Industrial Measures

Measure									Characteristics													Sources			Measure Assumptions in 2017											
Key	State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Efficient Definition in 2018	Measure Identifier	Replacement Type	Baseline Definition	Efficient Definition / Measure Description	Measure Ramp Rate Name	Ramp Offset	Assigned Utility Loads hape	Input Unit of Measure	Input Units	Units per Empl	Transmission Losses	Lifetime Source	Costs Source	Savings Source	Measure Lifetime (Years)	Incremental Measure Cost ($)	Incremental O&M Cost ($)	Incremental Non-Energy Benefits ($)	RIM Only NBIs	Cost Scalar	Measure Savings @ meter ($/kW)/($/kW-Year)	Summer Coincident Peak Factor (kW/kWh)	Winter Coincident Peak Factor ($/kW/kWh)	Incentive	Admin	Base Saturation	Applicability
1400356	WA	Industrial	Food Products	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I01	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	8.41	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	33.5%	30.0%
1400357	WA	Industrial	Food Products	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I02	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	0.93	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	41.9%	100.0%
1400358	WA	Industrial	Food Products	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I03	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	15.23	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	21.8%	100.0%
1400359	WA	Industrial	Food Products	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I04	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	8.41	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	33.5%	30.0%
1400360	WA	Industrial	Food Products	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I05	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	0.93	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	41.9%	100.0%
1400361	WA	Industrial	Food Products	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I06	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	15.23	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	21.8%	100.0%
1400362	WA	Industrial	Agriculture	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I07	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	4.07	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	24.4%	30.0%
1400363	WA	Industrial	Agriculture	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I08	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	1.14	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	12.1%	100.0%
1400364	WA	Industrial	Agriculture	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I09	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.97	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	29.6%	100.0%
1400365	WA	Industrial	Agriculture	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I010	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	4.07	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	24.4%	30.0%
1400366	WA	Industrial	Agriculture	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I011	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	1.14	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	12.1%	100.0%
1400367	WA	Industrial	Agriculture	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I012	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.97	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	29.6%	100.0%
1400368	WA	Industrial	Primary Metals	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I013	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	13.33	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	42.6%	30.0%
1400369	WA	Industrial	Primary Metals	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I014	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	28.52	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	2.8%	100.0%
1400370	WA	Industrial	Primary Metals	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I015	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	13.66	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	49.1%	100.0%
1400371	WA	Industrial	Primary Metals	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I016	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	13.33	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	42.6%	30.0%
1400372	WA	Industrial	Primary Metals	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I017	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	28.52	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	2.8%	100.0%
1400373	WA	Industrial	Primary Metals	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I018	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	13.66	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	49.1%	100.0%
1400374	WA	Industrial	Stone, Clay, and Glass	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I019	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	15.68	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	28.8%	30.0%
1400375	WA	Industrial	Stone, Clay, and Glass	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I020	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	6.94	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	9.0%	100.0%
1400376	WA	Industrial	Stone, Clay, and Glass	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I021	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	21.16	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	25.1%	100.0%
1400377	WA	Industrial	Stone, Clay, and Glass	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I022	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	15.68	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	28.8%	30.0%
1400378	WA	Industrial	Stone, Clay, and Glass	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I023	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	6.94	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	9.0%	100.0%
1400379	WA	Industrial	Stone, Clay, and Glass	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I024	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	21.16	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	25.1%	100.0%
1400380	WA	Industrial	Petroleum	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I025	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3,312.08	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	0.3%	30.0%
1400381	WA	Industrial	Petroleum	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I026	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	104.16	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	1.3%	100.0%
1400382	WA	Industrial	Petroleum	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I027	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	11.17	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	0.0%	100.0%
1400383	WA	Industrial	Petroleum	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I028	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3,312.08	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	0.3%	30.0%
1400384	WA	Industrial	Petroleum	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I029	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	104.16	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	1.3%	100.0%
1400385	WA	Industrial	Petroleum	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I030	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	11.17	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	0.0%	100.0%
1400386	WA	Industrial	Paper and Printing	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I031	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	46.97	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	38.0%	30.0%
1400387	WA	Industrial	Paper and Printing	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I032	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	98.84	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	2.5%	100.0%
1400388	WA	Industrial	Paper and Printing	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I033	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	46.12	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	45.7%	100.0%
1400389	WA	Industrial	Paper and Printing	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I034	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	46.97	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	38.0%	30.0%
1400390	WA	Industrial	Paper and Printing	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I035	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	98.84	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	2.5%	100.0%
1400391	WA	Industrial	Paper and Printing	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I036	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	46.12	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	45.7%	100.0%
1400392	WA	Industrial	Instruments	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I037	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.41	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	39.7%	30.0%
1400393	WA	Industrial	Instruments	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I038	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	4.04	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	3.3%	100.0%
1400394	WA	Industrial	Instruments	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I039	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.92	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	38.9%	100.0%
1400395	WA	Industrial	Instruments	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I040	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.41	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	39.7%	30.0%
1400396	WA	Industrial	Instruments	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I041	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	4.04	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	3.3%	100.0%
1400397	WA	Industrial	Instruments	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I042	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.92	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	38.9%	100.0%
1400398	WA	Industrial	Wood and Lumber Products	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I043	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.74	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	49.1%	30.0%
1400399	WA	Industrial	Wood and Lumber Products	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I044	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	0.88	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	29.1%	100.0%
1400400	WA	Industrial	Wood and Lumber Products	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I045	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	19.14	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	11.3%	100.0%
1400401	WA	Industrial	Wood and Lumber Products	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I046	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.74	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	49.1%	30.0%
1400402	WA	Industrial	Wood and Lumber Products	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I047	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	0.88	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	29.1%	100.0%
1400403	WA	Industrial	Wood and Lumber Products	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I048	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	19.14	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	11.3%	100.0%
1400404	WA	Industrial	Other Industrial	Existing	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I049	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.13	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	46.6%	30.0%
1400405	WA	Industrial	Other Industrial	Existing	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I050	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.00	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	6.9%	100.0%
1400406	WA	Industrial	Other Industrial	Existing	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I051	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.62	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	32.4%	100.0%
1400407	WA	Industrial	Other Industrial	New	Space Heat	Natural Ga	Furnace	A	AFUE 95%	I052	Turnover	AFUE 80% (Standard)	AFUE 95%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.13	0.00%	GFURN-Heating-AE015-17B	CNGC Res Program	AEGEIST	18	$ 24.80	$ -	$ -	$ -	1.00	3.61	-	-	20.1%	22.2%	46.6%	30.0%
1400408	WA	Industrial	Other Industrial	New	Space Heat	Natural Ga	Boiler	A	AFUE 98%	I053	Turnover	AFUE 80% (Standard)	AFUE 98%	LOLEMat	0	TBD	1 MMcf/Hr	1.00	2.00	0.00%	GBLR-Heating-AE013-3	GBLR-Heating-EA14-2014 Ref. Case-6	GBLR-Heating-EA14-2014 Ref. Case-6	25	$ 6.38	$ -	$ -	$ -	1.04	7.78	-	-	94.1%	103.5%	6.9%	100.0%
1400409	WA	Industrial	Other Industrial	New	Space Heat	Natural Ga	Unit Heater	A	Infrared Radiant	I054	Turnover	Standard	Infrared Radiant	LOLEMat	0	TBD	1 MMcf/Hr	1.00	3.62	0.00%	UNTH-Heating-XCELCO-2017-18-4	CNGC Program Data	UNTHT-Heating-XCELCO-2017-18-4	15	$ 5.54	$ -	$ -	$ -	1.00	3.20	-	-	29.9%	32.9%	32.4%	100.0%

Industrial Non-Equipment

Measure					Characteristics									Sources			Measure Assumptions in 2017							
Segment	Vintage	End Use	Measure	Efficient Definition	Replacement Type	Baseline Definition (NEM Only)	Measure Description	Measure Ramp Rate Name	Ramp Offset	Input Unit of Measure	Employees per facility	UOM Per Facility	Line Loss	Lifetime Source	Costs Source	Savings Source	Measure Lifetime (Years)	Incremental Measure Cost ($)	Incremental O&M Cost ($)	Incremental Non-Energy Benefits ($)	Cost Scalar	Measure Savings @ meter (therm) (NEM Only)	Base Saturation	Applicability
Food Products	Existing	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	260	0.16%	INS_CLG-Heating-RTF-v2.1-55	INS_CLG-Heating-RTF-v2.1-55	Building Energy Simulation Tool	45	$ 1.02	$ -	$ 0.03	1.18	0.10	60.0%	100.0%
Food Products	Existing	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	260	0.16%	INS_WC-Heating-RTF-v2.1-1	INS_WC-Heating-RTF-v2.1-1	Building Energy Simulation Tool	45	$ 0.31	$ -	$ 0.02	1.18	0.07	60.0%	100.0%
Food Products	Existing	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	316	0.16%	INS_DCT-All-DEER-1	INS_DCT-All-DEER-1	Building Energy Simulation Tool	20	$ 0.86	$ -	$ 0.00	1.12	0.00	40.0%	60.0%
Food Products	Existing	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	316	0.16%	DCT_RPR-All-DEER-1	DCT_RPR-Cooling-RTF-1	Building Energy Simulation Tool	18	$ 0.59	$ -	$ 0.00	1.18	0.00	15.0%	50.0%
Food Products	Existing	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	260	0.16%	WND_HE-Heating-RTF-v2.1-46	WND_HE-Heating-RTF-v2.1-46	Building Energy Simulation Tool	45	$ 0.23	$ -	$ 0.01	1.18	0.03	45.0%	100.0%
Food Products	Existing	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	employee	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	0.62	20.0%	30.0%
Food Products	Existing	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	28.43	20.0%	30.0%
Food Products	Existing	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	20.0%	30.0%
Food Products	Existing	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	employee	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 46.00	$ -	$ -	1.18	2.78	20.0%	45.0%
Food Products	Existing	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 46.00	$ -	$ -	1.18	126.36	20.0%	45.0%
Food Products	Existing	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	employee	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 15.62	$ -	$ -	1.08	1.24	73.0%	85.0%
Food Products	Existing	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 15.62	$ -	$ -	1.08	56.66	73.0%	85.0%
Food Products	Existing	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	employee	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 66.27	$ -	$ -	1.02	1.04	35.0%	50.0%
Food Products	Existing	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 66.27	$ -	$ -	1.02	47.39	35.0%	50.0%
Food Products	Existing	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	employee	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 22.26	$ -	$ -	1.02	0.30	5.0%	85.0%
Food Products	Existing	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 22.26	$ -	$ -	1.02	13.74	5.0%	85.0%
Food Products	Existing	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	316	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.25	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Food Products	Existing	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	employee	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 37.58	$ -	$ -	1.18	0.46	15.0%	55.0%
Food Products	Existing	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 37.58	$ -	$ -	1.18	21.06	15.0%	55.0%
Food Products	Existing	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	316	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Food Products	Existing	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	260	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	0.02	5.0%	10.0%
Food Products	Existing	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	260	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ 0.01	1.04	0.03	25.0%	40.0%
Food Products	Existing	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	260	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.03	1.18	0.07	5.0%	20.0%
Food Products	Existing	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	260	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ 0.02	1.18	0.06	15.0%	30.0%
Food Products	Existing	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 117.39	$ -	$ -	1.06	1.17	40.0%	50.0%
Food Products	Existing	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 117.39	$ -	$ -	1.06	53.34	40.0%	50.0%
Food Products	Existing	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 219.27	$ -	$ -	1.06	0.78	40.0%	50.0%
Food Products	Existing	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 219.27	$ -	$ -	1.06	35.71	40.0%	50.0%
Food Products	Existing	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Food Products	Existing	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Food Products	Existing	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	260	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.30	$ -	$ 0.39	1.00	0.06	5.0%	65.0%
Food Products	Existing	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	31	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Food Products	Existing	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Food Products	Existing	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ -	$ 41.72	1.00	7.20	5.0%	50.0%
Food Products	Existing	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ -	$ 41.72	1.00	30.21	5.0%	50.0%
Food Products	Existing	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ -	$ 41.72	1.00	2.79	5.0%	50.0%
Food Products	Existing	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Food Products	Existing	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Food Products	Existing	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 166.04	$ -	$ 47.94	1.04	7.60	15.0%	50.0%
Food Products	Existing	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 166.04	$ -	$ 47.94	1.04	118.55	15.0%	50.0%
Food Products	New	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	260	0.16%	INS_CLG-Heating-RTF-v2.1-55	N/A	Building Energy Simulation Tool	45	$ 1.18	$ -	$ -	1.18	-	0.0%	0.0%
Food Products	New	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	260	0.16%	INS_WC-Heating-RTF-v2.1-1	N/A	Building Energy Simulation Tool	45	$ 0.22	$ -	$ -	1.18	-	0.0%	0.0%
Food Products	New	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	316	0.16%	INS_DCT-All-DEER-1	N/A	Building Energy Simulation Tool	20	$ 1.12	$ -	$ 0.00	1.12	0.00	0.0%	0.0%
Food Products	New	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	316	0.16%	DCT_RPR-All-DEER-1	N/A	Building Energy Simulation Tool	18	$ -	$ -	$ 0.00	1.18	0.00	0.0%	0.0%
Food Products	New	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	260	0.16%	WND_HE-Heating-RTF-v2.1-46	N/A	Building Energy Simulation Tool	45	$ -	$ -	$ -	1.18	-	0.0%	0.0%
Food Products	New	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	0.59	5.0%	10.0%
Food Products	New	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	28.43	5.0%	10.0%
Food Products	New	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	5.0%	10.0%
Food Products	New	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 45.95	$ -	$ -	1.18	2.64	20.0%	45.0%
Food Products	New	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 45.95	$ -	$ -	1.18	126.36	20.0%	45.0%
Food Products	New	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 14.82	$ -	$ -	1.08	1.18	0.0%	0.0%
Food Products	New	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 14.82	$ -	$ -	1.08	56.66	0.0%	0.0%
Food Products	New	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 66.20	$ -	$ -	1.02	0.99	35.0%	50.0%
Food Products	New	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 66.20	$ -	$ -	1.02	47.39	35.0%	50.0%
Food Products	New	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 22.24	$ -	$ -	1.02	0.29	5.0%	85.0%
Food Products	New	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 22.24	$ -	$ -	1.02	13.74	5.0%	85.0%
Food Products	New	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	316	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.16	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Food Products	New	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 37.54	$ -	$ -	1.18	0.44	15.0%	55.0%
Food Products	New	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 37.54	$ -	$ -	1.18	21.06	15.0%	55.0%
Food Products	New	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	316	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Food Products	New	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	260	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	-	5.0%	10.0%
Food Products	New	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	260	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ -	1.04	-	25.0%	40.0%
Food Products	New	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	260	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.01	1.18	-	5.0%	20.0%
Food Products	New	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	260	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ -	1.18	-	15.0%	30.0%
Food Products	New	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 117.27	$ -	$ -	1.06	1.11	45.0%	50.0%
Food Products	New	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 117.27	$ -	$ -	1.06	53.34	45.0%	50.0%
Food Products	New	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 219.04	$ -	$ -	1.06	0.75	45.0%	50.0%
Food Products	New	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 219.04	$ -	$ -	1.06	35.71	45.0%	50.0%
Food Products	New	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Food Products	New	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Food Products	New	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	260	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.34	$ -	$ -	1.00	-	5.0%	65.0%
Food Products	New	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	31	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Food Products	New	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Food Products	New	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ 1.29	$ -	1.00	-	5.0%	50.0%
Food Products	New	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ 1.29	$ -	1.00	-	5.0%	50.0%
Food Products	New	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 54.32	$ 1.29	$ -	1.00	-	5.0%	50.0%
Food Products	New	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Food Products	New	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Food Products	New	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Food Products	New	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	Existing	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	131	0.16%	INS_CLG-Heating-RTF-v2.1-55	INS_CLG-Heating-RTF-v2.1-55	Building Energy Simulation Tool	45	$ 1.02	$ -	$ 0.05	1.18	0.10	60.0%	100.0%
Agriculture	Existing	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	131	0.16%	INS_WC-Heating-RTF-v2.1-1	INS_WC-Heating-RTF-v2.1-1	Building Energy Simulation Tool	45	$ 0.31	$ -	$ 0.04	1.18	0.07	60.0%	100.0%
Agriculture	Existing	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	118	0.16%	INS_DCT-All-DEER-1	INS_DCT-All-DEER-1	Building Energy Simulation Tool	20	$ 0.86	$ -	$ 0.00	1.12	0.00	40.0%	60.0%
Agriculture	Existing	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	118	0.16%	DCT_RPR-All-DEER-1	DCT_RPR-Cooling-RTF-1	Building Energy Simulation Tool	18	$ 0.59	$ -	$ 0.00	1.18	0.00	15.0%	50.0%
Agriculture	Existing	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	131	0.16%	WND_HE-Heating-RTF-v2.1-46	WND_HE-Heating-RTF-v2.1-46	Building Energy Simulation Tool	45	$ 0.23	$ -	$ 0.02	1.18	0.03	45.0%	100.0%
Agriculture	Existing	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	employee	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.00	$ -	$ -	1.06	1.56	20.0%	30.0%
Agriculture	Existing	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.00	$ -	$ -	1.06	1.27	20.0%	30.0%
Agriculture	Existing	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	20.0%	30.0%
Agriculture	Existing	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	employee	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 4.49	$ -	$ -	1.18	6.95	20.0%	45.0%
Agriculture	Existing	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 4.49	$ -	$ -	1.18	5.66	20.0%	45.0%
Agriculture	Existing	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	employee	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 1.52	$ -	$ -	1.08	3.12	73.0%	85.0%
Agriculture	Existing	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 1.52	$ -	$ -	1.08	2.54	73.0%	85.0%
Agriculture	Existing	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	employee	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 6.47	$ -	$ -	1.02	2.61	35.0%	50.0%
Agriculture	Existing	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 6.47	$ -	$ -	1.02	2.12	35.0%	50.0%
Agriculture	Existing	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	employee	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 2.17	$ -	$ -	1.02	0.76	5.0%	85.0%
Agriculture	Existing	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 2.17	$ -	$ -	1.02	0.62	5.0%	85.0%
Agriculture	Existing	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	118	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.25	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Agriculture	Existing	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	employee	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 3.67	$ -	$ -	1.18	1.16	15.0%	55.0%
Agriculture	Existing	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 3.67	$ -	$ -	1.18	0.94	15.0%	55.0%
Agriculture	Existing	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	118	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Agriculture	Existing	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	131	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	0.02	5.0%	10.0%
Agriculture	Existing	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	131	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ 0.02	1.04	0.03	25.0%	40.0%
Agriculture	Existing	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	131	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.05	1.18	0.07	5.0%	20.0%
Agriculture	Existing	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	131	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ 0.03	1.18	0.06	15.0%	30.0%
Agriculture	Existing	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 11.46	$ -	$ -	1.06	2.93	40.0%	50.0%
Agriculture	Existing	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 11.46	$ -	$ -	1.06	2.39	40.0%	50.0%
Agriculture	Existing	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 21.40	$ -	$ -	1.06	1.96	40.0%	50.0%
Agriculture	Existing	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 21.40	$ -	$ -	1.06	1.60	40.0%	50.0%
Agriculture	Existing	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Agriculture	Existing	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Agriculture	Existing	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	131	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.30	$ -	$ 0.76	1.00	0.06	5.0%	65.0%
Agriculture	Existing	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	77	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Agriculture	Existing	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Agriculture	Existing	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ -	$ 42.58	1.00	3.63	5.0%	50.0%
Agriculture	Existing	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ -	$ 42.58	1.00	1.41	5.0%	50.0%
Agriculture	Existing	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ -	$ 42.58	1.00	0.90	5.0%	50.0%
Agriculture	Existing	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	Existing	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	Existing	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 10.80	$ -	$ 47.61	1.04	2.69	15.0%	50.0%
Agriculture	Existing	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 10.80	$ -	$ 47.61	1.04	5.52	15.0%	50.0%
Agriculture	New	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	131	0.16%	INS_CLG-Heating-RTF-v2.1-55	N/A	Building Energy Simulation Tool	45	$ 1.18	$ -	$ -	1.18	-	0.0%	0.0%
Agriculture	New	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	131	0.16%	INS_WC-Heating-RTF-v2.1-1	N/A	Building Energy Simulation Tool	45	$ 0.22	$ -	$ -	1.18	-	0.0%	0.0%
Agriculture	New	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	118	0.16%	INS_DCT-All-DEER-1	N/A	Building Energy Simulation Tool	20	$ 1.12	$ -	$ 0.00	1.12	0.00	0.0%	0.0%
Agriculture	New	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	118	0.16%	DCT_RPR-All-DEER-1	N/A	Building Energy Simulation Tool	18	$ -	$ -	$ 0.00	1.18	0.00	0.0%	0.0%
Agriculture	New	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	131	0.16%	WND_HE-Heating-RTF-v2.1-46	N/A	Building Energy Simulation Tool	45	$ -	$ -	$ -	1.18	-	0.0%	0.0%
Agriculture	New	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.00	$ -	$ -	1.06	1.48	5.0%	10.0%
Agriculture	New	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.00	$ -	$ -	1.06	1.27	5.0%	10.0%
Agriculture	New	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	5.0%	10.0%
Agriculture	New	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 4.37	$ -	$ -	1.18	6.60	20.0%	45.0%
Agriculture	New	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 4.37	$ -	$ -	1.18	5.66	20.0%	45.0%
Agriculture	New	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 1.41	$ -	$ -	1.08	2.96	0.0%	0.0%
Agriculture	New	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 1.41	$ -	$ -	1.08	2.54	0.0%	0.0%
Agriculture	New	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 6.29	$ -	$ -	1.02	2.47	35.0%	50.0%
Agriculture	New	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 6.29	$ -	$ -	1.02	2.12	35.0%	50.0%
Agriculture	New	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 2.11	$ -	$ -	1.02	0.72	5.0%	85.0%
Agriculture	New	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 2.11	$ -	$ -	1.02	0.62	5.0%	85.0%
Agriculture	New	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	118	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.16	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Agriculture	New	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 3.57	$ -	$ -	1.18	1.10	15.0%	55.0%
Agriculture	New	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 3.57	$ -	$ -	1.18	0.94	15.0%	55.0%
Agriculture	New	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	118	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Agriculture	New	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	131	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	-	5.0%	10.0%
Agriculture	New	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	131	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ -	1.04	-	25.0%	40.0%
Agriculture	New	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	131	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.01	1.18	-	5.0%	20.0%
Agriculture	New	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	131	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ -	1.18	-	15.0%	30.0%
Agriculture	New	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 11.14	$ -	$ -	1.06	2.79	45.0%	50.0%
Agriculture	New	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condensate tank insulated	Retrofit	No insulation	Lines and condensate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 11.14	$ -	$ -	1.06	2.39	45.0%	50.0%
Agriculture	New	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 20.81	$ -	$ -	1.06	1.86	45.0%	50.0%
Agriculture	New	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 20.81	$ -	$ -	1.06	1.60	45.0%	50.0%
Agriculture	New	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Agriculture	New	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Agriculture	New	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	131	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.34	$ -	$ -	1.00	-	5.0%	65.0%

Industrial Non-Equipment

Measure					Characteristics									Sources			Measure Assumptions in 2017							
Segment	Vintage	End Use	Measure	Efficient Definition	Replacement Type	Baseline Definition (NEM Only)	Measure Description	Measure Ramp Rate Name	Ramp Offset	Input Unit of Measure	Employees per facility	UOM Per Facility	Line Loss	Lifetime Source	Costs Source	Savings Source	Measure Lifetime (Years)	Incremental Measure Cost ($)	Incremental O&M Cost ($)	Incremental Non-Energy Benefits ($)	Cost Scalar	Measure Savings @ meter (therm) (NEM Only)	Base Saturation	Applicability
Agriculture	New	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	77	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Agriculture	New	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Agriculture	New	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ 0.19	$ -	1.00	-	5.0%	50.0%
Agriculture	New	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ 0.19	$ -	1.00	-	5.0%	50.0%
Agriculture	New	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 8.02	$ 0.19	$ -	1.00	-	5.0%	50.0%
Agriculture	New	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	New	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	New	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Agriculture	New	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	Existing	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	472	0.16%	INS_CLG-Heating-RTF-v2.1-55	INS_CLG-Heating-RTF-v2.1-55	Building Energy Simulation Tool	45	$ 1.02	$ -	$ 0.02	1.18	0.10	60.0%	100.0%
Primary Metals	Existing	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	472	0.16%	INS_WC-Heating-RTF-v2.1-1	INS_WC-Heating-RTF-v2.1-1	Building Energy Simulation Tool	45	$ 0.31	$ -	$ 0.01	1.18	0.07	60.0%	100.0%
Primary Metals	Existing	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	251	0.16%	INS_DCT-All-DEER-1	INS_DCT-All-DEER-1	Building Energy Simulation Tool	20	$ 0.86	$ -	$ 0.00	1.12	0.00	40.0%	60.0%
Primary Metals	Existing	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	251	0.16%	DCT_RPR-All-DEER-1	DCT_RPR-Cooling-RTF-1	Building Energy Simulation Tool	18	$ 0.59	$ -	$ 0.00	1.18	0.00	15.0%	50.0%
Primary Metals	Existing	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	472	0.16%	WND_HE-Heating-RTF-v2.1-46	WND_HE-Heating-RTF-v2.1-46	Building Energy Simulation Tool	45	$ 0.23	$ -	$ 0.01	1.18	0.03	45.0%	100.0%
Primary Metals	Existing	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	employee	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	0.66	20.0%	30.0%
Primary Metals	Existing	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	22.94	20.0%	30.0%
Primary Metals	Existing	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	20.0%	30.0%
Primary Metals	Existing	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	employee	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 37.36	$ -	$ -	1.18	2.94	20.0%	45.0%
Primary Metals	Existing	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 37.36	$ -	$ -	1.18	101.93	20.0%	45.0%
Primary Metals	Existing	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	employee	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 12.68	$ -	$ -	1.08	1.32	73.0%	85.0%
Primary Metals	Existing	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 12.68	$ -	$ -	1.08	45.71	73.0%	85.0%
Primary Metals	Existing	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	employee	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 53.82	$ -	$ -	1.02	1.10	35.0%	50.0%
Primary Metals	Existing	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 53.82	$ -	$ -	1.02	38.23	35.0%	50.0%
Primary Metals	Existing	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	employee	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 18.08	$ -	$ -	1.02	0.32	5.0%	85.0%
Primary Metals	Existing	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 18.08	$ -	$ -	1.02	11.09	5.0%	85.0%
Primary Metals	Existing	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	251	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.25	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Primary Metals	Existing	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	employee	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 30.52	$ -	$ -	1.18	0.49	15.0%	55.0%
Primary Metals	Existing	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 30.52	$ -	$ -	1.18	16.99	15.0%	55.0%
Primary Metals	Existing	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	251	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Primary Metals	Existing	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	472	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	0.02	5.0%	10.0%
Primary Metals	Existing	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	472	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ 0.01	1.04	0.03	25.0%	40.0%
Primary Metals	Existing	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	472	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.02	1.18	0.07	5.0%	20.0%
Primary Metals	Existing	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	472	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ 0.01	1.18	0.06	15.0%	30.0%
Primary Metals	Existing	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 95.34	$ -	$ -	1.06	1.24	40.0%	50.0%
Primary Metals	Existing	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 95.34	$ -	$ -	1.06	43.02	40.0%	50.0%
Primary Metals	Existing	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 178.08	$ -	$ -	1.06	0.83	40.0%	50.0%
Primary Metals	Existing	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 178.08	$ -	$ -	1.06	28.80	40.0%	50.0%
Primary Metals	Existing	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Primary Metals	Existing	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Primary Metals	Existing	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	472	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.30	$ -	$ 0.21	1.00	0.06	5.0%	65.0%
Primary Metals	Existing	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	33	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Primary Metals	Existing	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Primary Metals	Existing	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ -	$ 39.17	1.00	13.07	5.0%	50.0%
Primary Metals	Existing	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ -	$ 39.17	1.00	100.79	5.0%	50.0%
Primary Metals	Existing	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ -	$ 39.17	1.00	18.60	5.0%	50.0%
Primary Metals	Existing	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	Existing	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	Existing	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 538.76	$ -	$ 48.35	1.04	13.78	15.0%	50.0%
Primary Metals	Existing	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 538.76	$ -	$ 48.35	1.04	395.55	15.0%	50.0%
Primary Metals	New	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	472	0.16%	INS_CLG-Heating-RTF-v2.1-55	N/A	Building Energy Simulation Tool	45	$ 1.18	$ -	$ -	1.18	-	0.0%	0.0%
Primary Metals	New	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	472	0.16%	INS_WC-Heating-RTF-v2.1-1	N/A	Building Energy Simulation Tool	45	$ 0.22	$ -	$ -	1.18	-	0.0%	0.0%
Primary Metals	New	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	251	0.16%	INS_DCT-All-DEER-1	N/A	Building Energy Simulation Tool	20	$ 1.12	$ -	$ 0.00	1.12	0.00	0.0%	0.0%
Primary Metals	New	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	251	0.16%	DCT_RPR-All-DEER-1	N/A	Building Energy Simulation Tool	18	$ -	$ -	$ 0.00	1.18	0.00	0.0%	0.0%
Primary Metals	New	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	472	0.16%	WND_HE-Heating-RTF-v2.1-46	N/A	Building Energy Simulation Tool	45	$ -	$ -	$ -	1.18	-	0.0%	0.0%
Primary Metals	New	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	0.63	5.0%	10.0%
Primary Metals	New	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.02	$ -	$ -	1.06	22.94	5.0%	10.0%
Primary Metals	New	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	5.0%	10.0%
Primary Metals	New	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 37.30	$ -	$ -	1.18	2.80	20.0%	45.0%
Primary Metals	New	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 37.30	$ -	$ -	1.18	101.93	20.0%	45.0%
Primary Metals	New	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 12.03	$ -	$ -	1.08	1.25	0.0%	0.0%
Primary Metals	New	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 12.03	$ -	$ -	1.08	45.71	0.0%	0.0%
Primary Metals	New	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 53.74	$ -	$ -	1.02	1.05	35.0%	50.0%
Primary Metals	New	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 53.74	$ -	$ -	1.02	38.23	35.0%	50.0%
Primary Metals	New	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 18.06	$ -	$ -	1.02	0.30	5.0%	85.0%
Primary Metals	New	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 18.06	$ -	$ -	1.02	11.09	5.0%	85.0%
Primary Metals	New	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	251	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.16	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Primary Metals	New	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 30.48	$ -	$ -	1.18	0.47	15.0%	55.0%
Primary Metals	New	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 30.48	$ -	$ -	1.18	16.99	15.0%	55.0%
Primary Metals	New	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	251	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Primary Metals	New	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	472	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	-	5.0%	10.0%
Primary Metals	New	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	472	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ -	1.04	-	25.0%	40.0%
Primary Metals	New	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	472	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.01	1.18	-	5.0%	20.0%
Primary Metals	New	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	472	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ -	1.18	-	15.0%	30.0%
Primary Metals	New	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 95.21	$ -	$ -	1.06	1.18	45.0%	50.0%
Primary Metals	New	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 95.21	$ -	$ -	1.06	43.02	45.0%	50.0%
Primary Metals	New	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 177.83	$ -	$ -	1.06	0.79	45.0%	50.0%
Primary Metals	New	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 177.83	$ -	$ -	1.06	28.80	45.0%	50.0%
Primary Metals	New	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Primary Metals	New	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Primary Metals	New	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	472	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.34	$ -	$ -	1.00	-	5.0%	65.0%
Primary Metals	New	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	33	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Primary Metals	New	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Primary Metals	New	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ 4.26	$ -	1.00	-	5.0%	50.0%
Primary Metals	New	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ 4.26	$ -	1.00	-	5.0%	50.0%
Primary Metals	New	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 179.01	$ 4.26	$ -	1.00	-	5.0%	50.0%
Primary Metals	New	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	New	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	New	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Primary Metals	New	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	n/a	5	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Stone, Clay, and Glass	Existing	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	483	0.16%	INS_CLG-Heating-RTF-v2.1-55	INS_CLG-Heating-RTF-v2.1-55	Building Energy Simulation Tool	45	$ 1.02	$ -	$ 0.02	1.18	0.10	60.0%	100.0%
Stone, Clay, and Glass	Existing	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	483	0.16%	INS_WC-Heating-RTF-v2.1-1	INS_WC-Heating-RTF-v2.1-1	Building Energy Simulation Tool	45	$ 0.31	$ -	$ 0.01	1.18	0.07	60.0%	100.0%
Stone, Clay, and Glass	Existing	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	347	0.16%	INS_DCT-All-DEER-1	INS_DCT-All-DEER-1	Building Energy Simulation Tool	20	$ 0.86	$ -	$ 0.00	1.12	0.00	40.0%	60.0%
Stone, Clay, and Glass	Existing	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	347	0.16%	DCT_RPR-All-DEER-1	DCT_RPR-Cooling-RTF-1	Building Energy Simulation Tool	18	$ 0.59	$ -	$ 0.00	1.18	0.00	15.0%	50.0%
Stone, Clay, and Glass	Existing	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	483	0.16%	WND_HE-Heating-RTF-v2.1-46	WND_HE-Heating-RTF-v2.1-46	Building Energy Simulation Tool	45	$ 0.23	$ -	$ 0.01	1.18	0.03	45.0%	100.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	employee	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.01	$ -	$ -	1.06	7.50	20.0%	30.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.01	$ -	$ -	1.06	3.44	20.0%	30.0%
Stone, Clay, and Glass	Existing	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.01	$ -	$ -	1.06	0.01	20.0%	30.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	employee	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 17.33	$ -	$ -	1.18	33.34	20.0%	45.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 17.33	$ -	$ -	1.18	15.31	20.0%	45.0%
Stone, Clay, and Glass	Existing	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	employee	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 5.88	$ -	$ -	1.08	14.95	73.0%	85.0%
Stone, Clay, and Glass	Existing	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 5.88	$ -	$ -	1.08	6.86	73.0%	85.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	employee	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 24.96	$ -	$ -	1.02	12.50	35.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 24.96	$ -	$ -	1.02	5.74	35.0%	50.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	employee	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 8.39	$ -	$ -	1.02	3.63	5.0%	85.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 8.39	$ -	$ -	1.02	1.66	5.0%	85.0%
Stone, Clay, and Glass	Existing	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	347	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.25	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	employee	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 14.16	$ -	$ -	1.18	5.56	15.0%	55.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 14.16	$ -	$ -	1.18	2.55	15.0%	55.0%
Stone, Clay, and Glass	Existing	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	347	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Stone, Clay, and Glass	Existing	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	483	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	0.02	5.0%	10.0%
Stone, Clay, and Glass	Existing	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	483	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ 0.01	1.04	0.03	25.0%	40.0%
Stone, Clay, and Glass	Existing	Heating	Thermostat - WiFi Enabled	Wi-Fi/interactive thermostat installed	Retrofit	Manual control	Wi-Fi/interactive thermostat installed	RetroEven20	0	sqft	1	483	0.16%	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	STAT_WIFI-All-7PLN-v2-1	5	$ 0.75	$ -	$ 0.02	1.18	0.07	5.0%	20.0%
Stone, Clay, and Glass	Existing	Heating	Destratification Fans (HVLS)	Fans installed	Retrofit	None/Standard ventilation	Fans installed	RetroEven20	0	sqft	1	483	0.16%	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	HVLS-Heating-AEG-v5.0-121	10	$ 0.67	$ -	$ 0.01	1.18	0.06	15.0%	30.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 44.22	$ -	$ -	1.06	14.07	40.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Insulate Steam Lines/Condensate Tank	Lines and condenstate tank insulated	Retrofit	No insulation	Lines and condenstate tank insulated	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	GBLR_PINS_STM-Heating-PGE-R7-1	11	$ 44.22	$ -	$ -	1.06	6.46	40.0%	50.0%
Stone, Clay, and Glass	Existing	Heating	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	employee	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 82.59	$ -	$ -	1.06	9.42	40.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Gas Boiler - Insulate Hot Water Lines	Insulated water lines	Retrofit	No insulation	Insulated water lines	RetroEven20	0	sqft	1	1	0.16%	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	GBLR_PINS_HW-Heating-PGE-R7-1	11	$ 82.59	$ -	$ -	1.06	4.33	40.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Process - Insulate Heated Process Fluids	Insulated process fluid lines	Retrofit	No insulation	Insulated process fluid lines	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	15.0%	65.0%
Stone, Clay, and Glass	Existing	Process	Process Heat Recovery	HR system installed	Retrofit	No HR system	HR system installed	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	5	$ 1.00	$ -	$ -	1.00	-	5.0%	50.0%
Stone, Clay, and Glass	Existing	Heating	Building Automation System	Automation system installed and programmed	Retrofit	No control system	Automation system installed and programmed	Retro1Slow	0	sqft	1	483	0.16%	COM_EMS-All-XCELCO-2017-18-3	BEHAV_EIS-All-CPUC-2018_PG-10	COM_EMS-All-XCELCO-2017-18-3	15	$ 0.30	$ -	$ 0.21	1.00	0.06	5.0%	65.0%
Stone, Clay, and Glass	Existing	Heating	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	371	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Stone, Clay, and Glass	Existing	Process	Steam System Efficiency Improvements	Optimized system	Retrofit	Average system efficiency	Optimized system	Retro1Slow	0	sqft	1	1	0.16%	n/a	n/a	n/a	5	$ -	$ -	$ -	1.08	-	30.0%	60.0%
Stone, Clay, and Glass	Existing	Heating	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 121.86	$ -	$ 40.55	1.00	13.38	5.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 121.86	$ -	$ 40.55	1.00	60.53	5.0%	50.0%
Stone, Clay, and Glass	Existing	Miscellaneous	Strategic Energy Management	Energy management system installed and programmed	Retrofit	No energy management system	Energy management system installed and programmed	RetroEven20	0	employee	1	1	0.16%	BEHAV_SEM-All-CPUC-2018_PG-26	BEHAV_SEM-All-CPUC-2018_PG-26	AEG Research	5	$ 121.86	$ -	$ 40.55	1.00	16.26	5.0%	50.0%
Stone, Clay, and Glass	Existing	Heating	Commissioning	Optimized HVAC design and controls	Retrofit	New construction code	Optimized HVAC design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Stone, Clay, and Glass	Existing	Process	Commissioning	Optimized process design and controls	Retrofit	New construction code	Optimized process design and controls	Retro12Med	0	employee	1	1	0.16%	TBD	TBD	TBD	3	$ -	$ -	$ -	1.04	-	0.0%	0.0%
Stone, Clay, and Glass	Existing	Heating	Retrocommissioning	Optimized HVAC flow and controls	Retrofit	Vintage/existing building	Optimized HVAC flow and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 328.73	$ -	$ 48.24	1.04	12.19	15.0%	50.0%
Stone, Clay, and Glass	Existing	Process	Retrocommissioning	Optimized process design and controls	Retrofit	Vintage/existing building	Optimized process design and controls	RetroEven20	0	employee	1	1	0.16%	COM_RCX-Heating-7PLN-v5-18	COM_RCX-Heating-7PLN-v5-18	AEG Estimate	5	$ 328.73	$ -	$ 48.24	1.04	237.57	15.0%	50.0%
Stone, Clay, and Glass	New	Heating	Insulation - Roof/Ceiling	R-38	Retrofit	R-13	R-38	Retro3Slow	2	sqft	1	483	0.16%	INS_CLG-Heating-RTF-v2.1-55	N/A	Building Energy Simulation Tool	45	$ 1.18	$ -	$ -	1.18	-	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Insulation - Wall Cavity	R-21	Retrofit	R-11 or less	R-21	Retro3Slow	2	sqft	1	483	0.16%	INS_WC-Heating-RTF-v2.1-1	N/A	Building Energy Simulation Tool	45	$ 0.22	$ -	$ -	1.18	-	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Insulation - Ducting	50% reduction in thermal losses	Retrofit	~2°F thermal losses	50% reduction in thermal losses	Retro5Med	0	sqft	1	347	0.16%	INS_DCT-All-DEER-1	N/A	Building Energy Simulation Tool	20	$ 1.12	$ -	$ 0.00	1.12	0.00	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	HVAC - Duct Repair and Sealing	30% reduced duct leaking	Retrofit	Poorly sealed/leaky ducts	30% reduced duct leaking	RetroEven20	0	sqft	1	347	0.16%	DCT_RPR-All-DEER-1	N/A	Building Energy Simulation Tool	18	$ -	$ -	$ 0.00	1.18	0.00	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Windows - High Efficiency	U-.22 or better	Retrofit	U-.5 or worse	U-.22 or better	Retro1Slow	0	sqft	1	483	0.16%	WND_HE-Heating-RTF-v2.1-46	N/A	Building Energy Simulation Tool	45	$ -	$ -	$ -	1.18	-	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.01	$ -	$ -	1.06	7.12	5.0%	10.0%
Stone, Clay, and Glass	New	Process	Gas Boiler - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	GBLR_MNT-Heating-ILTRM-v4.0-1	3	$ 0.01	$ -	$ -	1.06	3.44	5.0%	10.0%
Stone, Clay, and Glass	New	Heating	Gas Furnace - Maintenance	General cleaning and maintenance	Retrofit	Degrade performance	General cleaning and maintenance	Retro20Fast	0	sqft	1	1	0.16%	GFURN_MNT-Heating-ILTRM-v4.0-1	GFURN_MNT-Heating-MNTRM-v2.1-1	GFURN_MNT-Heating-MNTRM-v2.1-1	2	$ 0.00	$ -	$ -	1.06	0.01	5.0%	10.0%
Stone, Clay, and Glass	New	Heating	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 16.73	$ -	$ -	1.18	31.67	20.0%	45.0%
Stone, Clay, and Glass	New	Process	Gas Boiler - Hot Water Reset	Reset control installed	Retrofit	No control	Reset control installed	Retro5Med	0	sqft	1	1	0.16%	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	GBLR_HWRST-Heating-ILTRM-v4.0-1	20	$ 16.73	$ -	$ -	1.18	15.31	20.0%	45.0%
Stone, Clay, and Glass	New	Heating	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 5.40	$ -	$ -	1.08	14.20	0.0%	0.0%
Stone, Clay, and Glass	New	Process	Steam Trap Maintenance	Cleaning and maintenance	Retrofit	Degrade performance	Cleaning and maintenance	RetroEven20	0	sqft	1	1	0.16%	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	GBLR_MNT_ST-Heating-XCELCO-2017-18-2	4	$ 5.40	$ -	$ -	1.08	6.86	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 24.11	$ -	$ -	1.02	11.87	35.0%	50.0%
Stone, Clay, and Glass	New	Process	Gas Boiler - High Turndown	Turndown control installed	Retrofit	No control	Turndown control installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	GBLR_TRN-Heating-MNTRM-v2.1-1	15	$ 24.11	$ -	$ -	1.02	5.74	35.0%	50.0%
Stone, Clay, and Glass	New	Heating	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 8.10	$ -	$ -	1.02	3.44	5.0%	85.0%
Stone, Clay, and Glass	New	Process	Gas Boiler - Burner Control Optimization	Optimized burner controls	Retrofit	Average performance	Optimized burner controls	Retro3Slow	0	sqft	1	1	0.16%	GBLR_O2TRM-Heating-ILTRM-v4.0-1	GBLR_O2TRM-Heating-MEMD-2018-1	GBLR_O2TRM-Heating-ILTRM-v4.0-1	18	$ 8.10	$ -	$ -	1.02	1.66	5.0%	85.0%
Stone, Clay, and Glass	New	Heating	HVAC - Demand Controlled Ventilation	DCV enabled	Retrofit	Constant ventilation	DCV enabled	RetroEven20	0	sqft	1	347	0.16%	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	VENT_DCV-Heating-7PLN-v5-8	15	$ 0.16	$ -	$ 0.01	1.18	0.02	55.0%	75.0%
Stone, Clay, and Glass	New	Heating	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 13.67	$ -	$ -	1.18	5.28	15.0%	55.0%
Stone, Clay, and Glass	New	Process	Gas Boiler - Stack Economizer	Economizer installed	Retrofit	None	Economizer installed	Retro12Med	0	sqft	1	1	0.16%	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	GBLR_ECON-Heating-XCELCO-2017-18-1	12	$ 13.67	$ -	$ -	1.18	2.55	15.0%	55.0%
Stone, Clay, and Glass	New	Heating	Gas Furnace Tube Inserts	Tube inserts installed	Retrofit	None	Tube inserts installed	Retro3Slow	0	sqft	1	347	0.16%	N/A	N/A	N/A	5	$ 1.00	$ -	$ -	1.00	-	0.0%	0.0%
Stone, Clay, and Glass	New	Heating	Space Heating - Heat Recovery Ventilator	HRV installed	Retrofit	None	HRV installed	RetroEven20	0	sqft	1	483	0.16%	HRV-Heating-ILTRM-v5.0-1	HRV-Heating-ILTRM-v5.0-3	HRV-Heating-ILTRM-v5.0-3	15	$ 0.42	$ -	$ -	1.18	-	5.0%	10.0%
Stone, Clay, and Glass	New	Heating	Thermostat - Programmable	Programmable thermostat installed	Retrofit	Manual control	Programmable thermostat installed	RetroEven20	0	sqft	1	483	0.16%	STAT-Cooling/Heating-ILTRM-v4.0-6	STAT-Cooling/Heating-ILTRM-v4.0-6	BEST	4	$ 0.19	$ -	$ -	1.04	-	25.0%	40.0%