract more usable heat from flue gases, increasing rated efficiencies to about 0.92 EF. This condensing tankless water heater increased efficiency results in energy savings over both storage and tankless gas water heaters.

Multifamily Building Best Practices⁶: Multifamily buildings are generally characterized by central tank water heaters or boilers with a recirculation loop. In many cases, less than one third of the site energy is actually delivered to the fixtures. Proper operation and maintenance and improved controls can improve multifamily water heating performance by 15% to 30%. For new installations, choosing high efficiency equipment, placing the water heater as near as possible to demand locations, and properly insulating the recirculation loop can dramatically reduce losses.

Single-Family On-Demand Recirculation Pumps⁷: Typical hot water recirculation loops reduce water waste greatly, but poor pipe insulation guarantees energy waste that costs much more than the value of the water saved. A hot water, user-activated, recirculation pump is activated when hot water is desired and turns off as soon as hot water reaches the fixture. The user-activated recirculation pump greatly reduces the heat losses associated with typical recirculation loop systems, which results in energy savings. When compared to a home without a recirculation loop, a user-activated recirculation loop can deliver hot water in about one-fifth of the time, which helps lower water and energy losses.

⁴ H. Sachs, J. Talbot, and N. Kaufman; Emerging Hot Water Technologies and Practices for Energy Efficiency as of 2011. Report # A112.

⁵ Ibid

⁶ Ibid

⁷ Ibid

The data on natural gas utility spending and savings, shown as Figure 15 of Volume 1, are presented in the table below.

Table 1. Gas Utility Spending and Savings

Utility/ Administrator	Short Name	State	2010 Sales & Revenue		2010 Energy-Efficiency Performance				Normalized 2010 Performance			
			Sales (BBtu)	Revenue (\$millions)	Savings (BBtu)	Incentive Spending (\$ millions)	Non- Incentive Spending (\$ millions)	Total Spending (\$ millions)	Incentive Spending as % of Revenue	Non- Incentive Spending as % of Revenue	Total Incentive Spending as % of Revenue	Savings as % of Sales
Pacific Gas & Electric	PG&E	CA	525,304	\$4,560	3,126	\$30.8	\$35.3	\$66.0	0.7%	0.8%	1.4%	0.6%
Puget Sound Energy	PSE	WA	102,683	\$1,170	503	\$13.8	\$5.8	\$19.6	1.2%	0.5%	1.7%	0.5%
Avista	Avista- WA	WA	15,971	\$141	143	\$4.4	\$1.0	\$5.4	3.1%	0.7%	3.8%	0.9%
Cascade Natural Gas	Cascade	WA	19,828	\$231	44	\$1.4	\$2.2	\$3.5	0.6%	0.9%	1.5%	0.2%
Avista	Avista-ID	ID	6,922	\$63	47	\$1.4	\$0.5	\$2.0	2.2%	0.9%	3.1%	0.7%
Questar	Questar- UT	UT	102,382	\$784	1,323	\$27.1	\$8.5	\$35.6	3.5%	1.1%	4.5%	1.3%
Xcel Energy	Xcel-CO	CO	231,748	\$1,523	555	\$8.7	\$8.2	\$16.9	0.6%	0.5%	1.1%	0.2%
Xcel Energy	Xcel-MN	MN	74,995	\$559	697	\$4.6	\$6.7	\$11.3	0.8%	1.2%	2.0%	0.9%
Yankee Gas Services	YGS	CT	48,631	\$599	108	\$3.7	\$1.0	\$4.7	0.6%	0.2%	0.8%	0.2%
Connecticut Natural Gas	CNG	CT	29,155	\$288	74	\$3.1	\$0.8	\$3.9	1.1%	0.3%	1.4%	0.3%
Southern Connecticut N.G.	SoCT	CT	28,396	\$357	85	\$3.1	\$0.3	\$3.3	0.9%	0.1%	0.9%	0.3%
National Grid	NGrid- MA	MA	126,182	\$1,865	691	\$25.1	\$9.1	\$34.2	1.3%	0.5%	1.8%	0.5%
NStar	NStar-MA	MA	45,955	\$478	268	\$8.6	\$4.0	\$12.6	1.8%	0.8%	2.6%	0.6%
Focus on Energy	WFOE	WI	326,700	\$2,820	2,248	\$15.8	\$7.5	\$23.3	0.6%	0.3%	0.8%	0.7%
Iowa Statewide Total	Iowa	IA	106,084	\$930	990	\$31.6	\$8.6	\$40.1	3.4%	0.9%	4.3%	0.9%

Appendix B. Supplemental Material: Demand Response

Table B.1 provides the calculated participation rates underlying Figure 16 in Volume I.

Table B.1. Summary of Residential DLC Program Saturation

Utility - State	Calculated 2010 Participation Rate
Indiana Michigan Power Company - IN	0.01%
Entergy Louisiana, Inc. - LA	0.05%
Central Illinois Pub Serv Co, - IL	0.08%
Avista Corporation, dba Avista Utilities - ID	0.17%
Puget Sound Energy, Inc. - WA	0.29%
Progress Energy Carolinas - SC	0.36%
Alabama Power Company - AL	0.51%
Ohio Edison Co. - OH	0.90%
Progress Energy Carolinas - NC	1.13%
Cleveland Electric Illuminating Co - OH	1.13%
XCEL d/b/a Southwestern Public Service Co - TX	1.20%
Wisconsin Public Service Corporation - MI	2.19%
Commonwealth Edison Company - IL	3.11%
KCP&L Greater Missouri Operation Company - MO	3.16%
Wisconsin Power and Light Company - WI	4.55%
Pacific Gas and Electric Company - CA	5.80%
San Diego Gas & Electric Company - CA	6.22%
Duke Energy Corporation - OH	6.95%
Kansas City Power & Light Company - MO	7.97%
Public Service Company of New Mexico - NM	8.04%
Atlantic City Electric Company - NJ	8.22%
Kansas City Power & Light Company - KS	9.24%
Tampa Electric Company - FL	9.71%
Duke Energy Corporation - KY	10.20%
Indianapolis Power & Light Company - IN	10.31%
Public Service Electric & Gas Company - NJ	10.43%
Duke Energy Corporation - IN	10.73%
Idaho Power Company - OR	10.97%
Duke Energy Corporation - NC	11.03%
XCEL d/b/a Northern States Power Co - Wisconsin - WI	11.30%
Wisconsin Public Service Corporation - WI	11.54%

Utility - State	Calculated 2010 Participation Rate
Jersey Central Power & Light Co - NJ	11.61%
Nevada Power Company - NV	11.71%
Idaho Power Company - ID	13.92%
Duke Energy Corporation - SC	14.05%
Delmarva Power & Light Company - MD	15.85%
MidAmerican Energy Company - IA	17.90%
XCEL d/b/a Northern States Power Co - Minnesota - ND	18.09%
Interstate Power and Light Company - IA	19.00%
Southern California Edison - CA	20.18%
Florida Power & Light, Co. - FL	23.37%
Hawaiian Electric - HI	24.18%
Delmarva Power & Light Company - DE	24.58%
XCEL d/b/a Public Service Co of Colorado - CO	24.75%
PacifiCorp - UT	25.60%
The Detroit Edison Company - MI	29.12%
Progress Energy Florida - FL	32.33%
XCEL d/b/a Northern States Power Co - Minnesota - SD	33.96%
Southern Indiana Gas & Electric Co. - IN	36.17%
Central Vermont Public Service Corporation - VT	42.61%
XCEL d/b/a Northern States Power Co - Minnesota - MN	45.44%
Baltimore Gas and Electric Company - MD	54.70%

Table B.2 provides the calculated participation rates underlying Figure 17 in Volume I.

Table B.2. Summary of Utility Interruptible Program Participation

Utility - State	Calculated 2010 Participation Rate
Kansas City Power & Light Company	0.66%
Southwestern Electric Power Company	0.83%
Public Service Company of Oklahoma	1.20%
Empire Direct Electric Company	1.27%
Kansas City Power & Light Company	1.28%
Public Service Co of NH	1.29%
Duke Energy Corporation	1.75%
Progress Energy Carolinas	1.86%
Progress Energy Carolinas	1.92%
Duke Energy Corporation	1.98%
Connecticut Light and Power Co	2.17%
Southern California Edison	2.31%
Georgia Power	2.34%
Kansas City Power & Light Company	2.75%
Duke Energy Corporation	3.48%
South Carolina Electric & Gas Company	3.63%
Sierra Pacific Power Company	3.71%
Duke Energy Corporation	4.48%
Metropolitan Edison Co	4.73%
El Paso Electric Company	4.79%
Entergy Texas, Inc.	5.30%
Entergy Arkansas, Inc.	5.52%
Mississippi Power Company	6.09%
Tampa Electric Company	6.52%
MidAmerican Energy Company	7.60%
Consolidated Edison Company of New York	8.75%
Wisconsin Power and Light Company	9.64%
Indiana Michigan Power Company	14.15%
Alliant	14.20%
Ohio Power Company	15.75%
Alabama Power Company	15.94%
Hawaiian Electric	25.81%

Table B.3 provides the results of research into Residential DLC snapback effects in other jurisdictions.

Table B.3. Summary of Residential DLC Snapback Research

Study	Average Peak Demand Reduction (kW)	Average Snapback Load Increase (kW)	Snapback as % of Demand Reduction
Bonneville Power Administration			
DLC w/ AC & WH	0.70	=>0.70	100%
DLC w/ WH	0.26	=>0.26	100%
Progress Energy Carolinas			
AC DLC (Asheville-typical) total event kWh	1.81	0.9	50%
AC DLC (Asheville-extreme) total event kWh	2.22	1.1	50%
AC DLC (Raleigh-typical) total event kWh	2.69	1.3	48%
AC DLC (Raleigh-extreme) total event kWh	3.43	1.61	47%
AC DLC (Wilmington-typical) total event kWh	2.38	1.19	50%
AC DLC (Wilmington-extreme) total event kWh	2.96	1.44	49%
Water Heating DLC	0.80	0.57	71%
Pacific Gas & Electric			
AC DLC	0.86	0.46	53%

Appendix C. Supplemental Material: Assessment of NTG

Table C.1 provides the 32 jurisdictions reviewed, whether the jurisdiction has an Energy Efficiency Resource Standard in place, and whether spillover and/or freeridership are considered.

Table C.1. Treatment of Freeridership and Spillover by Jurisdiction

Jurisdiction	EERS	Spillover		Freeridership
		Participant	Nonparticipant	
Arizona	Yes	No	No	No
Arkansas	Yes	Yes	Yes	Yes
California	Yes	Yes	No	Yes
Colorado	Yes	No	No	Yes
Connecticut	Yes	Yes	Yes	Yes
Delaware	No	No	No	No
District of Columbia	No	No	No	No
Florida	Yes	Yes	Yes	Yes
Hawaii	Yes	No	No	Yes
Idaho	No	No	No	No
Indiana	Yes	No	No	Yes
Iowa	Yes	No	No	No
Maine	Yes	No	No	Yes
Maryland	Yes	No	No	No
Massachusetts	Yes	Yes	Yes	Yes
Michigan	Yes	No	No	No
Minnesota	Yes	No	No	Yes
Nevada	Yes	No	No	Yes
New Hampshire	No	Yes	Yes	No
New Jersey	No	No	No	No
New Mexico	Yes	No	No	No
New York	Yes	Yes	Yes	Yes
North Carolina	Yes	No	No	No
Ohio	Yes	No	No	No
Oregon	Yes	Yes	Yes	Yes
Pennsylvania	Yes	No	No	No
Rhode Island	Yes	Yes	No	No
Texas	Yes	No	No	No
Utah	No	Yes	Yes	Yes
Vermont	Yes	Yes	Yes	Yes
Washington	Yes	Yes	Yes	Yes
Wisconsin	Yes	No	No	Yes