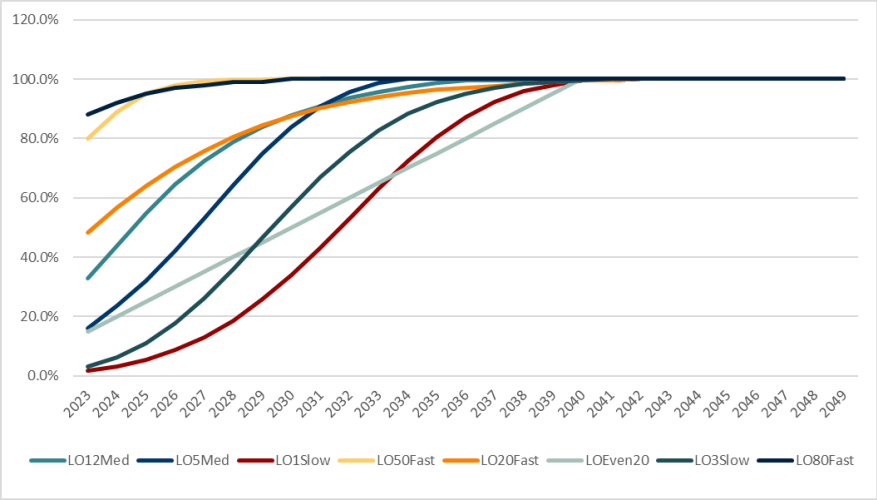
Appendix D

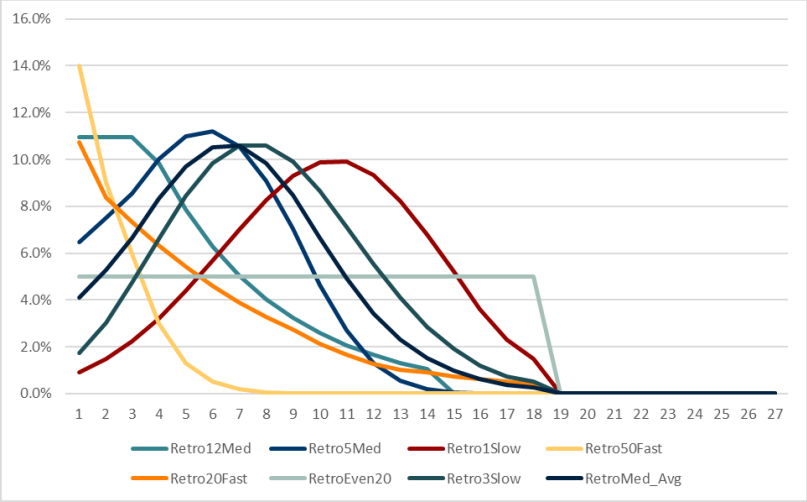
Demand Side Management

2025 WA IRP

Key	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
LO12Med	32.8%	43.7%	54.7%	64.5%	72.4%	78.7%	83.7%	87.8%	91.0%	93.6%	95.6%	97.3%	98.6%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO5Med	16.0%	23.5%	32.1%	42.1%	53.1%	64.3%	74.8%	83.9%	90.9%	95.8%	98.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO1Slow	1.7%	3.2%	5.4%	8.6%	13.0%	18.7%	25.7%	34.0%	43.3%	53.1%	63.1%	72.4%	80.6%	87.3%	92.3%	96.0%	98.0%	99.6%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO50Fast	80.0%	89.0%	95.0%	97.9%	99.3%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO20Fast	48.4%	56.7%	64.0%	70.4%	75.8%	80.4%	84.3%	87.6%	90.3%	92.4%	94.1%	95.4%	96.4%	97.1%	97.7%	98.4%	98.9%	99.6%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LOEven20	15.0%	20.0%	25.0%	30.0%	35.0%	40.0%	45.0%	50.0%	55.0%	60.0%	65.0%	70.0%	75.0%	80.0%	85.0%	90.0%	95.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO3Slow	3.2%	6.2%	10.9%	17.6%	26.0%	35.8%	46.4%	57.0%	66.9%	75.6%	82.7%	88.3%	92.3%	95.2%	97.1%	98.3%	99.1%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
LO80Fast	88.0%	92.0%	95.0%	97.0%	98.0%	99.0%	99.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Retro12Med	10.9%	10.9%	10.9%	9.8%	7.9%	6.3%	5.0%	4.0%	3.2%	2.6%	2.1%	1.7%	1.3%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retro5Med	6.5%	7.5%	8.6%	10.0%	11.0%	11.2%	10.6%	9.1%	7.0%	4.7%	2.7%	1.3%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retro1Slow	0.9%	1.5%	2.2%	3.2%	4.4%	5.7%	7.0%	8.3%	9.3%	9.9%	9.9%	9.4%	8.2%	6.8%	5.2%	3.6%	2.3%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retro50Fast	14.0%	9.0%	6.0%	3.0%	1.3%	0.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retro20Fast	10.7%	8.4%	7.3%	6.3%	5.4%	4.6%	3.9%	3.3%	2.7%	2.1%	1.7%	1.3%	1.0%	0.9%	0.7%	0.6%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RetroEven20	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retro3Slow	1.7%	3.0%	4.7%	6.6%	8.4%	9.8%	10.6%	10.6%	9.9%	8.7%	7.1%	5.5%	4.1%	2.9%	1.9%	1.2%	0.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RetroMed_Avg	4.1%	5.3%	6.6%	8.3%	9.7%	10.5%	10.6%	9.8%	8.5%	6.7%	4.9%	3.4%	2.3%	1.5%	1.0%	0.6%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Ramp Rates from the NWPCC's 8th Plan





Residential DSM Forecast Highlights

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	123	113	103	91	76
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.632	3.123	6.166	10.060
Achievable Economic UCT Potential	0.490	0.988	4.859	9.562	15.671
Achievable Technical Potential	0.565	1.135	5.626	11.158	17.691
Technical Potential	3.079	5.712	19.087	29.633	39.240
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.6%	3.0%	6.7%	13.3%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	10.5%	20.7%
Achievable Technical Potential	0.5%	1.0%	5.5%	12.2%	23.4%
Technical Potential	2.5%	5.1%	18.5%	32.4%	51.9%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.341	0.616	0.649	0.249
Achievable Economic UCT Potential	0.490	0.535	0.952	1.030	0.388
Achievable Technical Potential	0.810	0.888	1.562	1.736	0.947
Technical Potential	3.079	2.857	2.719	2.262	0.977

Commercial DSM Forecast Highlights

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	87	80	69	58	45
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.323	0.679	3.249	5.027	5.578
Achievable Economic UCT Potential	0.361	0.733	3.219	5.005	5.747
Achievable Technical Potential	1.066	2.071	6.934	9.392	9.789
Technical Potential	1.461	2.814	9.534	12.823	13.744
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.4%	0.9%	4.7%	8.7%	12.3%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	8.6%	12.7%
Achievable Technical Potential	1.2%	2.6%	10.0%	16.2%	21.6%
Technical Potential	1.7%	3.5%	13.8%	22.1%	30.3%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.323	0.381	0.581	0.353	0.173
Achievable Economic UCT Potential	0.361	0.401	0.555	0.373	0.184
Achievable Technical Potential	1.144	1.160	1.141	0.674	0.291
Technical Potential	1.461	1.459	1.349	0.772	0.348

Industrial DSM Forecast Highlights

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	21	21	25	26	27
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.142	0.669	1.138	1.520
Achievable Economic UCT Potential	0.069	0.141	0.663	1.128	1.523
Achievable Technical Potential	0.077	0.157	0.734	1.241	1.658
Technical Potential	0.094	0.191	0.903	1.495	1.963
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.7%	2.7%	4.4%	5.5%
Achievable Economic UCT Potential	0.3%	0.7%	2.7%	4.4%	5.5%
Achievable Technical Potential	0.4%	0.8%	3.0%	4.8%	6.0%
Technical Potential	0.5%	0.9%	3.7%	5.8%	7.1%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.074	0.118	0.089	0.021
Achievable Economic UCT Potential	0.069	0.073	0.115	0.088	0.023
Achievable Technical Potential	0.077	0.082	0.128	0.098	0.024
Technical Potential	0.094	0.099	0.153	0.115	0.030

Scenario Comparison

Scenario	Group	Sector	Sum of 2025	Sum of 2030	Sum of 2035	Sum of 2040	Sum of 2045
2023 Original	**Regular Income**	Residential	341.4	1,863.5	4,264.8	6,520.1	8,036.8
	Moderate Income	Residential	595.2	2,784.3	5,248.5	7,137.4	7,962.4
	Low Income	Residential	33.2	193.6	457.5	688.8	826.5
	Commercial	Commercial	670.3	3,128.5	5,099.4	5,979.6	6,128.6
	Industrial	Industrial	142.1	614.2	1,057.7	1,326.2	1,429.9
2023 Original Total			**1,782.2**	**8,584.1**	**16,127.9**	**21,652.0**	**24,384.3**
Reference - 2025 IRP	**Regular Income**	Residential	347.5	1,863.1	4,071.9	6,122.2	7,425.5
	Moderate Income	Residential	592.1	2,736.1	4,924.3	6,623.0	7,264.2
	Low Income	Residential	48.5	259.3	565.4	831.9	981.1
	Commercial	Commercial	733.0	3,219.1	5,005.3	5,728.6	5,747.3
	Industrial	Industrial	141.3	663.1	1,127.8	1,409.9	1,523.4
Reference - 2025 IRP Total			**1,862.4**	**8,740.8**	**15,694.8**	**20,715.6**	**22,941.6**
Low Growth	**Regular Income**	Residential	346.3	1,833.6	3,987.9	5,968.7	7,196.6
	Moderate Income	Residential	589.5	2,690.8	4,824.1	6,459.6	7,054.0
	Low Income	Residential	48.3	255.6	554.4	811.8	951.6
	Commercial	Commercial	734.6	3,259.2	5,057.3	5,753.5	5,748.6
	Industrial	Industrial	141.5	600.6	1,011.0	1,253.3	1,341.2
Low Growth Total			**1,860.2**	**8,639.9**	**15,434.6**	**20,246.9**	**22,291.9**
High Growth	**Regular Income**	Residential	347.5	1,895.0	4,183.0	6,337.4	7,761.7
	Moderate Income	Residential	592.1	2,781.2	5,049.1	6,842.0	7,573.7
	Low Income	Residential	48.5	263.4	580.2	860.5	1,025.0
	Commercial	Commercial	734.5	3,303.7	5,184.0	5,961.8	6,018.8
	Industrial	Industrial	141.3	663.1	1,127.8	1,409.9	1,523.4
High Growth Total			**1,864.0**	**8,906.4**	**16,124.2**	**21,411.5**	**23,902.7**

Residential High Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	123	113	104	94	81
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.632	3.165	6.294	10.438
Achievable Economic UCT Potential	0.490	0.988	4.940	9.812	16.360
Achievable Technical Potential	0.565	1.136	5.714	11.435	18.445
Technical Potential	3.080	5.713	19.320	30.192	40.423
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.6%	3.0%	6.7%	12.8%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	10.4%	20.1%
Achievable Technical Potential	0.5%	1.0%	5.5%	12.2%	22.7%
Technical Potential	2.5%	5.1%	18.5%	32.1%	49.7%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.341	0.630	0.669	0.278
Achievable Economic UCT Potential	0.490	0.535	0.978	1.070	0.436
Achievable Technical Potential	0.810	0.888	1.595	1.787	1.005
Technical Potential	3.080	2.857	2.786	2.330	1.023

Residential Low Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	123	113	102	89	72
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.629	3.082	6.070	9.809
Achievable Economic UCT Potential	0.490	0.984	4.780	9.366	15.202
Achievable Technical Potential	0.565	1.131	5.540	10.941	17.176
Technical Potential	3.080	5.689	18.827	29.149	38.454
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.6%	3.0%	6.8%	13.7%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	10.5%	21.2%
Achievable Technical Potential	0.5%	1.0%	5.4%	12.3%	24.0%
Technical Potential	2.5%	5.0%	18.5%	32.7%	53.7%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.317	0.339	0.607	0.636	0.234
Achievable Economic UCT Potential	0.490	0.531	0.933	1.003	0.360
Achievable Technical Potential	0.810	0.883	1.539	1.701	0.912
Technical Potential	3.080	2.833	2.671	2.214	0.959

Commercial High Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	87	80	70	60	49
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.324	0.680	3.332	5.201	5.843
Achievable Economic UCT Potential	0.361	0.735	3.304	5.184	6.019
Achievable Technical Potential	1.069	2.079	7.140	9.861	10.455
Technical Potential	1.465	2.823	9.781	13.375	14.520
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.4%	0.9%	4.8%	8.6%	12.0%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	8.6%	12.3%
Achievable Technical Potential	1.2%	2.6%	10.2%	16.3%	21.4%
Technical Potential	1.7%	3.5%	13.9%	22.1%	29.7%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.324	0.382	0.603	0.363	0.191
Achievable Economic UCT Potential	0.361	0.402	0.577	0.383	0.202
Achievable Technical Potential	1.148	1.164	1.171	0.689	0.310
Technical Potential	1.465	1.463	1.386	0.790	0.370

Commercial Low Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	87	80	69	59	46
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.324	0.680	3.288	5.075	5.574
Achievable Economic UCT Potential	0.361	0.735	3.259	5.057	5.749
Achievable Technical Potential	1.069	2.079	7.094	9.728	10.175
Technical Potential	1.465	2.823	9.704	13.194	14.194
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.4%	0.9%	4.7%	8.6%	12.2%
Achievable Economic UCT Potential	0.4%	0.9%	4.7%	8.6%	12.6%
Achievable Technical Potential	1.2%	2.6%	10.2%	16.5%	22.3%
Technical Potential	1.7%	3.5%	14.0%	22.4%	31.1%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.324	0.382	0.588	0.346	0.163
Achievable Economic UCT Potential	0.361	0.402	0.562	0.366	0.174
Achievable Technical Potential	1.148	1.164	1.156	0.671	0.281
Technical Potential	1.465	1.463	1.365	0.768	0.336

Industrial High Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	21	21	25	26	27
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.142	0.669	1.138	1.520
Achievable Economic UCT Potential	0.069	0.141	0.663	1.128	1.523
Achievable Technical Potential	0.077	0.157	0.734	1.241	1.658
Technical Potential	0.094	0.191	0.903	1.495	1.963
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.7%	2.7%	4.4%	5.5%
Achievable Economic UCT Potential	0.3%	0.7%	2.7%	4.4%	5.5%
Achievable Technical Potential	0.4%	0.8%	3.0%	4.8%	6.0%
Technical Potential	0.5%	0.9%	3.7%	5.8%	7.1%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.074	0.118	0.089	0.021
Achievable Economic UCT Potential	0.069	0.073	0.115	0.088	0.023
Achievable Technical Potential	0.077	0.082	0.128	0.098	0.024
Technical Potential	0.094	0.099	0.153	0.115	0.030

Industrial Low Growth Scenario

Summary of Energy Savings (MM therms), Selected Years	2024	2025	2030	2035	2045
Baseline Forecast (MMtherms)	21	21	22	23	23
Cumulative Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.142	0.609	1.022	1.339
Achievable Economic UCT Potential	0.069	0.141	0.601	1.011	1.341
Achievable Technical Potential	0.077	0.157	0.666	1.112	1.458
Technical Potential	0.094	0.191	0.804	1.328	1.715
Energy Savings (% of Baseline)					
Achievable Economic TRC Potential	0.3%	0.7%	2.8%	4.5%	5.7%
Achievable Economic UCT Potential	0.3%	0.7%	2.7%	4.4%	5.7%
Achievable Technical Potential	0.4%	0.8%	3.0%	4.9%	6.2%
Technical Potential	0.5%	0.9%	3.7%	5.8%	7.3%
Incremental Savings (MMtherms)					
Achievable Economic TRC Potential	0.069	0.074	0.105	0.080	0.019
Achievable Economic UCT Potential	0.069	0.073	0.102	0.079	0.020
Achievable Technical Potential	0.077	0.082	0.114	0.088	0.021
Technical Potential	0.094	0.099	0.136	0.104	0.025

Key	State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Measure Identifier	Baseline Definition	Efficient Definition
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE1	AFUE 80%	AFUE 98%
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE2	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE3	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE4	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE5	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE6	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE7	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ1 - Single Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE8	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE9	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE10	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ1 - Single Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE11	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE12	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE13	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ1 - Single Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE14	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ1 - Single Family	New	Appliances	Natural Gas	Stove/Oven	A	RE15	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ1 - Single Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE16	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE17	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE18	AFUE 82%	AFUE 85%
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE19	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE20	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE21	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE22	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE23	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ1 - Multi Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE24	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE25	AFUE 80%	AFUE 92%
Regular I	Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE26	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ1 - Multi Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE27	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE28	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE29	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ1 - Multi Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE30	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ1 - Multi Family	New	Appliances	Natural Gas	Stove/Oven	A	RE31	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ1 - Multi Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE32	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE33	AFUE 80%	AFUE 98%
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE34	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE35	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE36	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE37	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE38	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE39	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ2 - Single Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE40	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE41	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE42	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ2 - Single Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE43	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE44	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE45	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ2 - Single Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE46	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ2 - Single Family	New	Appliances	Natural Gas	Stove/Oven	A	RE47	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ2 - Single Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE48	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE49	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE50	AFUE 82%	AFUE 85%
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE51	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE52	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE53	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE54	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE55	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ2 - Multi Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE56	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ2 - Multi Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE57	AFUE 80%	AFUE 92%
Regular I	Regula	Residential	CZ2 - Multi Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE58	AFUE 82%	AFUE 85%
Regular I	Regula	Residential	CZ2 - Multi Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE59	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ2 - Multi Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE60	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ2 - Multi Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE61	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ2 - Multi Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE62	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ2 - Multi Family	New	Appliances	Natural Gas	Stove/Oven	A	RE63	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ2 - Multi Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE64	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE65	AFUE 80%	AFUE 98%
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE66	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE67	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE68	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE69	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE70	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE71	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ3 - Single Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE72	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ3 - Single Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE73	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ3 - Single Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE74	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ3 - Single Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE75	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ3 - Single Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE76	Baseline (UEF 0.58)	UEF 0.91 (Instantaneous Condensing)
Regular I	Regula	Residential	CZ3 - Single Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE77	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ3 - Single Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE78	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ3 - Single Family	New	Appliances	Natural Gas	Stove/Oven	A	RE79	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ3 - Single Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE80	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE81	AFUE 80%	AFUE 95%
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE82	AFUE 82%	AFUE 85%
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Secondary Heating	Natural Gas	Fireplace	A	RE83	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE84	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE85	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Appliances	Natural Gas	Clothes Dryer	A	RE86	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Appliances	Natural Gas	Stove/Oven	A	RE87	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ3 - Multi Family	Existing	Miscellaneous	Natural Gas	Pool Heater	A	RE88	Standard (EF 0.82)	High Efficiency (EF 0.84)
Regular I	Regula	Residential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Furnace - Direct Fuel	A	RE89	AFUE 80%	AFUE 92%
Regular I	Regula	Residential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Boiler - Direct Fuel	A	RE90	AFUE 82%	AFUE 95%
Regular I	Regula	Residential	CZ3 - Multi Family	New	Secondary Heating	Natural Gas	Fireplace	A	RE91	Baseline (50% to 60% FE Rating)	Tier 1 (70% FE Rating)
Regular I	Regula	Residential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater <= 55 gal.	A	RE92	Baseline (UEF 0.58)	UEF 0.81
Regular I	Regula	Residential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater > 55 gal.	A	RE93	Standard (UEF 0.76)	ENERGY STAR (3.2) - UEF 0.78
Regular I	Regula	Residential	CZ3 - Multi Family	New	Appliances	Natural Gas	Clothes Dryer	A	RE94	Standard	NEEA/ENERGY STAR (CE >60%)
Regular I	Regula	Residential	CZ3 - Multi Family	New	Appliances	Natural Gas	Stove/Oven	A	RE95	EF 0.399	High Efficiency (730 + 1660 IAEC)
Regular I	Regula	Residential	CZ3 - Multi Family	New	Miscellaneous	Natural Gas	Pool Heater	A	RE96	Standard (EF 0.82)	High Efficiency (EF 0.84)

Measure Identifier	Measure Life (Years)	Unit Energy Savings (Annual kWh or therm)	Unit Summer Peak Savings (kW or n/a)	Unit Winter Peak Savings (kW or n/a)	Unit Incremental Cost (2019$)	Non-Energy Impacts (2019$)	Incr. O&M (2019$)	RVT-Only NEIs (2019$)	Incentive (2019$)	Admin Cost (2019$)	Unit of Measure	Base Saturation	Applicability	Discretionary/Lost Opportunity	Ramp Rate Name	20 Year Technical Achievable %	Assigned Loadshape	T&D Losses
RE1	21.5	118.50	0.00	0.00	$3,045.24	$9.97	$0.00	$0.00	$788.17	$472.90	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE2	25	130.52	0.00	0.00	$2,090.52	$14.20	$0.00	$0.00	$627.74	$376.64	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE3	20	27.25	0.00	0.00	$256.39	$0.79	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE4	13	64.58	0.00	0.00	$2,447.45	$0.00	$0.00	$0.00	$320.39	$192.24	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE5	13	4.70	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE6	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE7	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE8	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE9	21.5	65.80	0.00	0.00	$1,545.47	$8.62	$0.00	$0.00	$400.00	$240.00	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE10	25	0.00	0.00	0.00	$2,090.52	$28.05	$0.00	$0.00	$627.74	$376.64	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE11	20	27.25	0.00	0.00	$256.39	$0.79	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE12	13	64.58	0.00	0.00	$2,447.45	$0.00	$0.00	$0.00	$320.39	$192.24	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE13	13	4.70	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE14	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE15	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE16	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE17	21.5	71.08	0.00	0.00	$1,545.47	$8.71	$0.00	$0.00	$666.67	$400.00	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE18	25	19.15	0.00	0.00	$842.94	$2.11	$0.00	$0.00	$337.49	$202.49	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE19	20	14.56	0.00	0.00	$256.39	$0.42	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE20	13	31.55	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE21	13	2.93	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE22	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE23	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE24	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE25	21.5	37.35	0.00	0.00	$97.54	$7.78	$0.00	$0.00	$42.08	$25.25	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE26	25	0.00	0.00	0.00	$2,090.52	$8.48	$0.00	$0.00	$836.98	$502.19	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE27	20	14.56	0.00	0.00	$256.39	$0.42	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE28	13	31.55	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE29	13	2.93	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE30	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE31	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE32	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE33	21.5	119.58	0.00	0.00	$3,045.24	$9.20	$0.00	$0.00	$788.17	$472.90	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE34	25	129.45	0.00	0.00	$2,090.52	$11.14	$0.00	$0.00	$627.74	$376.64	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE35	20	27.25	0.00	0.00	$256.39	$0.62	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE36	13	64.22	0.00	0.00	$1,882.25	$0.00	$0.00	$0.00	$246.40	$147.84	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE37	13	4.68	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE38	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE39	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE40	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE41	21.5	63.50	0.00	0.00	$1,545.47	$8.07	$0.00	$0.00	$400.00	$240.00	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE42	25	0.00	0.00	0.00	$2,090.52	$21.12	$0.00	$0.00	$627.74	$376.64	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE43	20	27.25	0.00	0.00	$256.39	$0.62	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE44	13	64.22	0.00	0.00	$1,882.25	$0.00	$0.00	$0.00	$246.40	$147.84	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE45	13	4.68	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE46	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE47	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE48	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE49	21.5	66.72	0.00	0.00	$1,545.47	$8.07	$0.00	$0.00	$666.67	$400.00	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE50	25	17.71	0.00	0.00	$842.94	$1.54	$0.00	$0.00	$337.49	$202.49	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE51	20	14.56	0.00	0.00	$256.39	$0.33	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE52	13	31.42	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE53	13	2.92	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE54	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE55	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE56	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE57	21.5	31.57	0.00	0.00	$97.54	$7.27	$0.00	$0.00	$42.08	$25.25	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE58	25	0.00	0.00	0.00	$842.94	$0.95	$0.00	$0.00	$337.49	$202.49	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE59	20	14.56	0.00	0.00	$256.39	$0.33	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE60	13	31.42	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE61	13	2.92	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE62	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE63	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE64	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE65	21.5	104.87	0.00	0.00	$3,045.24	$8.85	$0.00	$0.00	$788.17	$472.90	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE66	25	115.39	0.00	0.00	$2,090.52	$9.93	$0.00	$0.00	$627.74	$376.64	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE67	20	27.25	0.00	0.00	$256.39	$0.62	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE68	13	63.68	0.00	0.00	$1,882.25	$0.00	$0.00	$0.00	$246.40	$147.84	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE69	13	4.64	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE70	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE71	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE72	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE73	21.5	58.42	0.00	0.00	$1,545.47	$7.93	$0.00	$0.00	$400.00	$240.00	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE74	25	0.00	0.00	0.00	$2,090.52	$19.87	$0.00	$0.00	$627.74	$376.64	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE75	20	27.25	0.00	0.00	$256.39	$0.62	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE76	13	63.68	0.00	0.00	$1,882.25	$0.00	$0.00	$0.00	$246.40	$147.84	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE77	13	4.64	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE78	12	1.07	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE79	12	7.37	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE80	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE81	21.5	70.62	0.00	0.00	$1,545.47	$8.18	$0.00	$0.00	$666.67	$400.00	kBTU/hr	83.6%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE82	25	19.03	0.00	0.00	$842.94	$1.66	$0.00	$0.00	$337.49	$202.49	kBTU/hr	2.8%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE83	20	14.56	0.00	0.00	$256.39	$0.33	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE84	13	31.19	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	72.3%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE85	13	2.90	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	2.1%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE86	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE87	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE88	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE89	21.5	38.11	0.00	0.00	$97.54	$7.48	$0.00	$0.00	$42.08	$25.25	kBTU/hr	41.5%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE90	25	0.00	0.00	0.00	$2,090.52	$6.37	$0.00	$0.00	$836.98	$502.19	kBTU/hr	0.0%	100.0%	Lost Opportunity	LO12Med	84.7%	N/A	0.2%
RE91	20	14.56	0.00	0.00	$256.39	$0.33	$0.00	$0.00	$100.00	$60.00	unit	34.9%	100.0%	Lost Opportunity	LO5Med	85.0%	N/A	0.2%
RE92	13	31.19	0.00	0.00	$883.15	$0.00	$0.00	$0.00	$115.61	$69.37	unit	14.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE93	13	2.90	0.00	0.00	-$29.09	$0.00	$0.00	$0.00	-$3.31	-$1.99	unit	0.4%	100.0%	Lost Opportunity	LOEven20	85.0%	N/A	0.2%
RE94	12	0.73	0.00	0.00	$49.55	$0.00	$0.00	$0.00	$4.95	$2.97	units	14.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE95	12	7.13	0.00	0.00	$50.75	$0.00	$0.00	$0.00	$14.21	$8.53	units	31.8%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%
RE96	10	3.74	0.00	0.00	$608.84	$0.00	$0.00	$0.00	$73.06	$43.84	units	0.4%	100.0%	Lost Opportunity	LO5Med	60.0%	N/A	0.2%

Measure Identifier	TRC LCOE ($/kWh or $/therm)	TRC LCOE Bundle	UCT LCOE ($/kWh or $/therm)	UCT LCOE Bundle	Cumulative Achievable Technical Potential in 2021 (MWh or mTherms)	Lifetime Source	Costs Source	Savings Source
RE1	$4,237.75		$1,363.06		25.91	EIA 2018 Tech Forecast	CNGC Data	BEST
RE2	$1,267.58		$449.05		0.12	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE3	$774.43		$379.58		1.0	CNGC Prior Study Databa	CNGC Data	Calculated
RE4	$2,655.75		$527.42		9.39	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE5	-$353.56		-$11.27		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE6	$1,780.64		$274.01		0.01	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE7	$640.85		$257.61		0.1	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE8	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE9	$5,987.81		$1,932.23		3.4	EIA 2018 Tech Forecast	CNGC Data	BEST
RE10	$826.95		$34.52		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE11	$774.43		$379.58		0.38	CNGC Prior Study Databa	CNGC Data	Calculated
RE12	$2,655.75		$527.42		0.59	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE13	-$353.56		-$11.27		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE14	$1,780.64		$274.01		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE15	$640.85		$257.61		0.02	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE16	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE17	$6,008.67		$2,971.89		3.33	EIA 2018 Tech Forecast	CNGC Data	BEST
RE18	$3,192.98		$1,514.49		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE19	$1,343.37		$669.92		0.1	CNGC Prior Study Databa	CNGC Data	Calculated
RE20	$2,646.75		$525.63		1.22	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE21	-$479.93		-$15.30		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE22	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE23	$658.07		$264.53		0.02	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE24	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE25	$8,349.55		$4,130.45		0.4	EIA 2018 Tech Forecast	CNGC Data	BEST
RE26	$316.94		$46.03		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE27	$1,343.37		$669.92		0.04	CNGC Prior Study Databa	CNGC Data	Calculated
RE28	$2,646.75		$525.63		0.1	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE29	-$479.93		-$15.30		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE30	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE31	$658.07		$264.53		0.01	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE32	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE33	$4,189.73		$1,355.67		13.06	EIA 2018 Tech Forecast	CNGC Data	BEST
RE34	$1,253.14		$452.70		0.04	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE35	$768.46		$379.58		0.47	CNGC Prior Study Databa	CNGC Data	Calculated
RE36	$2,560.22		$508.45		4.52	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE37	-$354.94		-$11.31		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE38	$1,780.64		$274.01		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE39	$640.85		$257.61		0.05	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE40	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE41	$6,081.95		$1,971.91		0.89	EIA 2018 Tech Forecast	CNGC Data	BEST
RE42	$644.61		$34.52		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE43	$768.46		$379.58		0.1	CNGC Prior Study Databa	CNGC Data	Calculated
RE44	$2,560.22		$508.45		0.15	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE45	-$354.94		-$11.31		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE46	$1,780.64		$274.01		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE47	$640.85		$257.61		0.01	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE48	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE49	$6,332.59		$3,148.11		0.49	EIA 2018 Tech Forecast	CNGC Data	BEST
RE50	$3,395.74		$1,625.11		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE51	$1,337.74		$669.92		0.01	CNGC Prior Study Databa	CNGC Data	Calculated
RE52	$2,656.91		$527.65		0.2	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE53	-$481.09		-$15.34		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE54	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE55	$658.07		$264.53		0.01	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE56	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE57	$9,582.47		$4,762.07		0.03	EIA 2018 Tech Forecast	CNGC Data	BEST
RE58	$118.77		$46.03		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE59	$1,337.74		$669.92		0.0	CNGC Prior Study Databa	CNGC Data	Calculated
RE60	$2,656.91		$527.65		0.01	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE61	-$481.09		-$15.34		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE62	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE63	$658.07		$264.53		0.0	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE64	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE65	$4,708.51		$1,527.81		21.6	EIA 2018 Tech Forecast	CNGC Data	BEST
RE66	$1,392.29		$506.91		0.02	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE67	$768.46		$379.58		0.79	CNGC Prior Study Databa	CNGC Data	Calculated
RE68	$2,508.55		$498.19		6.93	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE69	-$357.02		-$11.38		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE70	$1,780.64		$274.01		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE71	$640.85		$257.61		0.06	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE72	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE73	$6,513.14		$2,114.27		6.96	EIA 2018 Tech Forecast	CNGC Data	BEST
RE74	$611.71		$34.52		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE75	$768.46		$379.58		0.74	CNGC Prior Study Databa	CNGC Data	Calculated
RE76	$2,508.55		$498.19		1.07	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE77	-$357.02		-$11.38		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE78	$1,780.64		$274.01		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE79	$640.85		$257.61		0.03	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE80	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE81	$6,017.76		$2,989.02		1.7	EIA 2018 Tech Forecast	CNGC Data	BEST
RE82	$3,187.93		$1,522.88		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE83	$1,337.74		$669.92		0.03	CNGC Prior Study Databa	CNGC Data	Calculated
RE84	$2,675.61		$531.36		0.48	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE85	-$483.22		-$15.40		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE86	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE87	$658.07		$264.53		0.01	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE88	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F
RE89	$8,183.46		$4,059.08		0.47	EIA 2018 Tech Forecast	CNGC Data	BEST
RE90	$261.41		$46.03		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	BEST
RE91	$1,337.74		$669.92		0.03	CNGC Prior Study Databa	CNGC Data	Calculated
RE92	$2,675.61		$531.36		0.09	EIA 2018 Tech Forecast	CNGC Program Data	IL TRM - 5.4.2 - RS-HWE-
RE93	-$483.22		-$15.40		0.0	Scaled from small	Scaled from small	IL TRM - 5.4.2 - RS-HWE-
RE94	$2,001.10		$307.94		0.0	RTF Workbook - ResClot	RTF Workbook - ResClot	RTF Workbook - ResClot
RE95	$658.07		$264.53		0.01	EIA 2018 Appendix A	EIA 2018 Appendix A	EIA 2018 Appendix A
RE96	$12,909.35		$2,405.81		0.0	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F	CA eTRM - Pool Heater, F

State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Measure Identifier	Baseline Definition	Efficient Definition
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM1	R-0	R-38 (Retro only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM2	R11+, up to R40	R-49
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM3	R-0	R-11 (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM4	R-0	R-15
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	RRM5	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM6	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM7	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM8	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM9	R-0	R-30
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM10	R-11+, up to R-20	R-21
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM11	R-0	R-11
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM12	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM13	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM14	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM15	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM16	R-2.5 door	R-5 door
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Windows - U-30	A	RRM17	Existing inefficient Window	Double Pane LowE U30
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Windows - U-22 or better	A	RRM18	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM19	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM20	Manual/no control	Programmed thermostat
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM21	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM22	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM23	No reset controls	Reset control installed
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM24	Degraded system	Cleaned and restored
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM25	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM26	No insulation	Pipe insulated throughout home
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM27	None	Drain equipped with heat recovery system
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM28	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM29	3.5 GPM showerhead	2.0 GPM showerhead
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM30	3.5 GPM showerhead	1.5 GPM showerhead
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM31	135° F set point	Setback to 120° F
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM32	No control	Restrictor installed, shutting off water when it is warm
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM33	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM34	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Single Family	Existing	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM35	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM36	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM37	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM38	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM39	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Built Green homes	A	RRM40	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Built Green homes	A	RRM41	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM42	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM43	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM44	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM45	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM46	R-0	R-38 (Retro only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM47	R11+, up to R40	R-49
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM48	R-0	R-11 (NC Only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM49	R-0	R-15
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Ducting	A	RRM50	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM51	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM52	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM53	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM54	R-0	R-30
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM55	R-11+, up to R-20	R-21
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM56	R-0	R-11
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM57	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM58	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM59	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM60	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM61	R-2.5 door	R-5 door
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Windows - U-30	A	RRM62	Existing inefficient Window	Double Pane LowE U30
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Windows - U-22 or better	A	RRM63	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM64	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM65	Manual/no control	Programmed thermostat
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM66	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM67	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM68	No reset controls	Reset control installed
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM69	Degraded system	Cleaned and restored
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM70	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM71	No insulation	Pipe insulated throughout home
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM72	None	Drain equipped with heat recovery system
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM73	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM74	3.5 GPM showerhead	2.0 GPM showerhead
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM75	3.5 GPM showerhead	1.5 GPM showerhead
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM76	135° F set point	Setback to 120° F
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM77	No control	Restrictor installed, shutting off water when it is warm
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM78	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM79	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Single Family	New	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM80	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM81	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM82	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM83	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM84	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Built Green homes	A	RRM85	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Built Green homes	A	RRM86	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM87	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM88	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM89	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Single Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM90	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM91	R-0	R-38 (Retro only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM92	R11+, up to R40	R-49
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM93	R-0	R-11 (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM94	R-0	R-15
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	RRM95	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM96	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM97	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM98	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM99	R-0	R-30
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM100	R-11+, up to R-20	R-21
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM101	R-0	R-11
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM102	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM103	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM104	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM105	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM106	R-2.5 door	R-5 door
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Windows - U-30	A	RRM107	Existing inefficient Window	Double Pane LowE U30
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Windows - U-22 or better	A	RRM108	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM109	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM110	Manual/no control	Programmed thermostat
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM111	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM112	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM113	No reset controls	Reset control installed
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM114	Degraded system	Cleaned and restored
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM115	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM116	No insulation	Pipe insulated throughout home
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM117	None	Drain equipped with heat recovery system
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM118	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM119	3.5 GPM showerhead	2.0 GPM showerhead
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM120	3.5 GPM showerhead	1.5 GPM showerhead
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM121	135° F set point	Setback to 120° F
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM122	No control	Restrictor installed, shutting off water when it is warm
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM123	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM124	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Multi Family	Existing	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM125	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM126	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM127	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM128	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM129	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Built Green homes	A	RRM130	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Built Green homes	A	RRM131	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM132	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM133	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM134	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM135	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM136	R-0	R-38 (Retro only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM137	R11+, up to R40	R-49
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM138	R-0	R-11 (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM139	R-0	R-15
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ducting	A	RRM140	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM141	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM142	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM143	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM144	R-0	R-30
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM145	R-11+, up to R-20	R-21
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM146	R-0	R-11
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM147	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM148	R-0	R-5 (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM149	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM150	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM151	R-2.5 door	R-5 door
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Windows - U-30	A	RRM152	Existing inefficient Window	Double Pane LowE U30
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Windows - U-22 or better	A	RRM153	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM154	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM155	Manual/no control	Programmed thermostat
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM156	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM157	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM158	No reset controls	Reset control installed
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM159	Degraded system	Cleaned and restored
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM160	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM161	No insulation	Pipe insulated throughout home
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM162	None	Drain equipped with heat recovery system
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM163	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM164	3.5 GPM showerhead	2.0 GPM showerhead
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM165	3.5 GPM showerhead	1.5 GPM showerhead
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM166	135° F set point	Setback to 120° F
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM167	No control	Restrictor installed, shutting off water when it is warm
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM168	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM169	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Multi Family	New	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM170	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM171	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM172	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM173	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM174	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Built Green homes	A	RRM175	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Built Green homes	A	RRM176	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM177	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM178	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM179	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ1 - Multi Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM180	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM181	R-0	R-38 (Retro only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM182	R11+, up to R40	R-49
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM183	R-0	R-11 (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM184	R-0	R-15
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	RRM185	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM186	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM187	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM188	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM189	R-0	R-30
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM190	R-11+, up to R-20	R-21
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM191	R-0	R-11
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM192	R-0	R-5 (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM193	R-0	R-5 (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM194	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM195	10% air leak to outside	50% reduction in duct leakage
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM196	R-2.5 door	R-5 door
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Windows - U-30	A	RRM197	Existing inefficient Window	Double Pane LowE U30
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Windows - U-22 or better	A	RRM198	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM199	Existing inefficient Window	Double Pane LowE C22
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM200	Manual/no control	Programmed thermostat
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM201	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM202	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM203	No reset controls	Reset control installed
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM204	Degraded system	Cleaned and restored
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM205	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM206	No insulation	Pipe insulated throughout home
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM207	None	Drain equipped with heat recovery system
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM208	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM209	3.5 GPM showerhead	2.0 GPM showerhead
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM210	3.5 GPM showerhead	1.5 GPM showerhead
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM211	135° F set point	Setback to 120° F
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM212	No control	Restrictor installed, shutting off water when it is warm
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM213	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM214	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula	Residential	CZ2 - Single Family	Existing	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM215	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM216	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM217	Minimum standard unit	ENERGY STAR unit
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM218	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM219	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Built Green homes	A	RRM220	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Built Green homes	A	RRM221	WA Building Code	Built Green spec (NC Only)
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM222	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM223	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ2 - Single Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM224	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ2 - Single Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM225	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM226	R-0	R-38 (Retro only)
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM227	R11+, up to R40	R-49
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM228	R-0	R-11 (NC Only)
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM229	R-0	R-15
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Ducting	A	RRM230	2°F duct loss	duct thermal losses reduced 50%
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM231	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM232	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM233	ACH50 >= 5	20% reduction in ACH50
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM234	R-0	R-30
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM235	R-11+, up to R-20	R-21
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM236	R-0	R-11
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM237	R-0	R-5 (NC Only)
Regula	Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM238	R-0	R-5 (NC Only)

Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Windows - U-.30	A	RRM242	Existing inefficient Window	Double Pane LowE U30
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Windows - U-.22 or better	A	RRM243	Existing inefficient Window	Double Pane LowE CL22
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM244	Existing inefficient Window	Double Pane LowE CL22
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM245	Manual/no control	Programmed thermostat
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM246	Manual/no control	Interactive/learning thermostat (ie, NEST)
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM247	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM248	No reset controls	Reset control installed
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM249	Degraded system	Cleaned and restored
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM250	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM251	No insulation	Pipe insulated throughout home
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM252	None	Drain equipped with heat recovery system
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM253	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM254	3.5 GPM showerhead	2.0 GPM showerhead
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM255	3.5 GPM showerhead	1.5 GPM showerhead
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM256	135° F set point	Setback to 120° F
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM257	No control	Restrictor installed, shutting off water when it is warm
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM258	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM259	Standard tank water heater, baseline	40 sq ft supplemental solar system installed
Regula Residential	CZ2 - Single Family	New	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM260	Standard baseline pool heater	40 sq ft supplemental solar system installed
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM261	Minimum standard unit	ENERGY STAR unit
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM262	Minimum standard unit	ENERGY STAR unit
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM263	WA Building Code	Built Green spec (NC Only)
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM264	WA Building Code	Built Green spec (NC Only)
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Built Green homes	A	RRM265	WA Building Code	Built Green spec (NC Only)
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Built Green homes	A	RRM266	WA Building Code	Built Green spec (NC Only)
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM267	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM268	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW
Regula Residential	CZ2 - Single Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM269	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula Residential	CZ2 - Single Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM270	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW
Regula Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM271	R-0	R-38 (Retro only)
Regula Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM272	R11+, up to R40	R-49
Regula Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM273	R-0	R-11 (NC Only)
Regula Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM274	R-0	R-15
Regula Residential	CZ2 - Multi Family	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	RRM275	2° F duct loss	duct thermal losses reduced 50%

RegulaResidential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM489	WA Building Code	Built Green spec (NC Only)	70	0.00	0.00	0.00	$1.28	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	LO5Med	85.0%	TBD	0.2%	$45.99	$0.00	0.0	ResMFEstarHomes2012	N/A	N/A
RegulaResidential	CZ3 - Multi Family	Existing	Space Heating	Natural Gas	Built Green homes	A	RRM490	WA Building Code	Built Green spec (NC Only)	70	0.00	0.00	0.00	$1.28	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	LO12Med	84.7%	TBD	0.2%	$45.99	$0.00	0.0	ResMFEstarHomes2012	N/A	N/A
RegulaResidential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	Built Green homes	A	RRM491	WA Building Code	Built Green spec (NC Only)	70	0.00	0.00	0.00	$1.28	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	LO12Med	84.7%	TBD	0.2%	$45.99	$0.00	0.0	ResMFEstarHomes2012	N/A	N/A
RegulaResidential	CZ3 - Multi Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM492	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW	21	43.34	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	1.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$4,917.32	$831.13	0.01	CNGC Program Data	CNGC Program Data	Calculated
RegulaResidential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM493	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW	21	37.50	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	1.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$4,917.32	$831.13	0.0	CNGC Program Data	CNGC Program Data	Calculated
RegulaResidential	CZ3 - Multi Family	Existing	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM494	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW	21	43.34	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	1.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$4,917.32	$831.13	0.01	CNGC Program Data	CNGC: 2018 COMBO Dat	Calculated
RegulaResidential	CZ3 - Multi Family	Existing	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM495	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW	21	37.50	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	1.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$4,917.32	$831.13	0.0	CNGC Program Data	CNGC: 2018 COMBO Dat	Calculated
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Installation	A	RRM496	R-0	R-38 (Retro only)	45	0.00	0.00	0.00	$1.09	$0.00	$0.00	$0.00	$1.00	sqft roof - mf	0.0%	0.0%	Retrofit	AEG_RetroWx_Linear	0.0%	TBD	0.2%	$100.34	$76.81	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ceiling, Upgrade	A	RRM497	R11+, up to R40	R-49	45	0.00	0.00	0.00	$0.87	$0.00	$0.00	$0.00	$1.00	sqft roof - mf	0.0%	0.0%	Retrofit	AEG_RetroWx_Linear	0.0%	TBD	0.2%	$112.55	$96.80	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	BEST
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Slab Foundation	A	RRM498	R-0	R-11 (NC Only)	70	0.00	0.00	0.00	$1.00	$0.00	$0.00	$0.00	$0.00	sqft floor	0.0%	0.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$45.99	$0.00	0.0	ResNewSFSlabInsulation	ResNewSFSlabInsulation	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Basement Sidewall	A	RRM499	R-0	R-15	70	0.00	0.00	0.00	$1.00	$0.00	$0.00	$0.00	$0.00	sqft floor	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$45.99	$0.00	0.0	ResNewSFSlabInsulation	ResNewSFSlabInsulation	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Ducting	A	RRM500	2° F duct loss	duct thermal losses reduced 50%	45	0.09	0.00	0.00	$2.46	$0.01	$0.00	$0.00	$0.50	linear duct ft	10.0%	10.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$129.68	$32.77	0.0	RTF Workbook - ResSFW:	RTF Workbook - ResSFW:	RTF Workbook - ResSFW:
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Infiltration Control (Air Sealing)	A	RRM501	ACH50 >= 5	20% reduction in ACH50	15	0.01	0.00	0.00	$0.71	$0.00	$0.00	$0.00	$0.08	sqft home	85.0%	84.5%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$140.12	$24.34	0.0	RTF Workbook - ResSFW:	RTF Workbook - ResSFW:	RTF Workbook - ResSFW:
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Building Shell - Liquid-Applied Weather-Resistive Barrier	A	RRM502	ACH50 >= 5	20% reduction in ACH50	15	0.01	0.00	0.00	$0.67	$0.00	$0.00	$0.00	$0.10	sqft home	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$140.22	$30.47	0.0	INF_CTRL_LIQ-WRB-HVA	INF_CTRL_LIQ-WRB-HVA	Georgia Power Company
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Building Shell - Whole-Home Aerosol Sealing	A	RRM503	ACH50 >= 5	20% reduction in ACH50	20	0.01	0.00	0.00	$0.51	$0.00	$0.00	$0.00	$0.10	sqft home	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$111.87	$30.77	0.0	MN TRM v3.1 - Multifam	MN TRM v3.1 - Multifam	Georgia Power Company
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Floor/Crawlspace	A	RRM504	R-0	R-30	45	0.01	0.00	0.00	$1.42	$0.00	$0.00	$0.00	$0.75	sqft floor	72.2%	67.2%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$127.51	$69.61	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResSFW:
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Upgrade	A	RRM505	R-11+, up to R-20	R-21	45	0.00	0.00	0.00	$3.22	$0.00	$0.00	$0.00	$0.75	sqft wall	100.0%	93.7%	Retrofit	AEG_RetroWx_Linear	0.0%	TBD	0.2%	$65.35	$19.52	0.0	NWPCC 7th Plan: Res-MF	NREL National Residentia	BEST
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Cavity, Installation	A	RRM506	R-0	R-11	45	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft wall	0.0%	0.0%	Retrofit	AEG_RetroWx_Linear	0.0%	TBD	0.2%	$75.55	$36.23	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResSFW:
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - Wall Sheathing	A	RRM507	R-0	R-5 (NC Only)	45	0.02	0.00	0.00	$1.32	$0.00	$0.00	$0.00	$0.75	sqft wall	65.0%	85.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$127.36	$72.77	0.0	ResMFWeatherization_v	NREL National Residentia	BEST
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Insulation - External Wall Sheathing - Insulated Vinyl Siding	A	RRM508	R-0	R-5 (NC Only)	25	0.01	0.00	0.00	$2.60	$0.00	$0.00	$0.00	$0.72	sqft home	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$180.71	$65.80	0.0	INS_WLS_SIDING-HVAC-A	INS_WLS_SIDING-HVAC-E	INS_WLS_SIDING-HVAC-E
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing	A	RRM509	10% air leak to outside	50% reduction in duct leakage	20	22.60	0.00	0.00	$793.95	$3.37	$0.00	$0.00	$150.00	household	0.0%	0.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$2,785.81	$720.73	0.0	RTF Workbook - ResSFDu	CNGC 2019 Program Rep	RTF Workbook - ResSFDu
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Ducting - Repair and Sealing - Aerosol	A	RRM510	10% air leak to outside	50% reduction in duct leakage	10	0.02	0.00	0.00	$0.44	$0.00	$0.00	$0.00	$0.12	sqft home	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$183.35	$73.64	0.0	DCT_RPR_AERO-HVAC-E	DCT_RPR_AERO-HVAC-D	DCT_RPR_AERO-HVAC-D
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Doors - Storm and Thermal	A	RRM511	R-2.5 door	R-5 door	45	0.13	0.00	0.00	$19.53	$0.02	$0.00	$0.00	$2.38	sqft door	60.0%	100.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$515.49	$86.54	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResMFW
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Windows - U-.30	A	RRM512	Existing inefficient Window	Double Pane LowE U30	45	0.16	0.00	0.00	$25.85	$0.02	$0.00	$0.00	$2.00	sqft window	44.6%	50.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$630.78	$69.90	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResMFW
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Windows - U-.22 or better	A	RRM513	Existing inefficient Window	Double Pane LowE CL22	45	0.19	0.00	0.00	$29.94	$0.03	$0.00	$0.00	$2.25	sqft window	44.6%	48.1%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$711.27	$76.65	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResMFW
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Windows - Low-e Storm Addition	A	RRM514	Existing inefficient Window	Double Pane LowE CL22	20	0.62	0.00	0.00	$10.89	$0.09	$0.00	$0.00	$2.18	windows	0.0%	0.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$431.01	$113.33	0.0	RTF Workbook - ResMFW	RTF Workbook - ResMFW	RTF Workbook - ResMFW
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Thermostat - Programmable	A	RRM515	Manual/no control	Programmed thermostat	15	9.42	0.00	0.00	$64.34	$1.41	$0.00	$0.00	$25.00	household	0.0%	0.0%	Retrofit	AEG_RetroTstat_Linear	0.0%	TBD	0.2%	$765.50	$328.52	0.0	RTF Workbook - ResElect	RTF Workbook - ResElect	RTF Workbook - ResElect
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	RRM516	Manual/no control	Interactive/learning thermostat (ie, NEST)	5	11.30	0.00	0.00	$264.41	$1.69	$0.00	$0.00	$25.00	household	5.0%	75.0%	Retrofit	AEG_RetroTstat_Linear	0.0%	TBD	0.2%	$4,822.57	$703.89	0.02	RTF Workbook - ResConn	CNGC Program Data	RTF Workbook - ResConn
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	RRM517	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE	2	0.00	0.00	0.00	$154.16	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$621.42	$0.00	0.0	WI TRM - Furnace Tune-U	WI TRM - Furnace Tune-U	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	RRM518	No reset controls	Reset control installed	16	7.87	0.00	0.00	$654.15	$0.00	$0.00	$0.00	$32.71	household	10.0%	100.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$100.07	$7.86	0.0	IL TRM - 5.3.14 - RS-HVC-	IL TRM - 5.3.14 - RS-HVC-	IL TRM - 5.3.14 - RS-HVC-
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Steam Trap Maintenance	A	RRM519	Degraded system	Cleaned and restored	6	0.00	0.00	0.00	$77.00	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$221.68	$0.00	0.0	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	RRM520	Degraded efficiency 10% below nameplate	Restored to nameplate 80% AFUE	3	0.00	0.00	0.00	$118.52	$0.00	$0.00	$0.00	$0.00	household	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$422.20	$0.00	0.0	IL TRM - 5.3.13 - RS-HVC-	RSMeans 2015	N/A
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Gas Boiler - Pipe Insulation	A	RRM521	No insulation	Pipe insulated throughout home	15	0.30	0.00	0.00	$2.95	$0.00	$0.00	$0.00	$0.94	boil pipe	10.0%	100.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$118.94	$52.85	0.0	IL TRM - 5.3.2 - RS-HVC-P	IL TRM - 5.3.2 - RS-HVC-P	IL TRM - 5.3.2 - RS-HVC-P
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	RRM522	None	Drain equipped with heat recovery system	30	42.91	0.00	0.00	$781.94	$0.00	$0.00	$0.00	$78.19	household	0.0%	10.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$1,030.69	$149.85	0.0	NWPCC 2021 Power Plan	NWPCC 2021 Power Plan	NWPCC 2021 Power Plan
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Thermostatic Radiator Valve	A	RRM523	Radiator with no Thermostatic Restriction Valve	Thermostatic Restriction Valve	15	3.93	0.00	0.00	$84.87	$0.00	$0.00	$0.00	$84.87	radiator	0.0%	5.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$153.72	$165.15	0.0	IL TRM - 5.3.19 - RS-HVC-	AEG Cost Characterizatio	IL TRM - 5.3.19 - RS-HVC-
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (2.0 GPM)	A	RRM524	3.5 GPM showerhead	2.0 GPM showerhead	10	6.44	0.00	0.00	$19.09	$8.96	$0.00	$0.00	$19.09	showerheads	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$1,542.89	$485.82	0.0	RTF: Showerheads_v3.1	RTF: Showerheads_v3.1	RTF: Showerheads_v3.1
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Low Flow Showerhead (1.5 GPM)	A	RRM525	3.5 GPM showerhead	1.5 GPM showerhead	10	11.21	0.00	0.00	$19.09	$22.56	$0.00	$0.00	$19.09	showerheads	0.0%	0.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$2,090.46	$310.93	0.0	RTF: Showerheads_v3.1	RTF: Showerheads_v3.1	RTF: Showerheads_v3.1
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Temperature Setback	A	RRM526	135° F set point	Setback to 120° F	2	4.10	0.00	0.00	$4.91	$0.00	$0.00	$0.00	$4.91	household	15.0%	100.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$672.47	$1,006.81	0.0	IL TRM - 5.4.6 - RS-HWE-1	IL TRM - 5.4.6 - RS-HWE-1	IL TRM - 5.4.6 - RS-HWE-1
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Thermostatic Shower Restriction Valve	A	RRM527	No control	Restrictor installed, shutting off water when it is warm	10	2.05	0.00	0.00	$23.68	$4.36	$0.00	$0.00	$23.20	showerheads	0.0%	100.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$2,164.70	$1,197.18	0.0	RTF Workbook - Thermos	RTF Workbook - Thermos	RTF Workbook - Thermos
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Pipe Insulation	A	RRM528	No insulation of water pipe in unconditioned space	Insulated 5' of pipe between unit and conditioned space	15	0.81	0.00	0.00	$2.95	$0.00	$0.00	$0.00	$2.89	feet pipe	10.0%	100.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$241.58	$256.05	0.0	IL TRM - 5.4.1 - RS-HWE-I	IL TRM - 5.4.1 - RS-HWE-I	IL TRM - 5.4.1 - RS-HWE-I
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Water Heater - Solar System	A	RRM529	Standard tank water heater, baseline	40 sq ft supplemental solar system installed	30	59.46	0.00	0.00	$7,205.90	$0.00	$25.37	$0.00	$576.47	household	2.0%	30.0%	Retrofit	Retro1Slow	59.9%	TBD	0.2%	$6,379.52	$805.17	0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	Michigan Energy Measur
RegulaResidential	CZ3 - Multi Family	New	Miscellaneous	Natural Gas	Pool Heater - Solar System	A	RRM530	Standard baseline pool heater	40 sq ft supplemental solar system installed	30	42.23	0.00	0.00	$3,436.98	$0.00	$24.55	$0.00	$150.00	household	2.0%	30.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$3,805.62	$291.12	0.01	EIA 2018 Tech Forecast	DOE - Solar Swimming Pc	PLHT_SOL-Miscellaneous
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Dishwashers	A	RRM531	Minimum standard unit	ENERGY STAR unit	11	0.89	0.00	0.00	$77.77	$0.42	$0.00	$0.00	$23.33	household	67.9%	78.0%	Lost Opportunity	RetroEven20	80.8%	TBD	0.2%	$3,524.95	$1,450.75	0.0	IL TRM - 5.1.4 - RS-APL-ES	IL TRM - 5.1.4 - RS-APL-ES	IL TRM - 5.1.4 - RS-APL-ES
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Clothes Washers	A	RRM532	Minimum standard unit	ENERGY STAR unit	14.2	7.73	0.00	0.00	$61.41	$19.84	$0.00	$0.00	$36.84	household	19.3%	47.0%	Lost Opportunity	RetroEven20	80.8%	TBD	0.2%	$2,939.13	$564.17	0.0	RTF Workbook - ResCloth	RTF Workbook - ResCloth	RTF Workbook - ResCloth
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	ENERGY STAR Homes	A	RRM533	WA Building Code	Built Green spec (NC Only)	70	18.83	0.00	0.00	$1,077.27	$0.00	$0.00	$0.00	$53.86	household	0.0%	0.0%	Retrofit	LO5Med	85.0%	TBD	0.2%	$1,462.21	$108.54	0.0	ResMFEstarHomes2012	Cost & Savings Estimates	CNGC Guidance
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	ENERGY STAR Homes	A	RRM534	WA Building Code	Built Green spec (NC Only)	70	10.19	0.00	0.00	$1,077.27	$0.00	$0.00	$0.00	$53.86	household	0.0%	0.0%	Retrofit	LO5Med	85.0%	TBD	0.2%	$1,462.21	$108.54	0.0	ResMFEstarHomes2012	Cost & Savings Estimates	CNGC Guidance
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Built Green homes	A	RRM535	WA Building Code	Built Green spec (NC Only)	70	11.30	0.00	0.00	$1,077.27	$0.00	$0.00	$0.00	$200.00	household	0.0%	0.0%	Retrofit	LO12Med	84.7%	TBD	0.2%	$2,664.15	$642.48	0.0	ResMFEstarHomes2012	Cost & Savings Estimates	CNGC Guidance rev. 5/11
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Built Green homes	A	RRM536	WA Building Code	Built Green spec (NC Only)	70	6.11	0.00	0.00	$1,077.27	$0.00	$0.00	$0.00	$200.00	household	0.0%	0.0%	Retrofit	LO12Med	84.7%	TBD	0.2%	$2,664.15	$642.48	0.0	ResMFEstarHomes2012	Cost & Savings Estimates	CNGC Guidance rev. 5/11
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM537	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW	21	43.34	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	0.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$9,680.88	$1,636.28	0.0	CNGC Program Data	CNGC Program Data	Calculated
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Storage Tank)	A	RRM538	Gas space heating AFUE 80% and water heating baseline storage tank 40 gal	Combined tankless boiler unit for space and DHW	21	37.50	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	0.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$9,680.88	$1,636.28	0.0	CNGC Program Data	CNGC Program Data	Calculated
RegulaResidential	CZ3 - Multi Family	New	Space Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM539	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW	21	43.34	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	0.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$9,680.88	$1,636.28	0.0	CNGC Program Data	CNGC: 2018 COMBO Dat	Calculated
RegulaResidential	CZ3 - Multi Family	New	Water Heating	Natural Gas	Combined Boiler + DHW System (Tankless)	A	RRM540	Gas space heating AFUE 80% and separate water heating tankless unit	Combined tankless boiler unit for space and DHW	21	37.50	0.00	0.00	$5,190.57	$0.00	$0.00	$0.00	$600.00	household	0.0%	50.0%	Lost Opportunity	LO20Fast	84.7%	TBD	0.2%	$9,680.88	$1,636.28	0.0	CNGC Program Data	CNGC: 2018 COMBO Dat	Calculated

| Measure | | |

WA	Commercial	Warehouse	New	Food Preparation	Natural Gas	Range	A	C322.1	Standard	High Efficiency	1.0	285.56	0.00	0.00	0.00	$1.03	$0.00	$0.00	0.00	0.00	$1.03	$1.13	1 unit	14 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$7.15	2.1 %	0.00	COOK_ON Food Preparation ID A.20 18 Tech Forecast - FAU EUI Tech Forecast
WA	Commercial	Warehouse	New	Food Preparation	Natural Gas	Steamer	A	C322.2	Standard	ENERGY STAR	1.2	0.00	0.00	0.00	0.00	$1,307.15	$2.32	0.00	0.00	0.00	394.13	314.57	1 unit	0.0 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$27.93	52.1	0.00	TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI
WA	Commercial	Warehouse	New	Food Preparation	Natural Gas	Fryer	A	C322.3	Standard	ENERGY STAR	1.0	0.00	0.00	0.00	0.00	$1.15	$0.00	$0.00	0.00	0.00	0.03	0.04	1 unit	0.0 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$14.04	0.4	0.00	N/A
WA	Commercial	Warehouse	New	Food Preparation	Natural Gas	Other	A	C322.4	Standard (EF .76)	Conventional (EF .73)	6	0.00	0.00	0.00	0.00	$1,229.48	$0.00	$0.00	0.00	0.00	362.26	353.00	1 unit	0.0 %	100.0% Turnover	625 Slow	85.0% TRO	0.2%	$27.28	325.3	0.00	DOE Commercial R&D 2030 DOE Commercial R&D 2030 DOE Commercial R&D 2
WA	Commercial	Miscellaneous	Existing	Space Heating	Natural Gas	Furnace	A	C323.1	AFUE 80% (State default)	AFUE 96%	2.3	386.62	0.00	0.00	0.00	$1,829.85	-$10.15	0.00	0.00	0.00	334.82	34.05.20	400 kBtu/hr	74.1 %	55.0 % Turnover	LOS 2 Dried	85.0% TRO	0.2%	$44.73	327.3	0.00	FAU EUI Tech Forecast - FAU EUI Tech Forecast - FAU EUI Tech Forecast
WA	Commercial	Miscellaneous	Existing	Space Heating	Natural Gas	Boiler	A	C323.2	AFUE 80% (State default)	AFUE 97%	2.5	1,396.21	0.00	0.00	0.00	$5,822.21	$0.00	0.00	0.00	0.00	$ 10,713.00	$ 15,138.85	800 kBtu/hr	38.2 %	100.0 % Turnover	LOS 3 Fruit	85.0% TRO	0.2%	$ 1,115.86	398.5	0.00	FAU EUI Tech Forecast - FAU EUI Tech Forecast - FAU EUI Heating: EIA 2A 20
WA	Commercial	Miscellaneous	Existing	Space Heating	Natural Gas	Unit Heater	A	C323.7	Standard	In Kind Replacement	1.5	41,208.07	0.00	0.00	0.00	$8,528.163	$ 5,017.78	0.00	0.00	0.00	$ 25,438.83	$ 27,958.88	125 kBtu/hr	35.6 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$28.58	230.5	0.00	TRM v4.4.22 - O-HVAC-EUI NEE Program Data - S. TRM v4.4.22 - O-HVAC
WA	Commercial	Miscellaneous	Existing	Water Heating	Natural Gas	Water Heater	A	C324.2	TE 88 %	TE 96%	1.0	0.00	0.00	0.00	0.00	$0.00	$0.15	0.00	0.00	0.00	0.40	0.44	1 kBtu/hr	35.6 %	100.0 % Turnover	LOS 3 Fruit	84.7% TRO	0.2%	$12.13	0.5	0.00	ENERGY STAR 1-44% Baking (Efficiency) - Ga Cooking (Efficiency) - Ga Cooking
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Oven	A	C324.4	Standard	ENERGY STAR 1-44% Baking (Efficiency)	1.2	243.38	0.00	0.00	0.00	$54.41	$0.00	0.00	0.00	0.00	0.41	0.00.85	1 unit	3.0 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$1.94	34.5	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM 3.1 - Ga Cooking
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Convection Oven	A	C324.5	Standard	Efficiency (1-44% Baking (Efficiency)	1.7	691.28	0.00	0.00	0.00	$2,344.63	$0.00	0.00	0.00	0.00	360.5.02	28.65.52	1 unit	1.5 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$11.23	317.3	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM 3.1 - Ga Cooking
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Double Rack Oven	A	C324.6	Standard	FTSC Qualified (>65 % Cooking Efficiency)	1.2	2,815.57	0.00	0.00	0.00	$4,267.49	$0.00	0.00	0.00	0.00	1,172.06	1,172.72	1 unit	1.5 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$24.73	513.8	0.00	TRM v4.2.38 - O-FSE-FP-GE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Fryer	A	C324.2	Standard	ENERGY STAR	1.1	417.20	0.00	0.00	0.00	$902.21	$0.00	0.00	0.00	0.00	156.3.84	26.20.23	1 unit	4.8 %	100.0 % Turnover	LOS 2 Dried	84.7% TRO	0.2%	$38.52	152.1	0.00	TRM v4.0 - Gas Cooking (Efficiency) - Gas Cooking (Efficiency) - Gas Cooking
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Griddle	A	C324.3	Standard	In Kind Replacement	1.2	226.68	0.00	0.00	0.00	$1,126.19	$0.00	0.00	0.00	0.00	179.5.52	28.25.18	1 unit	3.4 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$84.68	154.4	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Range	A	C324.4	Standard	ENERGY STAR	1.0	355.96	0.00	0.00	0.00	$901.15	$0.00	0.00	0.00	0.00	139.1.52	54.60.90	1 unit	4.2 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$34.65	142.1	0.00	COOK_ON Food Preparation ID A.20 18 Tech Forecast - FAU EUI Tech Forecast
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Steamer	A	C324.5	Standard	ENERGY STAR	1.2	1,396.21	0.00	0.00	0.00	$5,822.21	$2.32	0.00	0.00	0.00	394.13	314.57	1 unit	1.2 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$24.96	52.1	0.00	TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Fryer	A	C324.6	Standard	ENERGY STAR	1.2	2,815.57	0.00	0.00	0.00	$4,267.49	$2.32	0.00	0.00	0.00	1,172.06	1,172.72	1 unit	1.5 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$24.73	513.8	0.00	TRM v4.2.38 - O-FSE-FP-GE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	Existing	Food Preparation	Natural Gas	Other	A	C324.7	Standard	ENERGY STAR	1.0	0.01	0.00	0.00	0.00	$1.15	$0.00	0.00	0.00	0.00	0.03	0.04	1 unit	1.2 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$13.71	0.1	0.00	N/A
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Fryer	A	C324.8	Standard (EF .76)	Conventional (EF .73)	6	2,138.84	0.00	0.00	0.00	$1,296.48	$0.00	0.00	0.00	0.00	314.78	353.00.44	1 unit	7.0 %	100.0 % Turnover	LOS Slow	85.0% TRO	0.2%	$ 1,38.15	31,39.4.67	0.00	DOE Commercial R&D 2030 DOE Commercial R&D 2030 DOE Commercial R&D 2
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Furnace	A	C323.9	AFUE 80% (State default)	AFUE 96%	2.3	386.64	0.00	0.00	0.00	$1,829.85	-$10.15	0.00	0.00	0.00	334.82	34.05.20	400 kBtu/hr	74.1 %	55.0 % Turnover	LOS 2 Dried	85.0% TRO	0.2%	$44.73	327.3	0.00	FAU EUI Tech Forecast - FAU EUI Tech Forecast - FAU EUI Tech Forecast
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Boiler	A	C324.1	AFUE 80% (State default)	AFUE 97%	2.5	1,396.21	0.00	0.00	0.00	$5,822.21	$0.00	0.00	0.00	0.00	$ 10,713.00	$ 15,138.85	800 kBtu/hr	38.2 %	100.0 % Turnover	LOS 3 Fruit	85.0% TRO	0.2%	$ 1,115.86	398.5	0.00	FAU EUI Tech Forecast - FAU EUI Tech Forecast - FAU EUI Heating: EIA 2A 20
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Unit Heater	A	C324.7	Standard	In Kind Replacement	1.5	41,208.07	0.00	0.00	0.00	$8,528.163	$ 5,017.78	0.00	0.00	0.00	$ 25,438.83	$ 27,958.88	125 kBtu/hr	35.6 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$28.58	230.5	0.00	TRM v4.4.22 - O-HVAC-EUI NEE Program Data - S. TRM v4.4.22 - O-HVAC
WA	Commercial	Miscellaneous	New	Water Heating	Natural Gas	Water Heater	A	C324.2	TE 88 %	TE 96%	1.0	0.00	0.00	0.00	0.00	$0.00	$0.15	0.00	0.00	0.00	0.40	0.44	1 kBtu/hr	35.6 %	100.0 % Turnover	LOS 3 Fruit	84.7% TRO	0.2%	$12.13	0.5	0.00	ENERGY STAR 1-44% Baking (Efficiency) - Ga Cooking (Efficiency) - Ga Cooking
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Oven	A	C324.3	Standard	ENERGY STAR 1-44% Baking (Efficiency)	1.2	243.38	0.00	0.00	0.00	$54.41	$0.00	0.00	0.00	0.00	0.41	0.00.85	1 unit	3.0 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$1.94	34.5	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM 3.1 - Ga Cooking
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Convection Oven	A	C324.4	Standard	Efficiency (1-44% Baking (Efficiency)	1.7	691.75	0.00	0.00	0.00	$2,344.63	$0.00	0.00	0.00	0.00	360.5.02	28.65.52	1 unit	1.5 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$11.23	317.3	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM 3.1 - Ga Cooking
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Double Rack Oven	A	C324.5	Standard	FTSC Qualified (>65 % Cooking Efficiency)	1.2	2,815.57	0.00	0.00	0.00	$4,267.49	$0.00	0.00	0.00	0.00	1,172.06	1,172.72	1 unit	1.5 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$24.73	513.8	0.00	TRM v4.2.38 - O-FSE-FP-GE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Fryer	A	C324.6	Standard	ENERGY STAR	1.1	417.20	0.00	0.00	0.00	$902.21	$0.00	0.00	0.00	0.00	156.3.84	26.20.23	1 unit	4.8 %	100.0 % Turnover	LOS 2 Dried	84.7% TRO	0.2%	$38.52	152.1	0.00	TRM v4.0 - Gas Cooking (Efficiency) - Gas Cooking (Efficiency) - Gas Cooking
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Griddle	A	C324.7	Standard	In Kind Replacement	1.2	226.68	0.00	0.00	0.00	$1,126.19	$0.00	0.00	0.00	0.00	179.5.52	28.25.18	1 unit	3.4 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$84.68	154.4	0.00	TRM v4.2.4 - O-FS-EO-FSE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Range	A	C324.8	Standard	ENERGY STAR	1.0	355.96	0.00	0.00	0.00	$901.15	$0.00	0.00	0.00	0.00	139.1.52	54.60.90	1 unit	4.2 %	100.0 % Turnover	LOS Map 4	85.0% TRO	0.2%	$34.65	142.1	0.00	COOK_ON Food Preparation ID A.20 18 Tech Forecast - FAU EUI Tech Forecast
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Steamer	A	C325.1	Standard	ENERGY STAR	1.2	1,396.21	0.00	0.00	0.00	$5,822.21	$2.32	0.00	0.00	0.00	394.13	314.57	1 unit	1.2 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$24.96	52.1	0.00	TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI TRM v4.2.3 - DSM EUI
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Fryer	A	C325.2	Standard	ENERGY STAR	1.2	2,815.57	0.00	0.00	0.00	$4,267.49	$2.32	0.00	0.00	0.00	1,172.06	1,172.72	1 unit	1.5 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$24.73	513.8	0.00	TRM v4.2.38 - O-FSE-FP-GE Menu Impact - P-FSE CONVM TRM v4.2.38 - O-FSE
WA	Commercial	Miscellaneous	New	Food Preparation	Natural Gas	Other	A	C325.3	Standard	ENERGY STAR	1.0	0.01	0.00	0.00	0.00	$1.15	$0.00	0.00	0.00	0.00	0.03	0.04	1 unit	1.2 %	100.0 % Turnover	625 Slow	85.0% TRO	0.2%	$13.71	0.1	0.00	N/A
WA	Commercial	Miscellaneous	New	Miscellaneous	Natural Gas	Fryer	A	C325.2	Standard (EF .76)	Conventional (EF .73)	6	2,138.84	0.00	0.00	0.00	$1,296.48	$0.00	0.00	0.00	0.00	314.78	353.00.44	1 unit	7.0 %	100.0 % Turnover	LOS Slow	85.0% TRO	0.2%	$ 1,38.15	31,39.4.67	0.00	DOE Commercial R&D 2030 DOE Commercial R&D 2030 DOE Commercial R&D 2

Measure											
State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Measure Identifier	Baseline Definition	Efficient Definition	Measure Life (Years)
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM1	R-13	R-38	45
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM2	R-11 or less	R-21	45
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM3	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Office	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM4	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM5	U-.5 or worse	U-.22 or better	45
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM6	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM7	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM8	No control	Reset control installed	16
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM9	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM10	No control	Turndown control installed	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM11	Average performance	Optimized burner controls	18
WA	Commercial	Office	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM12	No damper	Damper installed	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM13	Constant ventilation	DCV enabled	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM14	None	Economizer installed	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM15	None	Tube inserts installed	5
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM16	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM17	No insulation	Insulated water lines	20
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM18	None	HRV installed	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM19	Manual control	Programmable thermostat installed	11
WA	Commercial	Office	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM20	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM21	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM22	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM23	Standard faucet	Motion activated faucet	5
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM24	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM25	None	Drain HR system installed	20
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM26	Standard unit	ESTAR unit	10
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM27	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM28	No central controls	Central water boiler controls installed	15
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM29	None	Solar system installed	20
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM30	None/Standard ventilation	Fans Installed	10
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM31	Standard kitchen hood	DCV/HUA vent hood	20
WA	Commercial	Office	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM32	No cover	Night cover in place	5
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM33	No control system	Automation system installed and programmed	15
WA	Commercial	Office	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM34	No control system	Automation system installed and programmed	15
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM35	Average system efficiency	Optimized system	5
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM36	New construction code	Optimized HVAC design and controls	10
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM37	Vintage/existing building	Optimized HVAC flow and controls	7
WA	Commercial	Office	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM38	No energy management system	Energy management system installed and programmed	3
WA	Commercial	Office	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM39	R-13	R-38	45
WA	Commercial	Office	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM40	R-11 or less	R-21	45
WA	Commercial	Office	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM41	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Office	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM42	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Office	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM43	U-.5 or worse	U-.22 or better	45
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM44	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM45	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM46	No control	Reset control installed	16
WA	Commercial	Office	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM47	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM48	No control	Turndown control installed	15
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM49	Average performance	Optimized burner controls	18
WA	Commercial	Office	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM50	No damper	Damper installed	15
WA	Commercial	Office	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM51	Constant ventilation	DCV enabled	15
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM52	None	Economizer installed	15
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM53	None	Tube inserts installed	5
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM54	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Office	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM55	No insulation	Insulated water lines	20
WA	Commercial	Office	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM56	None	HRV installed	15
WA	Commercial	Office	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM57	Manual control	Programmable thermostat installed	11
WA	Commercial	Office	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM58	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM59	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Office	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM60	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM61	Standard faucet	Motion activated faucet	5
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM62	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM63	None	Drain HR system installed	20
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM64	Standard unit	ESTAR unit	10
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM65	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM66	No central controls	Central water boiler controls installed	15
WA	Commercial	Office	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM67	None	Solar system installed	20
WA	Commercial	Office	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM68	None/Standard ventilation	Fans Installed	10
WA	Commercial	Office	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM69	Standard kitchen hood	DCV/HUA vent hood	20
WA	Commercial	Office	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM70	No cover	Night cover in place	5
WA	Commercial	Office	New	Space Heating	Natural Gas	Building Automation System	A	WCM71	No control system	Automation system installed and programmed	15
WA	Commercial	Office	New	Water Heating	Natural Gas	Building Automation System	A	WCM72	No control system	Automation system installed and programmed	15
WA	Commercial	Office	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM73	Average system efficiency	Optimized system	5
WA	Commercial	Office	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM74	New construction code	Optimized HVAC design and controls	10
WA	Commercial	Office	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM75	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Commercial	Office	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM76	No energy management system	Energy management system installed and programmed	3
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM77	R-13	R-38	45
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM78	R-11 or less	R-21	45
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM79	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM80	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM81	U-.5 or worse	U-.22 or better	45
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM82	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM83	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM84	No control	Reset control installed	16
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM85	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM86	No control	Turndown control installed	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM87	Average performance	Optimized burner controls	18
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM88	No damper	Damper installed	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM89	Constant ventilation	DCV enabled	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM90	None	Economizer installed	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM91	None	Tube inserts installed	5
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM92	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM93	No insulation	Insulated water lines	20
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM94	None	HRV installed	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM95	Manual control	Programmable thermostat installed	11
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM96	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM97	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM98	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM99	Standard faucet	Motion activated faucet	5
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM100	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM101	None	Drain HR system installed	20
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM102	Standard unit	ESTAR unit	10
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM103	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM104	No central controls	Central water boiler controls installed	15
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM105	None	Solar system installed	20
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM106	None/Standard ventilation	Fans Installed	10
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM107	Standard kitchen hood	DCV/HUA vent hood	20
WA	Commercial	Retail	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM108	No cover	Night cover in place	5
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM109	No control system	Automation system installed and programmed	15
WA	Commercial	Retail	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM110	No control system	Automation system installed and programmed	15
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM111	Average system efficiency	Optimized system	5
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM112	New construction code	Optimized HVAC design and controls	10
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM113	Vintage/existing building	Optimized HVAC flow and controls	7
WA	Commercial	Retail	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM114	No energy management system	Energy management system installed and programmed	3
WA	Commercial	Retail	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM115	R-13	R-38	45
WA	Commercial	Retail	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM116	R-11 or less	R-21	45
WA	Commercial	Retail	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM117	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Retail	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM118	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Retail	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM119	U-.5 or worse	U-.22 or better	45
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM120	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM121	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM122	No control	Reset control installed	16
WA	Commercial	Retail	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM123	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM124	No control	Turndown control installed	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM125	Average performance	Optimized burner controls	18
WA	Commercial	Retail	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM126	No damper	Damper installed	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM127	Constant ventilation	DCV enabled	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM128	None	Economizer installed	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM129	None	Tube inserts installed	5
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM130	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Retail	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM131	No insulation	Insulated water lines	20
WA	Commercial	Retail	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM132	None	HRV installed	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM133	Manual control	Programmable thermostat installed	11
WA	Commercial	Retail	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM134	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM135	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Retail	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM136	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM137	Standard faucet	Motion activated faucet	5
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM138	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM139	None	Drain HR system installed	20
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM140	Standard unit	ESTAR unit	10
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM141	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM142	No central controls	Central water boiler controls installed	15
WA	Commercial	Retail	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM143	None	Solar system installed	20
WA	Commercial	Retail	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM144	None/Standard ventilation	Fans Installed	10
WA	Commercial	Retail	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM145	Standard kitchen hood	DCV/HUA vent hood	20
WA	Commercial	Retail	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM146	No cover	Night cover in place	5
WA	Commercial	Retail	New	Space Heating	Natural Gas	Building Automation System	A	WCM147	No control system	Automation system installed and programmed	15
WA	Commercial	Retail	New	Water Heating	Natural Gas	Building Automation System	A	WCM148	No control system	Automation system installed and programmed	15
WA	Commercial	Retail	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM149	Average system efficiency	Optimized system	5
WA	Commercial	Retail	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM150	New construction code	Optimized HVAC design and controls	10
WA	Commercial	Retail	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM151	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Commercial	Retail	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM152	No energy management system	Energy management system installed and programmed	3
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM153	R-13	R-38	45
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM154	R-11 or less	R-21	45
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM155	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM156	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM157	U-.5 or worse	U-.22 or better	45
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM158	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM159	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM160	No control	Reset control installed	16
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM161	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM162	No control	Turndown control installed	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM163	Average performance	Optimized burner controls	18
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM164	No damper	Damper installed	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM165	Constant ventilation	DCV enabled	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM166	None	Economizer installed	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM167	None	Tube inserts installed	5
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM168	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM169	No insulation	Insulated water lines	20
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM170	None	HRV installed	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM171	Manual control	Programmable thermostat installed	11
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM172	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM173	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM174	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM175	Standard faucet	Motion activated faucet	5
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM176	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM177	None	Drain HR system installed	20
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM178	Standard unit	ESTAR unit	15
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM179	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM180	No central controls	Central water boiler controls installed	15
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM181	None	Solar system installed	20
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM182	None/Standard ventilation	Fans Installed	10
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM183	Standard kitchen hood	DCV/HUA vent hood	20
WA	Commercial	Restaurant	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM184	No cover	Night cover in place	5
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM185	No control system	Automation system installed and programmed	15
WA	Commercial	Restaurant	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM186	No control system	Automation system installed and programmed	15
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM187	Average system efficiency	Optimized system	5
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM188	New construction code	Optimized HVAC design and controls	10
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM189	Vintage/existing building	Optimized HVAC flow and controls	7
WA	Commercial	Restaurant	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM190	No energy management system	Energy management system installed and programmed	3
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM191	R-13	R-38	45
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM192	R-11 or less	R-21	45
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM193	~2°F thermal losses	50% reduction in thermal losses	20
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM194	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM195	U-.5 or worse	U-.22 or better	45
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM196	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM197	Degrade performance	General cleaning and maintenance	3
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM198	No control	Reset control installed	16
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM199	Degrade performance	Cleaning and maintenance	6
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM200	No control	Turndown control installed	15
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM201	Average performance	Optimized burner controls	18
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM202	No damper	Damper installed	15
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM203	Constant ventilation	DCV enabled	15
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM204	None	Economizer installed	15
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM205	None	Tube inserts installed	5
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM206	No insulation	Lines and condenstate tank insulated	20
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM207	No insulation	Insulated water lines	20
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM208	None	HRV installed	15
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM209	Manual control	Programmable thermostat installed	11
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM210	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM211	Standard laundry machine	Ozone laundry system	10
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM212	Standard laundry machine	ESTAR/High MEF unit installed	7.1
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM213	Standard faucet	Motion activated faucet	5
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM214	2.5 GPM faucet	1.5 GPM faucet	10
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM215	None	Drain HR system installed	20
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM216	Standard unit	ESTAR unit	15
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM217	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM218	No central controls	Central water boiler controls installed	15
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM219	None	Solar system installed	20
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM220	None/Standard ventilation	Fans Installed	10

WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM221	Standard kitchen hood	DCV/HUA vent hood	20	929.65	0.00	0.00	$1,212.69	$350.89	$0.00	$0.00	$1,212.69	$1,333.95	Kitch Hood	10.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$567.31	$182.48	0.35	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Restaurant	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM222	No cover	Night cover in place	5	0.00	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$542.96	$309.00	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Building Automation System	A	WCM223	No control system	Automation system installed and programmed	15	0.05	0.00	0.00	$0.51	$0.04	$0.00	$0.00	$0.18	$0.19	sqft	0.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$171.59	$84.31	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Restaurant	New	Water Heating	Natural Gas	Building Automation System	A	WCM224	No control system	Automation system installed and programmed	15	0.07	0.00	0.00	$0.51	$0.04	$0.00	$0.00	$0.18	$0.19	sqft	0.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$171.59	$84.31	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM225	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$292.90	$189.90	0.0	n/a	n/a	n/a
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM226	New construction code	Optimized HVAC design and controls	10	0.05	0.00	0.00	$0.27	$0.04	$0.00	$0.00	$0.08	$0.09	sqft	100.0%	100.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$204.62	$98.07	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	COM_CX-All-AEG-5
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM227	Vintage/existing building	Optimized HVAC flow and controls	5	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.38	$0.42	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Restaurant	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM228	No energy management system	Energy management system installed and programmed	3	0.05	0.00	0.00	$0.66	$0.09	$0.00	$0.00	$0.20	$0.22	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$606.63	$334.77	0.0	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM229	R-13	R-38	45	0.01	0.00	0.00	$1.11	$0.00	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	21.7%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$189.23	$130.29	0.04	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM230	R-11 or less	R-21	45	0.03	0.00	0.00	$1.74	$0.01	$0.00	$0.00	$0.90	$0.99	sqft wall	60.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$176.04	$96.23	0.08	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM231	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	40.0%	60.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM232	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.07	$0.00	$0.00	$0.00	$0.02	$0.02	sqft	15.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$105.82	$46.46	0.01	MA TRM - 2019-2021 - C	RS Means Cost Calculato	Building Energy Simulati
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM233	U-.5 or worse	U-.22 or better	45	0.15	0.00	0.00	$24.15	$0.04	$0.00	$0.00	$5.00	$5.50	sqft window	45.0%	100.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$757.34	$231.83	0.12	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM234	Degrade performance	General cleaning and maintenance	3	1,415.60	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$1.02	$1.78	0.18	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM235	Degrade performance	General cleaning and maintenance	3	259.63	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$5.60	$9.78	0.32	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM236	No control	Reset control installed	16	2,059.06	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$776.04	$853.64	BoilerCtrl	35.0%	55.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$62.08	$67.31	0.25	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM237	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$75.61	$83.17	BoilerCtrl	73.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$151.63	$227.20	0.03	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM238	No control	Turndown control installed	15	1.93	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$2.70	$2.97	kbtuh heat	25.0%	50.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$215.29	$238.86	0.3	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM239	Average performance	Optimized burner controls	18	0.56	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.91	$1.00	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$198.08	$205.80	0.01	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM240	No damper	Damper installed	15	64.91	0.00	0.00	$1,863.83	$24.04	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$3,467.18	$1,538.44	0.74	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM241	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.27	$0.01	$0.00	$0.00	$0.08	$0.09	sqft	55.0%	75.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$147.72	$71.80	0.04	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM242	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$196.26	$217.75	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM243	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM244	No insulation	Lines and condensate tank insulated	20	16.06	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	30.0%	35.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$147.02	$147.42	0.22	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM245	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	30.0%	40.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$213.28	$271.51	0.13	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM246	None	HRV installed	15	0.39	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	5.0%	10.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$316.98	$158.48	0.36	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM247	Manual control	Programmable thermostat installed	11	29.25	0.00	0.00	$171.85	$7.71	$0.00	$0.00	$62.57	$68.83	Stat Unit	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,021.21	$464.89	0.45	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM248	Manual control	Wi-Fi/interactive thermostat installed	5	0.08	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	0.0%	30.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$327.66	$186.35	3.84	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM249	Standard laundry machine	Ozone laundry system	10	621.81	0.00	0.00	$5,522.82	$0.00	$214.80	$0.00	$2,500.00	$2,750.00	site	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$1,083.62	$1,107.83	0.0	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM250	Standard laundry machine	ESTAR/High MEF unit installed	7.1	35.51	0.00	0.00	$443.39	$0.00	$20.72	$0.00	$133.02	$146.32	ClothesWashers	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$1,043.88	$1,317.30	0.0	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM251	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$281.44	$143.07	0.0	n/a	n/a	n/a
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM252	2.5 GPM faucet	1.5 GPM faucet	10	5.42	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$2,480.39	$347.67	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM253	None	Drain HR system installed	20	8.83	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$7,802.87	$3,730.45	0.0	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM254	Standard unit	ESTAR unit	10	71.00	0.00	0.00	$133.14	$27.59	$0.00	$0.00	$133.14	$146.46	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$841.42	$511.74	0.01	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM255	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,904.07	$594.63	0.09	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM256	No central controls	Central water boiler controls installed	15	164.70	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$2,310.74	$2,563.79	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM257	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$5,182.51	$2,533.50	10.6	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM258	None/Standard ventilation	Fans Installed	10	961.08	0.00	0.00	$6,939.25	$253.24	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,279.77	$536.08	0.64	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM259	Standard kitchen hood	DCV/HUA vent hood	20	1,646.44	0.00	0.00	$2,047.18	$433.82	$0.00	$0.00	$2,047.18	$2,251.90	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$457.37	$179.66	1.02	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Grocery	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM260	No cover	Night cover in place	5	0.00	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	50.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$542.78	$308.89	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM261	No control system	Automation system installed and programmed	15	0.08	0.00	0.00	$0.44	$0.04	$0.00	$0.00	$0.21	$0.23	sqft	10.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$186.07	$116.06	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Grocery	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM262	No control system	Automation system installed and programmed	15	0.02	0.00	0.00	$0.44	$0.04	$0.00	$0.00	$0.21	$0.23	sqft	10.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$186.07	$116.06	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM263	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM264	New construction code	Optimized HVAC design and controls	10	0.10	0.00	0.00	$0.27	$0.05	$0.00	$0.00	$0.08	$0.09	sqft	0.0%	0.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$204.52	$95.91	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	Building commissioning c
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM265	Vintage/existing building	Optimized HVAC flow and controls	7	0.01	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	20.0%	45.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$223.26	$123.04	0.27	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(
WA	Commercial	Grocery	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM266	No energy management system	Energy management system installed and programmed	3	0.08	0.00	0.00	$0.96	$0.11	$0.00	$0.00	$0.70	$0.77	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$709.73	$880.45	0.0	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM267	R-13	R-38	45	0.00	0.00	0.00	$1.11	$0.00	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$129.54	$89.68	0.0	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	N/A
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM268	R-11 or less	R-21	45	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.79	$0.87	sqft wall	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$111.69	$68.66	0.0	RTF Wkbk - ComWeathe	N/A	Building Energy Simulati
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM269	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Grocery	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM270	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$110.51	$52.84	0.0	MA TRM - 2019-2021 - C	N/A	n/a
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM271	U-.5 or worse	U-.22 or better	45	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft window	0.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$53.41	$0.00	0.0	RTF Wkbk - ComWeathe	N/A	n/a
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM272	Degrade performance	General cleaning and maintenance	3	1,206.51	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$1.10	$1.92	0.01	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM273	Degrade performance	General cleaning and maintenance	3	227.18	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$6.05	$10.55	0.02	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM274	No control	Reset control installed	16	1,754.93	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$776.04	$853.64	BoilerCtrl	100.0%	100.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$66.85	$72.48	0.0	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM275	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$75.61	$83.17	BoilerCtrl	0.0%	10.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$139.34	$208.78	0.0	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM276	No control	Turndown control installed	15	1.65	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$2.70	$2.97	kbtuh heat	100.0%	100.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$222.90	$247.31	0.0	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM277	Average performance	Optimized burner controls	18	0.48	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.87	$0.96	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$196.83	$200.29	0.0	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Grocery	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM278	No damper	Damper installed	15	56.79	0.00	0.00	$1,863.83	$23.10	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$3,718.76	$1,657.36	0.08	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Grocery	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM279	Constant ventilation	DCV enabled	15	0.09	0.00	0.00	$0.17	$0.03	$0.00	$0.00	$0.17	$0.19	sqft	100.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$218.67	$223.08	0.0	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM280	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$183.63	$188.40	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM281	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM282	No insulation	Lines and condensate tank insulated	20	16.06	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$136.23	$136.60	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM283	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$200.92	$255.78	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM284	None	HRV installed	15	0.39	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$315.31	$157.65	0.0	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM285	Manual control	Programmable thermostat installed	11	28.51	0.00	0.00	$171.85	$7.81	$0.00	$0.00	$75.18	$82.70	Stat Unit	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,049.79	$555.24	0.0	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Grocery	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM286	Manual control	Wi-Fi/interactive thermostat installed	5	0.08	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	10.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$328.12	$186.62	0.6	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM287	Standard laundry machine	Ozone laundry system	10	585.05	0.00	0.00	$21,708.53	$0.00	$214.80	$0.00	$2,500.00	$2,750.00	site	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,091.43	$1,021.05	0.0	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM288	Standard laundry machine	ESTAR/High MEF unit installed	7.1	35.51	0.00	0.00	$443.39	$0.00	$20.72	$0.00	$133.02	$146.32	ClothesWashers	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$912.44	$1,151.43	0.0	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM289	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM290	2.5 GPM faucet	1.5 GPM faucet	10	5.42	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$2,237.77	$313.66	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM291	None	Drain HR system installed	20	11.92	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$5,403.04	$2,583.12	0.0	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM292	Standard unit	ESTAR unit	10	71.00	0.00	0.00	$133.14	$27.59	$0.00	$0.00	$133.14	$146.46	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$732.66	$445.59	0.0	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM293	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,299.82	$521.37	0.01	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM294	No central controls	Central water boiler controls installed	15	288.19	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$1,153.00	$1,279.27	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM295	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,741.44	$2,317.88	1.15	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM296	None/Standard ventilation	Fans Installed	10	897.62	0.00	0.00	$6,939.25	$245.89	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,318.47	$555.79	0.07	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM297	Standard kitchen hood	DCV/HUA vent hood	20	1,537.72	0.00	0.00	$1,212.69	$421.24	$0.00	$0.00	$1,212.69	$1,333.95	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$390.01	$110.43	0.12	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Grocery	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM298	No cover	Night cover in place	5	0.00	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$542.57	$308.77	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Building Automation System	A	WCM299	No control system	Automation system installed and programmed	15	0.08	0.00	0.00	$0.40	$0.04	$0.00	$0.00	$0.20	$0.22	sqft	10.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$187.11	$122.17	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Grocery	New	Water Heating	Natural Gas	Building Automation System	A	WCM300	No control system	Automation system installed and programmed	15	0.02	0.00	0.00	$0.40	$0.04	$0.00	$0.00	$0.20	$0.22	sqft	10.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$187.11	$122.17	0.0	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM301	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM302	New construction code	Optimized HVAC design and controls	10	0.09	0.00	0.00	$0.27	$0.05	$0.00	$0.00	$0.08	$0.09	sqft	100.0%	100.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$204.48	$96.07	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	COM_CX-All-AEG-5
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM303	Vintage/existing building	Optimized HVAC flow and controls	5	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.38	$0.42	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Grocery	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM304	No energy management system	Energy management system installed and programmed	3	0.08	0.00	0.00	$0.96	$0.11	$0.00	$0.00	$0.29	$0.32	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$656.24	$361.56	0.0	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM305	R-13	R-38	45	0.02	0.00	0.00	$1.11	$0.01	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	39.4%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$193.03	$129.80	1.62	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM306	R-11 or less	R-21	45	0.02	0.00	0.00	$1.74	$0.01	$0.00	$0.00	$0.90	$0.99	sqft wall	60.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$180.03	$96.69	0.41	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM307	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	40.0%	60.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Education	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM308	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.07	$0.00	$0.00	$0.00	$0.02	$0.02	sqft	15.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$102.85	$45.17	0.0	MA TRM - 2019-2021 - C	RS Means Cost Calculato	Building Energy Simulati
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM309	U-.5 or worse	U-.22 or better	45	0.15	0.00	0.00	$24.15	$0.10	$0.00	$0.00	$5.00	$5.50	sqft window	45.0%	100.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$784.54	$231.53	0.69	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM310	Degrade performance	General cleaning and maintenance	3	192.50	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$7.29	$12.72	2.75	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM311	Degrade performance	General cleaning and maintenance	3	77.11	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$18.45	$32.19	1.15	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM312	No control	Reset control installed	16	280.01	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$640.82	$704.91	BoilerCtrl	35.0%	55.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$406.51	$397.92	3.88	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM313	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$22.68	$18.15	BoilerCtrl	73.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$114.07	$57.10	2.99	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM314	No control	Turndown control installed	15	0.26	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$0.81	$0.89	kbtuh heat	25.0%	50.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$243.87	$121.93	4.62	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM315	Average performance	Optimized burner controls	18	0.08	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.27	$0.30	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$155.08	$75.40	0.22	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Education	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM316	No damper	Damper installed	15	19.28	0.00	0.00	$1,863.83	$16.01	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$10,431.77	$4,809.64	2.65	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Education	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM317	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.27	$0.02	$0.00	$0.00	$0.08	$0.09	sqft	55.0%	75.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$152.82	$71.80	0.45	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM318	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$130.66	$65.33	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM319	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM320	No insulation	Lines and condensate tank insulated	20	3.21	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	30.0%	35.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$496.50	$497.85	3.35	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM321	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	30.0%	40.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$210.29	$267.71	9.64	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM322	None	HRV installed	15	0.11	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	5.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$358.13	$179.06	16.87	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM323	Manual control	Programmable thermostat installed	11	2.22	0.00	0.00	$171.85	$1.41	$0.00	$0.00	$51.55	$56.71	Stat Unit	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$5,833.64	$2,860.74	0.47	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Education	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM324	Manual control	Wi-Fi/interactive thermostat installed	5	0.02	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	0.0%	40.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$337.30	$191.84	19.86	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM325	Standard laundry machine	Ozone laundry system	10	7,239.00	0.00	0.00	$42,863.55	$0.00	$4,773.36	$0.00	$55,555.56	$61,111.11	site	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$647.62	$2,120.44	0.0	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	CNGC Data
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM326	Standard laundry machine	ESTAR/High MEF unit installed	7.1	35.51	0.00	0.00	$443.39	$0.00	$20.72	$0.00	$133.02	$146.32	ClothesWashers	8.0%	20.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$1,043.71	$1,317.09	0.1	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM327	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$281.44	$143.07	0.0	n/a	n/a	n/a
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM328	2.5 GPM faucet	1.5 GPM faucet	10	13.37	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$1,216.99	$170.58	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM329	None	Drain HR system installed	20	4.32	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$13,164.57	$6,293.81	0.0	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM330	Standard unit	ESTAR unit	15	462.00	0.00	0.00	$854.34	$179.29	$0.00	$0.00	$854.34	$939.77	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$785.57	$367.54	0.93	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM331	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,903.32	$594.54	0.88	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM332	No central controls	Central water boiler controls installed	15	80.63	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,654.50	$5,164.22	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM333	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$5,181.98	$2,533.24	53.16	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM334	None/Standard ventilation	Fans Installed	10	273.75	0.00	0.00	$6,939.25	$173.71	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	25.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$4,246.88	$1,908.95	4.96	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM335	Standard kitchen hood	DCV/HUA vent hood	20	468.96	0.00	0.00	$2,047.18	$297.59	$0.00	$0.00	$2,047.18	$2,251.90	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,321.05	$641.17	3.98	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Education	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM336	No cover	Night cover in place	5	0.00	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	50.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$543.00	$309.02	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM337	No control system	Automation system installed and programmed	15	0.02	0.00	0.00	$0.13	$0.04	$0.00	$0.00	$0.05	$0.05	sqft	10.0%	22.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$160.66	$83.78	0.32	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Education	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM338	No control system	Automation system installed and programmed	15	0.01	0.00	0.00	$0.13	$0.04	$0.00	$0.00	$0.05	$0.05	sqft	10.0%	22.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$160.66	$83.78	0.05	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM339	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$295.73	$206.78	0.0	n/a	n/a	n/a
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM340	New construction code	Optimized HVAC design and controls	10	0.02	0.00	0.00	$0.27	$0.03	$0.00	$0.00	$0.08	$0.09	sqft	0.0%	0.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$202.70	$99.63	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	Building commissioning c
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM341	Vintage/existing building	Optimized HVAC flow and controls	7	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$223.51	$123.35	1.25	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(
WA	Commercial	Education	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM342	No energy management system	Energy management system installed and programmed	3	0.02	0.00	0.00	$0.18	$0.07	$0.00	$0.00	$0.05	$0.06	sqft	5.0%	22.5%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$513.47	$286.53	8.71	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Education	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM343	R-13	R-38	45	0.00	0.00	0.00	$1.11	$0.00	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$129.54	$89.68	0.0	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	N/A
WA	Commercial	Education	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM344	R-11 or less	R-21	45	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.79	$0.87	sqft wall	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$111.69	$68.66	0.0	RTF Wkbk - ComWeathe	N/A	Building Energy Simulati
WA	Commercial	Education	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM345	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Education	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM346	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$110.51	$52.84	0.0	MA TRM - 2019-2021 - C	N/A	n/a
WA	Commercial	Education	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM347	U-.5 or worse	U-.22 or better	45	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft window	0.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$53.41	$0.00	0.0	RTF Wkbk - ComWeathe	N/A	n/a
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM348	Degrade performance	General cleaning and maintenance	3	182.88	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$7.52	$13.12	0.16	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM349	Degrade performance	General cleaning and maintenance	3	67.47	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$19.83	$34.60	0.06	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM350	No control	Reset control installed	16	266.01	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$608.79	$669.67	BoilerCtrl	100.0%	100.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$410.16	$390.05	0.0	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Education	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM351	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$22.68	$18.15	BoilerCtrl	0.0%	10.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$111.87	$56.00	0.14	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM352	No control	Turndown control installed	15	0.25	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$0.81	$0.89	kbtuh heat	100.0%	100.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$244.72	$122.36	0.0	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM353	Average performance	Optimized burner controls	18	0.07	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.27	$0.30	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$155.25	$75.48	0.03	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Education	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM354	No damper	Damper installed	15	16.87	0.00	0.00	$1,863.83	$15.73	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$11,137.81	$5,142.13	0.29	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Education	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM355	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.17	$0.02	$0.00	$0.00	$0.06	$0.06	sqft	100.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$153.47	$80.03	0.0	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM356	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$130.66	$65.33	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM357	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM358	No insulation	Lines and condensate tank insulated	20	2.70	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$543.01	$544.49	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Education	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM359	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$207.44	$264.07	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Education	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM360	None	HRV installed	15	0.11	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$357.56	$178.77	0.0	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Education	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM361	Manual control	Programmable thermostat installed	11	2.07	0.00	0.00	$171.85	$1.39	$0.00	$0.00	$51.55	$56.71	Stat Unit	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$5,955.40	$2,922.69	0.0	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Education	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM362	Manual control	Wi-Fi/interactive thermostat installed	5	0.02	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	10.0%	60.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$337.45	$191.93	2.89	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM363	Standard laundry machine	Ozone laundry system	10	7,239.00	0.00	0.00	$482,411.85	$0.00	$4,773.36	$0.00	$55,555.56	$61,111.11	site	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$7,369.58	$1,839.16	0.0	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	CNGC Data
WA	Commercial	Education	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM364	Standard laundry machine	ESTAR/High MEF unit installed	7.1	35.51	0.00	0.00	$443.39	$0.00	$20.72	$0.00	$133.02	$146.32	ClothesWashers	8.0%	20.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$912.44	$1,151.43	0.01	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM365	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM366	2.5 GPM faucet	1.5 GPM faucet	10	13.37	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$1,076.01	$150.82	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM367	None	Drain HR system installed	20	3.34	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$14,196.92	$6,787.36	0.0	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM368	Standard unit	ESTAR unit	15	71.00	0.00	0.00	$854.34	$179.29	$0.00	$0.00	$854.34	$939.77	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$4,336.68	$2,029.01	0.02	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM369	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,299.82	$521.37	0.12	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM370	No central controls	Central water boiler controls installed	15	80.65	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,050.49	$4,494.07	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C
WA	Commercial	Education	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM371	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,741.44	$2,317.88	5.75	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Education	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM372	None/Standard ventilation	Fans Installed	10	254.82	0.00	0.00	$6,939.25	$171.52	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	25.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$4,416.80	$1,989.33	0.58	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Education	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM373	Standard kitchen hood	DCV/HUA vent hood	20	436.52	0.00	0.00	$1,212.69	$293.84	$0.00	$0.00	$1,212.69	$1,333.95	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,095.85	$396.18	0.46	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Education	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM374	No cover	Night cover in place	5	0.00	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$543.00	$309.02	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Education	New	Space Heating	Natural Gas	Building Automation System	A	WCM375	No control system	Automation system installed and programmed	15	0.02	0.00	0.00	$0.12	$0.03	$0.00	$0.00	$0.04	$0.05	sqft	10.0%	22.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$160.13	$83.52	0.04	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Education	New	Water Heating	Natural Gas	Building Automation System	A	WCM376	No control system	Automation system installed and programmed	15	0.01	0.00	0.00	$0.12	$0.03	$0.00	$0.00	$0.04	$0.05	sqft	10.0%	22.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$160.13	$83.52	0.01	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Education	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM377	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Education	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM378	New construction code	Optimized HVAC design and controls	10	0.02	0.00	0.00	$0.27	$0.03	$0.00	$0.00	$0.08	$0.09	sqft	100.0%	100.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$202.69	$99.67	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	COM_CX-All-AEG-5
WA	Commercial	Education	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM379	Vintage/existing building	Optimized HVAC flow and controls	5	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.38	$0.42	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Education	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM380	No energy management system	Energy management system installed and programmed	3	0.02	0.00	0.00	$0.18	$0.07	$0.00	$0.00	$0.05	$0.06	sqft	5.0%	22.5%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$513.61	$286.66	1.01	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM381	R-13	R-38	45	0.05	0.00	0.00	$1.11	$0.01	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	8.1%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$190.98	$127.59	0.04	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM382	R-11 or less	R-21	45	0.12	0.00	0.00	$1.74	$0.03	$0.00	$0.00	$0.90	$0.99	sqft wall	60.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$180.10	$92.22	0.24	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM383	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	40.0%	60.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM384	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.07	$0.00	$0.00	$0.00	$0.02	$0.02	sqft	15.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$102.85	$45.17	0.0	MA TRM - 2019-2021 - C	RS Means Cost Calculato	Building Energy Simulati
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM385	U-.5 or worse	U-.22 or better	45	2.04	0.00	0.00	$24.15	$0.51	$0.00	$0.00	$5.00	$5.50	sqft window	45.0%	100.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$535.09	$125.18	0.2	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	Building Energy Simulati
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM386	Degrade performance	General cleaning and maintenance	3	863.89	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$1.67	$2.91	0.6	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM387	Degrade performance	General cleaning and maintenance	3	358.04	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$4.08	$7.12	0.51	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM388	No control	Reset control installed	16	1,256.57	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$776.04	$853.64	BoilerCtrl	35.0%	55.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$101.35	$109.88	0.84	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM389	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$75.61	$83.17	BoilerCtrl	73.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$151.16	$226.50	0.14	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM390	No control	Turndown control installed	15	1.18	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$2.12	$2.33	kbtuh heat	25.0%	50.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$237.05	$229.83	1.0	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM391	Average performance	Optimized burner controls	18	0.34	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.61	$0.67	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$179.30	$150.36	0.05	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM392	No damper	Damper installed	15	89.51	0.00	0.00	$1,863.83	$25.51	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$2,558.94	$1,127.68	1.18	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM393	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.27	$0.01	$0.00	$0.00	$0.08	$0.09	sqft	55.0%	75.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$146.77	$71.80	0.05	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM394	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$159.70	$132.80	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM395	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM396	No insulation	Lines and condensate tank insulated	20	13.09	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	30.0%	35.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$175.23	$175.71	0.73	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM397	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	30.0%	40.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$212.82	$270.93	0.51	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM398	None	HRV installed	15	0.63	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	5.0%	15.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$290.10	$145.05	2.54	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM399	Manual control	Programmable thermostat installed	11	53.39	0.00	0.00	$171.85	$13.46	$0.00	$0.00	$78.47	$86.32	Stat Unit	10.0%	15.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$729.69	$338.92	0.43	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM400	Manual control	Wi-Fi/interactive thermostat installed	5	0.09	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	0.0%	35.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$327.01	$185.99	5.11	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM401	Standard laundry machine	Ozone laundry system	10	4,825.05	0.00	0.00	$21,708.53	$0.00	$214.80	$0.00	$2,500.00	$2,750.00	site	10.0%	20.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$573.71	$143.17	3.16	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	CNGC Data
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM402	Standard laundry machine	ESTAR/High MEF unit installed	7.1	48.55	0.00	0.00	$443.39	$0.00	$33.48	$0.00	$133.02	$146.32	ClothesWashers	8.0%	20.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$480.43	$979.16	0.02	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM403	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$281.44	$143.07	0.0	n/a	n/a	n/a
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM404	2.5 GPM faucet	1.5 GPM faucet	10	36.96	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$484.80	$67.95	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM405	None	Drain HR system installed	20	68.55	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	5.0%	10.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$1,220.36	$583.44	0.27	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM406	Standard unit	ESTAR unit	15	462.00	0.00	0.00	$854.34	$179.29	$0.00	$0.00	$854.34	$939.77	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$785.73	$367.62	0.07	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM407	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,904.24	$594.65	0.07	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM408	No central controls	Central water boiler controls installed	15	1,278.02	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$301.32	$334.31	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM409	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$5,182.62	$2,533.56	62.44	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM410	None/Standard ventilation	Fans Installed	10	1,040.83	0.00	0.00	$6,939.25	$262.46	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	25.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,228.77	$510.69	1.46	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM411	Standard kitchen hood	DCV/HUA vent hood	20	1,783.05	0.00	0.00	$2,047.18	$449.63	$0.00	$0.00	$1,897.05	$2,086.76	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$438.65	$158.59	1.17	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Healthcare	Existing	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM412	No cover	Night cover in place	5	0.03	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	50.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$536.03	$305.05	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, Co	CA eTRM - Pool Cover, Co
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Building Automation System	A	WCM413	No control system	Automation system installed and programmed	15	0.09	0.00	0.00	$0.85	$0.04	$0.00	$0.00	$0.27	$0.29	sqft	10.0%	17.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$183.58	$84.87	0.06	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Healthcare	Existing	Water Heating	Natural Gas	Building Automation System	A	WCM414	No control system	Automation system installed and programmed	15	0.11	0.00	0.00	$0.85	$0.04	$0.00	$0.00	$0.27	$0.29	sqft	10.0%	17.5%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$183.58	$84.87	0.04	COM_EMS-All-XCELCO-2(	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2(
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM415	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$296.52	$211.48	0.0	n/a	n/a	n/a
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM416	New construction code	Optimized HVAC design and controls	10	0.13	0.00	0.00	$0.27	$0.06	$0.00	$0.00	$0.08	$0.09	sqft	0.0%	0.0%	Discretionary	LO5Med	85.0%	TBD	0.2%	$207.08	$94.91	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	Building commissioning c
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM417	Vintage/existing building	Optimized HVAC flow and controls	7	0.01	0.00	0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$224.16	$123.52	0.37	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(	COM_RCX-All-XCELCO-2(
WA	Commercial	Healthcare	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	WCM418	No energy management system	Energy management system installed and programmed	3	0.09	0.00	0.00	$0.49	$0.09	$0.00	$0.00	$0.34	$0.37	sqft	5.0%	17.5%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$608.02	$719.54	1.82	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(	DL20_COM_SEM-Misc-2(
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM419	R-13	R-38	45	0.00	0.00	0.00	$1.11	$0.00	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$129.54	$89.68	0.0	RTF Wkbk - ComWeathe	RTF Wkbk - ComWeathe	N/A
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM420	R-11 or less	R-21	45	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.79	$0.87	sqft wall	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$111.69	$68.66	0.0	RTF Wkbk - ComWeathe	N/A	Building Energy Simulati
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Insulation - Ducting	A	WCM421	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$0.76	$0.00	$0.00	$0.00	$0.25	$0.28	sqft	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM422	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$110.51	$52.84	0.0	MA TRM - 2019-2021 - C	N/A	n/a
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM423	U-.5 or worse	U-.22 or better	45	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft window	0.0%	0.0%	Discretionary	Retro1Slow	84.8%	TBD	0.2%	$53.41	$0.00	0.0	RTF Wkbk - ComWeathe	N/A	n/a
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM424	Degrade performance	General cleaning and maintenance	3	751.49	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$1.80	$3.14	0.03	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM425	Degrade performance	General cleaning and maintenance	3	313.30	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	5.0%	10.0%	Discretionary	Retro20Fast	65.8%	TBD	0.2%	$4.40	$7.67	0.03	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM426	No control	Reset control installed	16	1,093.08	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$776.04	$853.64	BoilerCtrl	100.0%	100.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$109.57	$118.79	0.0	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM427	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$75.61	$83.17	BoilerCtrl	0.0%	10.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$142.31	$213.23	0.01	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM428	No control	Turndown control installed	15	1.02	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$1.77	$1.95	kbtuh heat	100.0%	100.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$226.92	$197.39	0.0	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM429	Average performance	Optimized burner controls	18	0.30	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.52	$0.57	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$170.49	$130.26	0.01	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-N	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM430	No damper	Damper installed	15	78.32	0.00	0.00	$1,863.83	$24.22	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$2,736.00	$1,213.01	0.13	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM431	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.17	$0.01	$0.00	$0.00	$0.06	$0.06	sqft	100.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$146.41	$80.04	0.0	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM432	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$150.57	$111.59	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM433	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM434	No insulation	Lines and condensate tank insulated	20	10.10	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$207.36	$207.93	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM435	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$203.97	$259.66	0.0	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM436	None	HRV installed	15	0.63	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.39	$1.53	CFM	100.0%	100.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$286.35	$143.17	0.0	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM437	Manual control	Programmable thermostat installed	11	18.50	0.00	0.00	$171.85	$5.00	$0.00	$0.00	$51.55	$56.71	Stat Unit	0.0%	0.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$1,346.06	$571.46	0.0	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM438	Manual control	Wi-Fi/interactive thermostat installed	5	0.08	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	10.0%	50.0%	Discretionary	RetroEven20	80.8%	TBD	0.2%	$327.92	$186.50	0.65	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM439	Standard laundry machine	Ozone laundry system	10	4,825.05	0.00	0.00	$21,708.53	$0.00	$214.80	$0.00	$2,500.00	$2,750.00	site	10.0%	20.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$497.54	$124.16	0.45	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	CNGC Data
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Commercial Clothes Washers - ENERGY STAR	A	WCM440	Standard laundry machine	ESTAR/High MEF unit installed	7.1	48.55	0.00	0.00	$443.39	$0.00	$33.48	$0.00	$133.02	$146.32	ClothesWashers	8.0%	20.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$419.07	$854.11	0.0	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV	RTF Wkbk - ComClothesV
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Motion Control Faucet	A	WCM441	Standard faucet	Motion activated faucet	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	perBldg	0.0%	0.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$289.11	$167.36	0.0	n/a	n/a	n/a
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Faucet Aerator	A	WCM442	2.5 GPM faucet	1.5 GPM faucet	10	36.96	0.00	0.00	$7.19	$14.39	$0.00	$0.00	$7.19	$7.91	faucet	0.0%	0.0%	Discretionary	Retro5Med	81.7%	TBD	0.2%	$423.62	$59.38	0.0	IL TRM - 4.3.2 - CI-HWE-L	DHW_AER-Water Heatin	IL TRM - 4.3.2 - CI-HWE-L
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Drainwater Heat Recovery	A	WCM443	None	Drain HR system installed	20	26.44	0.00	0.00	$852.02	$0.00	$0.00	$0.00	$255.61	$281.17	faucet	5.0%	10.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$2,639.75	$1,262.03	0.03	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe	MN TRM 3.1 - Drainpipe
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Efficient Dishwasher	A	WCM444	Standard unit	ESTAR unit	15	71.00	0.00	0.00	$854.34	$179.29	$0.00	$0.00	$854.34	$939.77	perBldg	55.0%	100.0%	Discretionary	Retro3Slow	84.2%	TBD	0.2%	$4,336.68	$2,029.01	0.0	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES	IL TRM - 4.2.6 - CI-FSE-ES
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCM445	3.5 GPM kitchen sprayer	2 GPM sprayer nozzle	4	24.96	0.00	0.00	$79.48	$91.03	$0.00	$0.00	$25.00	$27.50	KitchenFaucet	25.0%	65.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$4,299.82	$521.37	0.02	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl	RTF Wkbk - ComCookingl
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Central Controls	A	WCM446	No central controls	Central water boiler controls installed	15	1,277.88	0.00	0.00	$2,146.30	$0.00	$0.00	$0.00	$2,146.30	$2,360.93	perBldg	5.0%	5.0%	Discretionary	Retro12Med	75.4%	TBD	0.2%	$261.38	$290.01	0.0	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C	IL TRM - 4.3.8 - CI-HWE-C

WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCM447	None	Solar system installed	20	3.46	0.00	0.00	$296.24	$0.00	$0.57	$0.00	$88.87	$97.76	DHW kbtuh	1.0%	30.0%	Discretionary	Retro12Med	75.4% TBD	0.2%	$4,741.44	$2,317.88	6.83	AEO 2021 - Solar water h	AEO 2021 - Solar water h	AEO 2021 - Solar water h
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	WCM448	None/Standard ventilation	Fans Installed	10	919.62	0.00	0.00	$6,939.25	$248.44	$0.00	$0.00	$2,081.78	$2,289.95	Strat Fan	15.0%	25.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$1,300.77	$547.13	0.16	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-	IL TRM - 4.4.34 - CI-HVC-
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCM449	Standard kitchen hood	DCV/HUA vent hood	20	1,575.41	0.00	0.00	$1,212.69	$425.60	$0.00	$0.00	$1,212.69	$1,333.95	Kitch Hood	10.0%	20.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$386.78	$108.71	0.13	COOK_EXHD-Ventilation-	IL TRM - 4.2.16 - CI-FSE-V	COOK_EXHD-Ventilation-
WA	Commercial	Healthcare	New	Miscellaneous	Natural Gas	Pool Heater - Night Covers	A	WCM450	No cover	Night cover in place	5	0.03	0.00	0.00	$2.07	$0.02	$0.00	$0.00	$0.62	$0.68	sqft pool	100.0%	100.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$536.03	$305.05	0.0	PL_COV-Water Heating-S	CA eTRM - Pool Cover, C	CA eTRM - Pool Cover, C
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Building Automation System	A	WCM451	No control system	Automation system installed and programmed	15	0.08	0.00	0.00	$0.69	$0.04	$0.00	$0.00	$0.27	$0.30	sqft	10.0%	17.5%	Discretionary	Retro1Slow	84.8% TBD	0.2%	$184.41	$99.91	0.01	COM_EMS-All-XCELCO-2	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2
WA	Commercial	Healthcare	New	Water Heating	Natural Gas	Building Automation System	A	WCM452	No control system	Automation system installed and programmed	15	0.08	0.00	0.00	$0.69	$0.04	$0.00	$0.00	$0.27	$0.30	sqft	10.0%	17.5%	Discretionary	Retro1Slow	84.8% TBD	0.2%	$184.41	$99.91	0.0	COM_EMS-All-XCELCO-2	BEHAV_EIS-All-CPUC-201	COM_EMS-All-XCELCO-2
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	WCM453	Average system efficiency	Optimized system	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	sqft	30.0%	60.0%	Discretionary	Retro1Slow	84.8% TBD	0.2%	$291.29	$180.33	0.0	n/a	n/a	n/a
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCM454	New construction code	Optimized HVAC design and controls	10	0.11	0.00	0.00	$0.27	$0.06	$0.00	$0.00	$0.08	$0.09	sqft	100.0%	100.0%	Discretionary	LO5Med	85.0% TBD	0.2%	$207.03	$95.27	0.0	DL20_COM_CX-Refrig-20	Building commissioning c	COM_CX-All-AEG-5
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCM455	Vintage/existing building	Optimized HVAC flow and controls	5	0.00	0.00	0.00	$1.27	$0.00	$0.00	$0.00	$0.38	$0.42	sqft	0.0%	0.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Healthcare	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCM456	No energy management system	Energy management system installed and programmed	3	0.08	0.00	0.00	$0.49	$0.09	$0.00	$0.00	$0.15	$0.16	sqft	5.0%	17.5%	Discretionary	RetroEven20	80.8% TBD	0.2%	$566.39	$311.46	0.2	DL20_COM_SEM-Misc-2	DL20_COM_SEM-Misc-2	DL20_COM_SEM-Misc-2
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	WCM457	R-13	R-38	45	0.04	0.00	0.00	$1.11	$0.04	$0.00	$0.00	$0.90	$0.99	sqft roof	0.0%	36.4%	Discretionary	Retro3Slow	84.2% TBD	0.2%	$207.61	$128.40	0.07	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulati
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	WCM458	R-11 or less	R-21	45	0.00	0.00	0.00	$1.74	$0.00	$0.00	$0.00	$0.90	$0.99	sqft wall	60.0%	85.0%	Discretionary	Retro3Slow	84.2% TBD	0.2%	$176.40	$97.57	0.01	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulati
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	WCM459	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$1.52	$0.00	$0.00	$0.00	$0.51	$0.56	sqft	40.0%	60.0%	Discretionary	Retro5Med	81.7% TBD	0.2%	$113.75	$58.92	0.0	MA TRM - 2019-2021 - C	MEMD - MMD8.25.01.FE	Building Energy Simulati
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	WCM460	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.07	$0.00	$0.00	$0.00	$0.02	$0.02	sqft	15.0%	50.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$102.85	$45.17	0.0	MA TRM - 2019-2021 - C	RS Means Cost Calculato	Building Energy Simulati
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	WCM461	U-.5 or worse	U-.22 or better	45	0.04	0.00	0.00	$24.15	$0.04	$0.00	$0.00	$5.00	$5.50	sqft window	45.0%	100.0%	Discretionary	Retro1Slow	84.8% TBD	0.2%	$799.31	$243.75	0.02	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulati
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	WCM462	Degrade performance	General cleaning and maintenance	3	162.67	0.00	0.00	$0.82	$0.00	$0.00	$0.00	$0.82	$0.90	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8% TBD	0.2%	$8.71	$15.19	0.06	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	WCM463	Degrade performance	General cleaning and maintenance	3	69.26	0.00	0.00	$0.92	$0.00	$0.00	$0.00	$0.92	$1.01	1000 kBtuh Heat	20.0%	30.0%	Discretionary	Retro20Fast	65.8% TBD	0.2%	$20.50	$35.76	0.06	IL TRM - 4.4.31 - CI-HVC-	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-A
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	WCM464	No control	Reset control installed	16	236.61	0.00	0.00	$776.04	$0.00	$0.00	$0.00	$776.04	$853.64	BoilerCtrl	35.0%	55.0%	Discretionary	Retro5Med	81.7% TBD	0.2%	$531.32	$576.03	0.08	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B	IL TRM - 4.4.4 - CI-HVC-B
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	WCM465	Degrade performance	Cleaning and maintenance	6	137.45	0.00	0.00	$75.61	$0.00	$0.00	$0.00	$75.61	$83.17	BoilerCtrl	73.0%	100.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$150.30	$225.21	0.07	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-	IL TRM - 4.4.16 - CI-HVC-
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	WCM466	No control	Turndown control installed	15	0.22	0.00	0.00	$2.70	$0.00	$0.00	$0.00	$2.70	$2.97	kbtuh heat	25.0%	50.0%	Discretionary	Retro12Med	75.4% TBD	0.2%	$373.26	$414.14	0.1	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo	MN TRM 3.1 - Boiler Mo
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	WCM467	Average performance	Optimized burner controls	18	0.06	0.00	0.00	$0.91	$0.00	$0.00	$0.00	$0.81	$0.89	kBtuh heat	5.0%	85.0%	Discretionary	Retro3Slow	84.2% TBD	0.2%	$230.19	$226.19	0.0	IL TRM - 4.4.22 - CI-HVC-	GBLR_O2TRM-Heating-M	IL TRM - 4.4.22 - CI-HVC-
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	HVAC - Shut Off Damper	A	WCM468	No damper	Damper installed	15	17.31	0.00	0.00	$1,863.83	$21.98	$0.00	$0.00	$559.15	$615.06	BoilerCtrl	0.0%	75.0%	Discretionary	Retro12Med	75.4% TBD	0.2%	$11,829.87	$5,300.28	0.14	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-	IL TRM - 4.4.23 - CI-HVC-
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	WCM469	Constant ventilation	DCV enabled	15	0.02	0.00	0.00	$0.27	$0.03	$0.00	$0.00	$0.08	$0.09	sqft	55.0%	75.0%	Discretionary	Retro3Slow	84.2% TBD	0.2%	$157.69	$71.80	0.04	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN	VENT_DCV-Heating-7PLN
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	WCM470	None	Economizer installed	15	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	BoilerCtrl	15.0%	55.0%	Discretionary	Retro12Med	75.4% TBD	0.2%	$178.27	$175.95	0.0	IL TRM - 4.4.28 - CI-HVC-	n/a	n/a
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	WCM471	None	Tube inserts installed	5	0.00	0.00	0.00	$1.04	$0.00	$0.00	$0.00	$0.31	$0.34	sqft	0.0%	0.0%	Discretionary	Retro3Slow	84.2% TBD	0.2%	$289.11	$167.36	0.0	N/A	N/A	N/A
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	WCM472	No insulation	Lines and condenstate tank insulated	20	2.41	0.00	0.00	$15.19	$0.00	$0.00	$0.00	$15.27	$16.71	boiler pipe	30.0%	35.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$588.34	$589.95	0.07	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	WCM473	No insulation	Insulated water lines	20	4.60	0.00	0.00	$10.78	$0.00	$0.00	$0.00	$15.28	$5.49	boiler pipe	30.0%	40.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$211.97	$269.84	0.27	PGE Workpaper - SWWH	PGE Workpaper - SWWH	PGE Workpaper - SWWH
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	WCM474	None	HRV installed	15	0.24	0.00	0.00	$4.63	$0.00	$0.00	$0.00	$1.59	$1.75	CFM	5.0%	20.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$349.68	$193.94	0.86	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-	IL TRM - 4.4.27 - CI-HVC-
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	WCM475	Manual control	Programmable thermostat installed	11	7.59	0.00	0.00	$171.85	$8.17	$0.00	$0.00	$75.13	$82.64	Stat Unit	10.0%	30.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$3,548.09	$1,854.42	0.18	IL TRM - 4.4.48 - CI-HVC-	IL TRM - 4.4.48 - CI-HVC-	BEST
WA	Commercial	Lodging	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	WCM476	Manual control	Wi-Fi/interactive thermostat installed	5	0.01	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.12	$0.13	sqft	0.0%	55.0%	Discretionary	RetroEven20	80.8% TBD	0.2%	$339.08	$192.86	0.85	ComConnectedThermost	ComConnectedThermost	ComConnectedThermost
WA	Commercial	Lodging	Existing	Water Heating	Natural Gas	Water Heater - Ozone Laundry	A	WCM477	Standard laundry machine	Ozone laundry system	10	6,110.40	0.00	0.00	$21,708.53	$0.00	$214.80	$0.00	$2,500.00	$2,750.00	site	15.0%	45.0%	Discretionary	Retro12Med	75.4% TBD	0.2%	$453.04	$113.06	8.83	IL TRM - 4.3.6 - CI-HWE-C	IL TRM - 4.3.6 - CI-HWE-C	CNGC Data

WA	Commercial	Miscellaneous	New	Water Heating	Natural Gas	Water Heater - Pre-Rinse Spray Valve	A	WCH007D	1.5 GPM faucet aerator	2 GPM spray rinse valve	4	24.96	0.00	0.00	$79.48	$91.03	$ 0.00	$ 0.00	$ 0.00	$ 27.00	Kitchen faucet	25.0 %	65.0 % Discretionary	Retrofit	10 Yrs	75.4% TRC	0.2%	$ 4,207.82	$52.1.37	0.07	TF TF Wkbk - Com Cooking pdf TF Wkbk - Cook Cooking pdf
WA	Commercial	Miscellaneous	New	Water Heating	Natural Gas	Water Heater - Circulator Controls	A	WCH007E	Recirculation controls	Circulation water heater controls installed	15	97.72	0.00	0.00	$ 1,146.16	$0.00	$ 0.00	$ 0.00	$1,146.16	$1,146.16	per Bldg	5.0 %	15.0 % Discretionary	Retrofit	10 Yrs	75.4% TRC	0.2%	$ 3,191.57	$3,57.4.10	0.07	TF TF Wkbk - 4.1.8 - Circulator Controls pdf TF Wkbk - 5.1 HVAC Controls pdf
WA	Commercial	Miscellaneous	New	Water Heating	Natural Gas	Water Heater - Solar System	A	WCH007F	None	Solar water heater installed	2.0	3.4.6	0.00	0.00	$ 296.24	$0.00	$ 0.57	$ 0.00	$0.8.87	$ 97.76	Other kitchen	1.0 %	30.0 % Discretionary	Retrofit	10 Yrs	75.4% TRC	0.2%	$ 4,74.1.44	$1,31.7.88	4.00	ASD 20 21 - Solar water heater ASD 20 21 - Solar water heater
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Direct Fired Gas Fans (MAU)	A	WCH007G	None (Exhaust and vent flue loss	Fans installed	1.0	426.17	0.00	0.00	$ 6,939.25	$991.25	$ 0.00	$ 0.00	$11,78.96	$1,78.96.8	Strategy	15.0 %	25.0 % Discretionary	Retrofit and Equipment Failure	10 Yrs	80.4% TRC	0.2%	$ 2,614.11	$1,12.1.03	0.27	TF TF Wkbk - 4.4.24 - Direct Fired Gas Fans pdf TF Wkbk - 4.3.16 - Direct Fired Gas Fans pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Kitchen Hood - DCV/MUA	A	WCH007H	Standard kitchen hood	DCV/MUA vent hood	2.0	700.08	0.00	0.00	$ 1,212.69	$17.7.80	$ 0.00	$ 0.00	$1,2.12.69	$1,3.19.5	Kitchen Hood	35.0 %	35.0 % Discretionary	Retrofit and Equipment Failure	10 Yrs	80.4% TRC	0.2%	$88.9.12	$23.1.01	0.0	COCKE_DHD - Vent Hood Kitchen Hoods pdf TF TF Wkbk - 4.3.16 - Direct Fired Gas Fans pdf
WA	Commercial	Miscellaneous	New	Miscellaneous	Natural Gas	Pool Heater - Night Cover	A	WCH007I	No cover	Night cover in place	5	0.0.6	0.00	0.00	$2.25	$0.32	$ 0.00	$ 0.00	$ 0.32	$ 0.32	Night cover	100.0 %	100.0 % Discretionary	Retrofit and Equipment Failure	10 Yrs	80.4% TRC	0.2%	$54.2.89	$88.8.9	0.0	TF_CEV Water Heating SC Aug TRM - Pool Cover_C.E.Aug TRM - Pool Cover_C.E.pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Building Automation System	A	WCH007J	No control system	Automation system installed and programmed	15	0.0.4	0.00	0.00	$0.21	$0.04	$ 0.00	$ 0.00	$ 0.10	$ 0.11	HVAC	30.0 %	0.0 % Discretionary	Retrofit 20yrs	84.4% TRC	0.2%	$17.6.80	$11.3.11	0.0	COM_DHD-AIR CIRCULATO - 2HP.DHD_CIRCULATO - 2HP.pdf COM_DHD-AIR CIRCULATO - 2HP.pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Air Circulation Fan - Circulator	A	WCH007K	Average air circulation fan	Circulation fan installed and programmed	5	0.0.2	0.00	0.00	$0.06	$0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	HVAC	30.0 %	30.0 % Discretionary	Retrofit 20yrs	84.4% TRC	0.2%	$8.9.11	$2.6.7.8	0.0	COM_DHD-AIR CIRCULATO - 2HP.DHD_CIRCULATO - 2HP.pdf COM_DHD-AIR CIRCULATO - 2HP.pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Steam Equipment Miscellaneous Improvements	A	WCH008J	Average system efficiency	Optimized system	5	0.0.3	0.00	0.00	$0.08	$0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00	HVAC	30.0 %	30.0 % Discretionary	Retrofit 20yrs	84.4% TRC	0.2%	$8.9.11	$2.6.7.8	0.0	COM_DHD-AIR CIRCULATO - 2HP.DHD_CIRCULATO - 2HP.pdf COM_DHD-AIR CIRCULATO - 2HP.pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Commissioning - HVAC	A	WCH008Q	New construction cost	Optimized HVAC design and controls	10	0.0.2	0.00	0.00	$0.27	$0.02	$ 0.00	$ 0.00	$ 0.00	$ 0.00	HVAC	100.0 %	100.0 % Discretionary	LCS 94.4	15 yrs	80.4% TRC	0.2%	$19.7.11	$9.9.54	0.0	COM_DHD-AIR CIRCULATO - 2HP.DHD_CIRCULATO - 2HP.pdf COM_DHD-AIR CIRCULATO - 2HP.pdf
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Retrocommissioning - HVAC	A	WCH008R	Average existing building	Optimized HVAC flow and controls	5	0.0.0	0.00	0.00	$1.27	$0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.42	HVAC	0.0 %	0.0 % Discretionary	Retrofit and Equipment Failure	10 Yrs	80.4% TRC	0.2%	$28.9.11	$14.7.8	0.0	N/A N/A
WA	Commercial	Miscellaneous	New	Space Heating	Natural Gas	Strategic Energy Management	A	WCH008M	Average energy management system	Energy management system installed and programmed	3	0.04	0.00	0.00	$0.20	$0.06	$ 0.00	$ 0.00	$ 0.06	$0.07	HVAC	0.0 %	0.0 % Discretionary	Retrofit and Equipment Failure	10 Yrs	80.4% TRC	0.2%	$58.9.80	$28.6.1	0.0	COM_DHD_SEM-Misc-2 DLSB_COM_SEM-Misc-2 DLSB_COM_SEM-Misc-2

Measure

State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Measure Identifier	Baseline Definition	Efficient Definition
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Furnace	A	IE1	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Boiler	A	IE2	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Unit Heater	A	IE3	Standard	Infrared Radiant
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Furnace	A	IE4	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Boiler	A	IE5	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Unit Heater	A	IE6	Standard	Infrared Radiant
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Furnace	A	IE7	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Boiler	A	IE8	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Unit Heater	A	IE9	Standard	Infrared Radiant
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Furnace	A	IE10	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Boiler	A	IE11	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Unit Heater	A	IE12	Standard	Infrared Radiant
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Furnace	A	IE13	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Boiler	A	IE14	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Unit Heater	A	IE15	Standard	Infrared Radiant
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Furnace	A	IE16	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Boiler	A	IE17	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Unit Heater	A	IE18	Standard	Infrared Radiant
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Furnace	A	IE19	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Boiler	A	IE20	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Unit Heater	A	IE21	Standard	Infrared Radiant
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Furnace	A	IE22	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Boiler	A	IE23	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Unit Heater	A	IE24	Standard	Infrared Radiant
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Furnace	A	IE25	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Boiler	A	IE26	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Unit Heater	A	IE27	Standard	Infrared Radiant
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Furnace	A	IE28	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Boiler	A	IE29	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Unit Heater	A	IE30	Standard	Infrared Radiant
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Furnace	A	IE31	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Boiler	A	IE32	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Unit Heater	A	IE33	Standard	Infrared Radiant
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Furnace	A	IE34	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Boiler	A	IE35	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Unit Heater	A	IE36	Standard	Infrared Radiant
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Furnace	A	IE37	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Boiler	A	IE38	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Unit Heater	A	IE39	Standard	Infrared Radiant
WA	Industrial	Instruments	New	Space Heating	Natural Gas	Furnace	A	IE40	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Instruments	New	Space Heating	Natural Gas	Boiler	A	IE41	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Instruments	New	Space Heating	Natural Gas	Unit Heater	A	IE42	Standard	Infrared Radiant
WA	Industrial	Wood and Lumber Products	Existing	Space Heating	Natural Gas	Furnace	A	IE43	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Wood and Lumber Products	Existing	Space Heating	Natural Gas	Boiler	A	IE44	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Wood and Lumber Products	Existing	Space Heating	Natural Gas	Unit Heater	A	IE45	Standard	Infrared Radiant
WA	Industrial	Wood and Lumber Products	New	Space Heating	Natural Gas	Furnace	A	IE46	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Wood and Lumber Products	New	Space Heating	Natural Gas	Boiler	A	IE47	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Wood and Lumber Products	New	Space Heating	Natural Gas	Unit Heater	A	IE48	Standard	Infrared Radiant
WA	Industrial	Other Industrial	Existing	Space Heating	Natural Gas	Furnace	A	IE49	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Other Industrial	Existing	Space Heating	Natural Gas	Boiler	A	IE50	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Other Industrial	Existing	Space Heating	Natural Gas	Unit Heater	A	IE51	Standard	Infrared Radiant
WA	Industrial	Other Industrial	New	Space Heating	Natural Gas	Furnace	A	IE52	AFUE 80% (Standard)	AFUE 96%
WA	Industrial	Other Industrial	New	Space Heating	Natural Gas	Boiler	A	IE53	AFUE 80% (Standard)	AFUE 97%
WA	Industrial	Other Industrial	New	Space Heating	Natural Gas	Unit Heater	A	IE54	Standard	Infrared Radiant

2021 Measure Information (Unstacked)

Measure Identifier	Measure Life (Years)	Unit Energy Savings (Annual kWh or therm)	Unit Summer Peak Savings (kW or n/a)	Unit Winter Peak Savings (kW or n/a)	Unit Incremental Cost (2019$)	Non-Energy Impacts (2019$)	Incr. O&M (2019$)	RVT-Only NEIs (2019$)	Incentive (2019$)	Admin Cost (2019$)
IE1	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE2	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE3	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE4	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE5	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE6	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE7	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE8	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE9	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE10	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE11	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE12	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE13	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE14	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE15	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE16	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE17	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE18	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE19	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE20	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE21	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE22	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE23	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE24	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE25	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE26	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE27	15	0.00	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE28	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE29	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE30	15	0.00	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE31	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE32	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE33	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE34	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE35	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE36	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE37	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE38	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE39	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE40	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE41	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE42	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE43	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE44	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE45	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE46	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE47	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE48	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE49	23	1,443.55	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE50	25	6,227.32	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE51	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81
IE52	23	1,443.51	0.00	0.00	$1,826.85	-$10.15	$0.00	$0.00	$368.32	$405.15
IE53	25	6,223.58	0.00	0.00	$14,611.16	$0.00	$0.00	$0.00	$13,751.68	$15,126.85
IE54	15	43,660.72	0.00	0.00	$85,063.63	$3,587.78	$0.00	$0.00	$25,408.01	$27,948.81

2021 Measure Information (Unstacked) (continued) / **Sources**

Measure Identifier	Unit of Measure	Base Saturation	Applicability	Discretionary/Lost Opportunity	Ramp Rate Name	20 Year Technical Achievable %	Assigned Loadshape	T&D Losses	TRC LCOE ($/kWh or $/therm)	TRC LCOE Bundle	UCT LCOE ($/kWh or $/therm)	UCT LCOE Bundle	Cumulative Achievable Technical Potential in 2021 (MWh or mTherms)	Lifetime Source	Costs Source	Savings Source
IE1	400 kBtu/hr	33.5%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE2	800 kBtu/hr	41.9%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.08	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE3	125 kBtu/Hr	21.8%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.01	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE4	400 kBtu/hr	33.5%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE5	800 kBtu/hr	41.9%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE6	125 kBtu/Hr	21.8%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE7	400 kBtu/hr	24.4%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE8	800 kBtu/hr	12.1%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.21	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE9	125 kBtu/Hr	29.6%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.02	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE10	400 kBtu/hr	24.4%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE11	800 kBtu/hr	12.1%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE12	125 kBtu/Hr	29.6%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.01	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE13	400 kBtu/hr	42.6%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE14	800 kBtu/hr	2.8%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.02	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE15	125 kBtu/Hr	49.1%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE16	400 kBtu/hr	42.6%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE17	800 kBtu/hr	2.8%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE18	125 kBtu/Hr	49.1%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE19	400 kBtu/hr	28.8%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE20	800 kBtu/hr	9.0%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.02	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE21	125 kBtu/Hr	25.2%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE22	400 kBtu/hr	28.8%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE23	800 kBtu/hr	9.0%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE24	125 kBtu/Hr	25.2%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE25	400 kBtu/hr	0.3%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE26	800 kBtu/hr	1.3%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE27	125 kBtu/Hr	0.0%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$94,512.14		$65.04		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE28	400 kBtu/hr	0.3%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE29	800 kBtu/hr	1.3%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE30	125 kBtu/Hr	0.0%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$94,512.14		$65.04		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE31	400 kBtu/hr	38.0%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE32	800 kBtu/hr	2.5%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE33	125 kBtu/Hr	45.7%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE34	400 kBtu/hr	38.0%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE35	800 kBtu/hr	2.5%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE36	125 kBtu/Hr	45.7%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE37	400 kBtu/hr	39.7%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE38	800 kBtu/hr	3.3%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.09	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE39	125 kBtu/Hr	38.9%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.01	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE40	400 kBtu/hr	39.7%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE41	800 kBtu/hr	3.3%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE42	125 kBtu/Hr	38.9%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE43	400 kBtu/hr	49.1%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE44	800 kBtu/hr	29.1%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.02	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE45	125 kBtu/Hr	11.3%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE46	400 kBtu/hr	49.1%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE47	800 kBtu/hr	29.1%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE48	125 kBtu/Hr	11.3%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.0	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE49	400 kBtu/hr	46.6%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.35		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE50	800 kBtu/hr	6.9%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.52		$273.38		0.18	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE51	125 kBtu/Hr	32.4%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.02	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I
IE52	400 kBtu/hr	46.6%	30.0%	Turnover	LO12Med	25.4%	TBD	0.2%	$92.19		$33.36		0.0	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	AEG BEST
IE53	800 kBtu/hr	6.9%	100.0%	Turnover	LO50Fast	85.0%	TBD	0.2%	$309.71		$273.54		0.01	EIA 2018 Tech Forecast	EIA 2018 Tech Forecast	GBLR-Heating-EIA14-201
IE54	125 kBtu/Hr	32.4%	100.0%	Turnover	LO12Med	84.7%	TBD	0.2%	$294.03		$103.50		0.01	IL TRM - 4.4.12 - CI-HVC-I	CNGC Program Data	IL TRM - 4.4.12 - CI-HVC-I

State	Sector	Segment	Vintage	End Use	Fuel	Measure	Option	Measure Identifier	Baseline Definition	Efficient Definition	Measure Life (Years)
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM1	R-13	R-38	45
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM2	R-11 or less	R-21	45
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM3	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM4	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM5	U-.5 or worse	U-.22 or better	45
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM6	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM7	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM8	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM9	No control	Reset control installed	16
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM10	No control	Reset control installed	16
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM11	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Food Products	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM12	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM13	No control	Turndown control installed	15
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM14	No control	Turndown control installed	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM15	Average performance	Optimized burner controls	18
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM16	Average performance	Optimized burner controls	18
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM17	Constant ventilation	DCV enabled	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM18	None	Economizer installed	15
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM19	None	Economizer installed	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM20	None	Tube inserts installed	5
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM21	None	HRV installed	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM22	Manual control	Programmable thermostat installed	11
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM23	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM24	None/Standard ventilation	Fans installed	10
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM25	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM26	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM27	No insulation	Insulated water lines	20
WA	Industrial	Food Products	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM28	No insulation	Insulated water lines	20
WA	Industrial	Food Products	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM29	No insulation	Insulated process fluid lines	20
WA	Industrial	Food Products	Existing	Process	Natural Gas	Process Heat Recovery	A	IM30	No HR system	HR system installed	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Building Automation System	A	IM31	No control system	Automation system installed and programmed	15
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM32	Average system efficiency	Optimized system	5
WA	Industrial	Food Products	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM33	Average system efficiency	Optimized system	5
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM34	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	Existing	Process	Natural Gas	Strategic Energy Management	A	IM35	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM36	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Commissioning	A	IM37	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Food Products	Existing	Process	Natural Gas	Commissioning	A	IM38	New construction code	Optimized process design and controls	10
WA	Industrial	Food Products	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM39	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Food Products	Existing	Process	Natural Gas	Retrocommissioning	A	IM40	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM41	R-13	R-38	45
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM42	R-11 or less	R-21	45
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM43	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Food Products	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM44	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM45	U-.5 or worse	U-.22 or better	45
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM46	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM47	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM48	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM49	No control	Reset control installed	16
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM50	No control	Reset control installed	16
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM51	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Food Products	New	Process	Natural Gas	Steam Trap Maintenance	A	IM52	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM53	No control	Turndown control installed	15
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM54	No control	Turndown control installed	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM55	Average performance	Optimized burner controls	18
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM56	Average performance	Optimized burner controls	18
WA	Industrial	Food Products	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM57	Constant ventilation	DCV enabled	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM58	None	Economizer installed	15
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM59	None	Economizer installed	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM60	None	Tube inserts installed	5
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM61	None	HRV installed	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM62	Manual control	Programmable thermostat installed	11
WA	Industrial	Food Products	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM63	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM64	None/Standard ventilation	Fans installed	10
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM65	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM66	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM67	No insulation	Insulated water lines	20
WA	Industrial	Food Products	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM68	No insulation	Insulated water lines	20
WA	Industrial	Food Products	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM69	No insulation	Insulated process fluid lines	20
WA	Industrial	Food Products	New	Process	Natural Gas	Process Heat Recovery	A	IM70	No HR system	HR system installed	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Building Automation System	A	IM71	No control system	Automation system installed and programmed	15
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM72	Average system efficiency	Optimized system	5
WA	Industrial	Food Products	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM73	Average system efficiency	Optimized system	5
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM74	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	New	Process	Natural Gas	Strategic Energy Management	A	IM75	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM76	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Commissioning	A	IM77	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Food Products	New	Process	Natural Gas	Commissioning	A	IM78	New construction code	Optimized process design and controls	10
WA	Industrial	Food Products	New	Space Heating	Natural Gas	Retrocommissioning	A	IM79	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Food Products	New	Process	Natural Gas	Retrocommissioning	A	IM80	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM81	R-13	R-38	45
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM82	R-11 or less	R-21	45
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM83	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM84	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM85	U-.5 or worse	U-.22 or better	45
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM86	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM87	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM88	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM89	No control	Reset control installed	16
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM90	No control	Reset control installed	16
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM91	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM92	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM93	No control	Turndown control installed	15
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM94	No control	Turndown control installed	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM95	Average performance	Optimized burner controls	18
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM96	Average performance	Optimized burner controls	18
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM97	Constant ventilation	DCV enabled	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM98	None	Economizer installed	15
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM99	None	Economizer installed	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM100	None	Tube inserts installed	5
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM101	None	HRV installed	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM102	Manual control	Programmable thermostat installed	11
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM103	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM104	None/Standard ventilation	Fans installed	10
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM105	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM106	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM107	No insulation	Insulated water lines	20
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM108	No insulation	Insulated water lines	20
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM109	No insulation	Insulated process fluid lines	20
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Process Heat Recovery	A	IM110	No HR system	HR system installed	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Building Automation System	A	IM111	No control system	Automation system installed and programmed	15
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM112	Average system efficiency	Optimized system	5
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM113	Average system efficiency	Optimized system	5
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM114	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Strategic Energy Management	A	IM115	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM116	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Commissioning	A	IM117	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Commissioning	A	IM118	New construction code	Optimized process design and controls	10
WA	Industrial	Agriculture	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM119	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Agriculture	Existing	Process	Natural Gas	Retrocommissioning	A	IM120	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM121	R-13	R-38	45
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM122	R-11 or less	R-21	45
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM123	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM124	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM125	U-.5 or worse	U-.22 or better	45
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM126	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM127	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM128	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM129	No control	Reset control installed	16
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM130	No control	Reset control installed	16
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM131	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Agriculture	New	Process	Natural Gas	Steam Trap Maintenance	A	IM132	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM133	No control	Turndown control installed	15
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM134	No control	Turndown control installed	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM135	Average performance	Optimized burner controls	18
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM136	Average performance	Optimized burner controls	18
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM137	Constant ventilation	DCV enabled	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM138	None	Economizer installed	15
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM139	None	Economizer installed	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM140	None	Tube inserts installed	5
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM141	None	HRV installed	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM142	Manual control	Programmable thermostat installed	11
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM143	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM144	None/Standard ventilation	Fans installed	10
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM145	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM146	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM147	No insulation	Insulated water lines	20
WA	Industrial	Agriculture	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM148	No insulation	Insulated water lines	20
WA	Industrial	Agriculture	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM149	No insulation	Insulated process fluid lines	20
WA	Industrial	Agriculture	New	Process	Natural Gas	Process Heat Recovery	A	IM150	No HR system	HR system installed	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Building Automation System	A	IM151	No control system	Automation system installed and programmed	15
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM152	Average system efficiency	Optimized system	5
WA	Industrial	Agriculture	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM153	Average system efficiency	Optimized system	5
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM154	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	New	Process	Natural Gas	Strategic Energy Management	A	IM155	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM156	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Commissioning	A	IM157	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Agriculture	New	Process	Natural Gas	Commissioning	A	IM158	New construction code	Optimized process design and controls	10
WA	Industrial	Agriculture	New	Space Heating	Natural Gas	Retrocommissioning	A	IM159	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Agriculture	New	Process	Natural Gas	Retrocommissioning	A	IM160	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM161	R-13	R-38	45
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM162	R-11 or less	R-21	45
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM163	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM164	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM165	U-.5 or worse	U-.22 or better	45
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM166	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM167	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM168	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM169	No control	Reset control installed	16
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM170	No control	Reset control installed	16
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM171	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM172	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM173	No control	Turndown control installed	15
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM174	No control	Turndown control installed	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM175	Average performance	Optimized burner controls	18
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM176	Average performance	Optimized burner controls	18
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM177	Constant ventilation	DCV enabled	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM178	None	Economizer installed	15
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM179	None	Economizer installed	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM180	None	Tube inserts installed	5
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM181	None	HRV installed	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM182	Manual control	Programmable thermostat installed	11
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM183	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM184	None/Standard ventilation	Fans installed	10
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM185	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM186	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM187	No insulation	Insulated water lines	20
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM188	No insulation	Insulated water lines	20
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM189	No insulation	Insulated process fluid lines	20
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Process Heat Recovery	A	IM190	No HR system	HR system installed	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Building Automation System	A	IM191	No control system	Automation system installed and programmed	15
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM192	Average system efficiency	Optimized system	5
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM193	Average system efficiency	Optimized system	5
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM194	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Strategic Energy Management	A	IM195	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM196	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Commissioning	A	IM197	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Commissioning	A	IM198	New construction code	Optimized process design and controls	10
WA	Industrial	Primary Metals	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM199	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Primary Metals	Existing	Process	Natural Gas	Retrocommissioning	A	IM200	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM201	R-13	R-38	45
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM202	R-11 or less	R-21	45
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM203	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM204	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM205	U-.5 or worse	U-.22 or better	45
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM206	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM207	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM208	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM209	No control	Reset control installed	16
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM210	No control	Reset control installed	16
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM211	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Primary Metals	New	Process	Natural Gas	Steam Trap Maintenance	A	IM212	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM213	No control	Turndown control installed	15
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM214	No control	Turndown control installed	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM215	Average performance	Optimized burner controls	18
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM216	Average performance	Optimized burner controls	18
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM217	Constant ventilation	DCV enabled	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM218	None	Economizer installed	15
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM219	None	Economizer installed	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM220	None	Tube inserts installed	5

Measure Identifier	Unit Energy Savings (Annual kWh or therm)	Unit Summer Peak Savings (kW or n/a)	Unit Winter Peak Savings (kW or n/a)	Unit Incremental Cost (2019$)	Non-Energy Impacts (2019$)	Incr. O&M (2019$)	RVT-Only NEIs (2019$)	Incentive (2019$)	Admin Cost (2019$)	Unit of Measure	Base Saturation	Applicability	Discretionary/Lost Opportunity	Ramp Rate Name	20 Year Technical Achievable %	Assigned Loadshape	T&D Losses	TRC LCOE ($/kWh or $/therm)	TRC LCOE Bundle	UCT LCOE ($/kWh or $/therm)	UCT LCOE Bundle	Cumulative Achievable Technical Potential in 2021 (MWh or mTherms)	Lifetime Source	Costs Source	Savings Source
IM1	0.08	0.00	0.00	$1.11	$0.07	$0.00	$0.00	$0.55		sqft	60.0%	100.0%	Retrofit	Retro3Slow	81.9%	TBD	0.2%	$154.06		$62.20		1.29	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulatio
IM2	0.02	0.00	0.00	$0.33	$0.02	$0.00	$0.00	$0.17		sqft	60.0%	100.0%	Retrofit	Retro3Slow	81.9%	TBD	0.2%	$102.15		$50.08		0.28	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulatio
IM3	0.00	0.00	0.00	$1.52	$0.00	$0.00	$0.00	$0.76		sqft	40.0%	60.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$181.96		$115.10		0.0	MA TRM - 2019-2021 - C(	MEMD - MMD8.25.01.FE	Building Energy Simulatio
IM4	0.00	0.00	0.00	$0.07	$0.00	$0.00	$0.00	$0.04		sqft	15.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$115.72		$72.91		0.02	MA TRM - 2019-2021 - C(	RS Means Cost Calculato	Building Energy Simulatio
IM5	0.01	0.00	0.00	$0.23	$0.01	$0.00	$0.00	$0.11		sqft	45.0%	100.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$94.38		$48.52		0.02	RTF Wkbk - ComWeather	RTF Wkbk - ComWeather	Building Energy Simulatio
IM6	0.96	0.00	0.00	$0.11	$0.00	$0.00	$0.00	$0.05		employee	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$25.02		$20.09		0.02	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-
IM7	34.75	0.00	0.00	$0.11	$0.00	$0.00	$0.00	$0.05		sqft	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$25.02		$20.09		1.5	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-	IL TRM - 4.3.10 - CI-HWE-
IM8	0.01	0.00	0.00	$0.02	$0.00	$0.00	$0.00	$0.01		sqft	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$453.52		$364.20		0.0	IL TRM - 4.4.31 - CI-HVC-I	MN TRM 3.1 - Forced-Air	MN TRM v3.1 - Forced-Ai
IM9	3.48	0.00	0.00	$132.97	$0.00	$0.00	$0.00	$66.48		employee	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$205.32		$134.82		0.03	IL TRM - 4.4.4 - CI-HVC-BI	IL TRM - 4.4.4 - CI-HVC-BI	IL TRM - 4.4.4 - CI-HVC-B
IM10	63.18	0.00	0.00	$132.97	$0.00	$0.00	$0.00	$66.48		sqft	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$205.32		$134.82		1.32	IL TRM - 4.4.4 - CI-HVC-BI	IL TRM - 4.4.4 - CI-HVC-BI	XCEL CO 2019-2020 DSM
IM11	1.23	0.00	0.00	$25.24	$0.00	$0.00	$0.00	$12.62		employee	73.0%	85.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$118.84		$90.06		0.01	IL TRM - 4.4.16 - CI-HVC-S	IL TRM - 4.4.16 - CI-HVC-S	IL TRM - 4.4.16 - CI-HVC-S
IM12	44.64	0.00	0.00	$25.24	$0.00	$0.00	$0.00	$12.62		sqft	73.0%	85.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$118.84		$90.06		0.52	IL TRM - 4.4.16 - CI-HVC-S	IL TRM - 4.4.16 - CI-HVC-S	IL TRM - 4.4.16 - CI-HVC-S
IM13	1.31	0.00	0.00	$361.01	$0.00	$0.00	$0.00	$180.50		employee	35.0%	50.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$775.66		$514.58		0.02	MN TRM 3.1 - Boiler Moc	MN TRM 3.1 - Boiler Mod	MN TRM 3.1 - Boiler Moc
IM14	47.39	0.00	0.00	$361.01	$0.00	$0.00	$0.00	$180.50		sqft	35.0%	50.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$775.66		$514.58		1.51	MN TRM 3.1 - Boiler Moc	MN TRM 3.1 - Boiler Mod	MN TRM 3.1 - Boiler Moc
IM15	0.38	0.00	0.00	$121.29	$0.00	$0.00	$0.00	$60.64		employee	5.0%	85.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$745.96		$480.50		0.0	IL TRM - 4.4.22 - CI-HVC-(	GBLR_O2TRM-Heating-MI	IL TRM - 4.4.22 - CI-HVC-(
IM16	13.74	0.00	0.00	$121.29	$0.00	$0.00	$0.00	$60.64		sqft	5.0%	85.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$745.96		$480.50		0.12	IL TRM - 4.4.22 - CI-HVC-(	GBLR_O2TRM-Heating-MI	IL TRM - 4.4.22 - CI-HVC-(

WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM221	None	HRV installed	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM222	Manual control	Programmable thermostat installed	11
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM223	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM224	None/Standard ventilation	Fans installed	10
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM225	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM226	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM227	No insulation	Insulated water lines	20
WA	Industrial	Primary Metals	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM228	No insulation	Insulated water lines	20
WA	Industrial	Primary Metals	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM229	No insulation	Insulated process fluid lines	20
WA	Industrial	Primary Metals	New	Process	Natural Gas	Process Heat Recovery	A	IM230	No HR system	HR system installed	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Building Automation System	A	IM231	No control system	Automation system installed and programmed	15
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM232	Average system efficiency	Optimized system	5
WA	Industrial	Primary Metals	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM233	Average system efficiency	Optimized system	5
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM234	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	New	Process	Natural Gas	Strategic Energy Management	A	IM235	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM236	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Commissioning	A	IM237	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Primary Metals	New	Process	Natural Gas	Commissioning	A	IM238	New construction code	Optimized process design and controls	10
WA	Industrial	Primary Metals	New	Space Heating	Natural Gas	Retrocommissioning	A	IM239	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Primary Metals	New	Process	Natural Gas	Retrocommissioning	A	IM240	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM241	R-13	R-38	45
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM242	R-11 or less	R-21	45
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM243	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM244	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM245	U-.5 or worse	U-.22 or better	45
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM246	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM247	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM248	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM249	No control	Reset control installed	16
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM250	No control	Reset control installed	16
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM251	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM252	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM253	No control	Turndown control installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM254	No control	Turndown control installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM255	Average performance	Optimized burner controls	18
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM256	Average performance	Optimized burner controls	18
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM257	Constant ventilation	DCV enabled	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM258	None	Economizer installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM259	None	Economizer installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM260	None	Tube inserts installed	5
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM261	None	HRV installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM262	Manual control	Programmable thermostat installed	11
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM263	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM264	None/Standard ventilation	Fans installed	10
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM265	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM266	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM267	No insulation	Insulated water lines	20
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM268	No insulation	Insulated water lines	20
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM269	No insulation	Insulated process fluid lines	20
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Process Heat Recovery	A	IM270	No HR system	HR system installed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Building Automation System	A	IM271	No control system	Automation system installed and programmed	15
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM272	Average system efficiency	Optimized system	5
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM273	Average system efficiency	Optimized system	5
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM274	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Strategic Energy Management	A	IM275	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM276	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Commissioning	A	IM277	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Commissioning	A	IM278	New construction code	Optimized process design and controls	10
WA	Industrial	Stone, Clay, and Glass	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM279	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Stone, Clay, and Glass	Existing	Process	Natural Gas	Retrocommissioning	A	IM280	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM281	R-13	R-38	45
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM282	R-11 or less	R-21	45
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM283	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM284	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM285	U-.5 or worse	U-.22 or better	45
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM286	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM287	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM288	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM289	No control	Reset control installed	16
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM290	No control	Reset control installed	16
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM291	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Steam Trap Maintenance	A	IM292	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM293	No control	Turndown control installed	15
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM294	No control	Turndown control installed	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM295	Average performance	Optimized burner controls	18
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM296	Average performance	Optimized burner controls	18
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM297	Constant ventilation	DCV enabled	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM298	None	Economizer installed	15
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM299	None	Economizer installed	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM300	None	Tube inserts installed	5
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM301	None	HRV installed	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM302	Manual control	Programmable thermostat installed	11
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM303	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM304	None/Standard ventilation	Fans installed	10
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM305	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM306	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM307	No insulation	Insulated water lines	20
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM308	No insulation	Insulated water lines	20
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM309	No insulation	Insulated process fluid lines	20
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Process Heat Recovery	A	IM310	No HR system	HR system installed	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Building Automation System	A	IM311	No control system	Automation system installed and programmed	15
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM312	Average system efficiency	Optimized system	5
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM313	Average system efficiency	Optimized system	5
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM314	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Strategic Energy Management	A	IM315	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM316	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Commissioning	A	IM317	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Commissioning	A	IM318	New construction code	Optimized process design and controls	10
WA	Industrial	Stone, Clay, and Glass	New	Space Heating	Natural Gas	Retrocommissioning	A	IM319	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Stone, Clay, and Glass	New	Process	Natural Gas	Retrocommissioning	A	IM320	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM321	R-13	R-38	45
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM322	R-11 or less	R-21	45
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM323	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM324	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM325	U-.5 or worse	U-.22 or better	45
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM326	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM327	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM328	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM329	No control	Reset control installed	16
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM330	No control	Reset control installed	16
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM331	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM332	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM333	No control	Turndown control installed	15
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM334	No control	Turndown control installed	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM335	Average performance	Optimized burner controls	18
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM336	Average performance	Optimized burner controls	18
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM337	Constant ventilation	DCV enabled	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM338	None	Economizer installed	15
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM339	None	Economizer installed	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM340	None	Tube inserts installed	5
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM341	None	HRV installed	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM342	Manual control	Programmable thermostat installed	11
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM343	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM344	None/Standard ventilation	Fans installed	10
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM345	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM346	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM347	No insulation	Insulated water lines	20
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM348	No insulation	Insulated water lines	20
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM349	No insulation	Insulated process fluid lines	20
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Process Heat Recovery	A	IM350	No HR system	HR system installed	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Building Automation System	A	IM351	No control system	Automation system installed and programmed	15
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM352	Average system efficiency	Optimized system	5
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM353	Average system efficiency	Optimized system	5
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM354	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Strategic Energy Management	A	IM355	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM356	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Commissioning	A	IM357	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Commissioning	A	IM358	New construction code	Optimized process design and controls	10
WA	Industrial	Petroleum	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM359	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Petroleum	Existing	Process	Natural Gas	Retrocommissioning	A	IM360	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM361	R-13	R-38	45
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM362	R-11 or less	R-21	45
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM363	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM364	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM365	U-.5 or worse	U-.22 or better	45
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM366	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM367	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM368	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM369	No control	Reset control installed	16
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM370	No control	Reset control installed	16
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM371	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Petroleum	New	Process	Natural Gas	Steam Trap Maintenance	A	IM372	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM373	No control	Turndown control installed	15
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM374	No control	Turndown control installed	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM375	Average performance	Optimized burner controls	18
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM376	Average performance	Optimized burner controls	18
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM377	Constant ventilation	DCV enabled	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM378	None	Economizer installed	15
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM379	None	Economizer installed	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM380	None	Tube inserts installed	5
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM381	None	HRV installed	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM382	Manual control	Programmable thermostat installed	11
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM383	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM384	None/Standard ventilation	Fans installed	10
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM385	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM386	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM387	No insulation	Insulated water lines	20
WA	Industrial	Petroleum	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM388	No insulation	Insulated water lines	20
WA	Industrial	Petroleum	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM389	No insulation	Insulated process fluid lines	20
WA	Industrial	Petroleum	New	Process	Natural Gas	Process Heat Recovery	A	IM390	No HR system	HR system installed	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Building Automation System	A	IM391	No control system	Automation system installed and programmed	15
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM392	Average system efficiency	Optimized system	5
WA	Industrial	Petroleum	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM393	Average system efficiency	Optimized system	5
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM394	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	New	Process	Natural Gas	Strategic Energy Management	A	IM395	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM396	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Commissioning	A	IM397	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Petroleum	New	Process	Natural Gas	Commissioning	A	IM398	New construction code	Optimized process design and controls	10
WA	Industrial	Petroleum	New	Space Heating	Natural Gas	Retrocommissioning	A	IM399	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Petroleum	New	Process	Natural Gas	Retrocommissioning	A	IM400	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM401	R-13	R-38	45
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM402	R-11 or less	R-21	45
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM403	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM404	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM405	U-.5 or worse	U-.22 or better	45
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM406	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM407	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM408	Degrade performance	General cleaning and maintenance	3
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM409	No control	Reset control installed	16
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM410	No control	Reset control installed	16
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM411	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM412	Degrade performance	Cleaning and maintenance	6
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM413	No control	Turndown control installed	15
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - High Turndown	A	IM414	No control	Turndown control installed	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM415	Average performance	Optimized burner controls	18
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM416	Average performance	Optimized burner controls	18
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM417	Constant ventilation	DCV enabled	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM418	None	Economizer installed	15
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM419	None	Economizer installed	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM420	None	Tube inserts installed	5
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM421	None	HRV installed	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Thermostat - Programmable	A	IM422	Manual control	Programmable thermostat installed	11
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM423	Manual control	Wi-Fi/interactive thermostat installed	5
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM424	None/Standard ventilation	Fans installed	10
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM425	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM426	No insulation	Lines and condenstate tank insulated	20
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM427	No insulation	Insulated water lines	20
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM428	No insulation	Insulated water lines	20
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM429	No insulation	Insulated process fluid lines	20
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Process Heat Recovery	A	IM430	No HR system	HR system installed	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Building Automation System	A	IM431	No control system	Automation system installed and programmed	15
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM432	Average system efficiency	Optimized system	5
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Steam System Efficiency Improvements	A	IM433	Average system efficiency	Optimized system	5
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Strategic Energy Management	A	IM434	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Strategic Energy Management	A	IM435	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Paper and Printing	Existing	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM436	No energy management system	Energy management system installed and programmed	5
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Commissioning	A	IM437	New construction code	Optimized HVAC design and controls	10
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Commissioning	A	IM438	New construction code	Optimized process design and controls	10
WA	Industrial	Paper and Printing	Existing	Space Heating	Natural Gas	Retrocommissioning	A	IM439	Vintage/existing building	Optimized HVAC flow and controls	5
WA	Industrial	Paper and Printing	Existing	Process	Natural Gas	Retrocommissioning	A	IM440	Vintage/existing building	Optimized process design and controls	5
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM441	R-13	R-38	45
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM442	R-11 or less	R-21	45
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Insulation - Ducting	A	IM443	~2°F thermal losses	50% reduction in thermal losses	20
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM444	Poorly sealed/leaky ducts	30% reduced duct leaking	20
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Windows - High Efficiency	A	IM445	U-.5 or worse	U-.22 or better	45
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM446	Degrade performance	General cleaning and maintenance	3

WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Maintenance	A	IM447	Degrade performance	General cleaning and maintenance	3	55.80	0.00	0.00	$0.46	$0.00	$0.00	$0.00	$0.23	sqft	5.0%	10.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$6.94	$5.58	0.0	IL TRM - 4.3.10 - CI-HWE-IL TRM - 4.3.10 - CI-HWE-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM448	Degrade performance	General cleaning and maintenance	3	0.01	0.00	0.00	$0.10	$0.00	$0.00	$0.00	$0.05	sqft	5.0%	10.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$468.40	$376.14	0.0	IL TRM - 4.4.31 - CI-HVC-IMN TRM 3.1 - Forced-Ai
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM449	No control	Reset control installed	16	351.13	0.00	0.00	$902.76	$0.00	$0.00	$0.00	$451.38	sqft	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$207.03	$135.94	0.0	IL TRM - 4.4.4 - CI-HVC-BIIL TRM - 4.4.4 - CI-HVC-B
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM450	No control	Reset control installed	16	101.46	0.00	0.00	$902.76	$0.00	$0.00	$0.00	$451.38	sqft	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$207.03	$135.94	0.0	IL TRM - 4.4.4 - CI-HVC-BIXCEL CO 2019-2020 DSM
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM451	Degrade performance	Cleaning and maintenance	6	124.05	0.00	0.00	$107.68	$0.00	$0.00	$0.00	$53.84	sqft	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$114.37	$86.67	0.0	IL TRM - 4.4.16 - CI-HVC-SIL TRM - 4.4.16 - CI-HVC-
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Steam Trap Maintenance	A	IM452	Degrade performance	Cleaning and maintenance	6	71.69	0.00	0.00	$107.68	$0.00	$0.00	$0.00	$53.84	sqft	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$114.37	$86.67	0.0	IL TRM - 4.4.16 - CI-HVC-SIL TRM - 4.4.16 - CI-HVC-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - High Turndown	A	IM453	No control	Turndown control installed	15	131.67	0.00	0.00	$1,540.41	$0.00	$0.00	$0.00	$770.20	sqft	35.0%	50.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$795.13	$527.49	0.0	MN TRM 3.1 - Boiler ModMN TRM 3.1 - Boiler Mod
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - High Turndown	A	IM454	No control	Turndown control installed	15	76.09	0.00	0.00	$1,540.41	$0.00	$0.00	$0.00	$770.20	sqft	35.0%	50.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$795.13	$527.49	0.0	MN TRM 3.1 - Boiler MocMN TRM 3.1 - Boiler Moc
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM455	Average performance	Optimized burner controls	18	38.19	0.00	0.00	$517.53	$0.00	$0.00	$0.00	$258.76	sqft	5.0%	85.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$811.15	$522.49	0.0	IL TRM - 4.4.22 - CI-HVC-(GBLR_O2TRM-Heating-MIL TRM - 4.4.22 - CI-HVC-
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Burner Control Optimization	A	IM456	Average performance	Optimized burner controls	18	22.07	0.00	0.00	$517.53	$0.00	$0.00	$0.00	$258.76	sqft	5.0%	85.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$811.15	$522.49	0.0	IL TRM - 4.4.22 - CI-HVC-(GBLR_O2TRM-Heating-MIL TRM - 4.4.22 - CI-HVC-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	HVAC - Demand Controlled Ventilation	A	IM457	Constant ventilation	DCV enabled	15	0.07	0.00	0.00	$0.17	$0.02	$0.00	$0.00	$0.08	sqft	55.0%	75.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$147.69	$90.83	0.0	VENT_DCV-Heating-7PLNVENT_DCV-Heating-7PLN
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Stack Economizer	A	IM458	None	Economizer installed	15	96.12	0.00	0.00	$1,007.07	$0.00	$0.00	$0.00	$503.53	sqft	15.0%	55.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$637.58	$422.97	0.0	IL TRM - 4.4.28 - CI-HVC-IXCEL CO 2019-2020 DSM IL TRM - 4.4.28 - CI-HVC-
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Stack Economizer	A	IM459	None	Economizer installed	15	73.05	0.00	0.00	$1,007.07	$0.00	$0.00	$0.00	$503.53	sqft	15.0%	55.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$637.58	$422.97	0.01	IL TRM - 4.4.28 - CI-HVC-IXCEL CO 2019-2020 DSM IL TRM - 4.4.29 - CI-HVC-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Furnace Tube Inserts	A	IM460	None	Tube inserts installed	5	0.08	0.00	0.00	$0.02	$0.00	$0.00	$0.00	$0.01	sqft	0.0%	0.0%	Retrofit	Retro3Slow	84.2%	TBD	0.2%	$282.18	$218.27	0.0	WI TRM - Radiant Tube Ir WI TRM - Radiant Tube Ir
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Space Heating - Heat Recovery Ventilator	A	IM461	None	HRV installed	15	0.01	0.00	0.00	$0.28	$0.01	$0.00	$0.00	$0.14	sqft	5.0%	10.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$146.59	$97.25	0.0	IL TRM - 4.4.27 - CI-HVC-IIL TRM - 4.4.27 - CI-HVC-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Thermostat - Programmable	A	IM462	Manual control	Programmable thermostat installed	11	0.01	0.00	0.00	$0.17	$0.01	$0.00	$0.00	$0.09	sqft	25.0%	40.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$175.79	$119.99	0.0	IL TRM - 4.4.48 - CI-HVC-IBEST
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	ENERGY STAR Connected Thermostat	A	IM463	Manual control	Wi-Fi/interactive thermostat installed	5	0.01	0.00	0.00	$0.39	$0.01	$0.00	$0.00	$0.19	sqft	5.0%	20.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$340.63	$258.91	0.0	ComConnectedThermost ComConnectedThermost
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Destratification Fans (HVLS)	A	IM464	None/Standard ventilation	Fans installed	10	0.01	0.00	0.00	$0.60	$0.00	$0.00	$0.00	$0.30	sqft	15.0%	30.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$218.93	$150.64	0.0	IL TRM - 4.4.34 - CI-HVC-IIL TRM - 4.4.34 - CI-HVC-
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM465	No insulation	Lines and condenstate tank insulated	20	1,045.73	0.00	0.00	$6,155.03	$0.00	$0.00	$0.00	$3,077.51	sqft	30.0%	35.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$341.61	$216.19	0.0	PGE Workpaper - SWWHPGE Workpaper - SWWH
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Insulate Steam Lines/Condensate Tank	A	IM466	No insulation	Lines and condenstate tank insulated	20	604.32	0.00	0.00	$6,155.03	$0.00	$0.00	$0.00	$3,077.51	sqft	30.0%	35.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$341.61	$216.19	0.0	PGE Workpaper - SWWHPGE Workpaper - SWWH
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM467	No insulation	Insulated water lines	20	1,182.01	0.00	0.00	$4,370.01	$0.00	$0.00	$0.00	$2,185.01	sqft	45.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$214.64	$135.84	0.0	PGE Workpaper - SWWHPGE Workpaper - SWWH
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Gas Boiler - Insulate Hot Water Lines	A	IM468	No insulation	Insulated water lines	20	683.07	0.00	0.00	$4,370.01	$0.00	$0.00	$0.00	$2,185.01	sqft	45.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$214.64	$135.84	0.0	PGE Workpaper - SWWHPGE Workpaper - SWWH
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Process - Insulate Heated Process Fluids	A	IM469	No insulation	Insulated process fluid lines	20	559.24	0.00	0.00	$6,155.03	$0.00	$0.00	$0.00	$3,077.51	employee	5.0%	10.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$1,005.55	$636.38	0.01	PGE Workpaper - SWWHPGE Workpaper - SWWH
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Process Heat Recovery	A	IM470	No HR system	HR system installed	15	73.39	0.00	0.00	$687.24	$0.00	$0.00	$0.00	$343.62	hp air	5.0%	50.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$989.00	$656.11	0.04	MN TRM v3.1 - Exhaust E WI TRM - Process Exhaus WI TRM - Compressed Ai
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Building Automation System	A	IM471	No control system	Automation system installed and programmed	15	0.01	0.00	0.00	$0.09	$0.03	$0.00	$0.00	$0.05	sqft	5.0%	65.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$153.98	$90.37	0.0	COM_EMS-All-XCELCO-2(BEHAV_EIS-All-CPUC-201 COM_EMS-All-XCELCO-2
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Steam System Efficiency Improvements	A	IM472	Average system efficiency	Optimized system	5	0.13	0.00	0.00	$0.11	$0.00	$0.00	$0.00	$0.06	sqft	30.0%	60.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$50,301.25	$38,909.08	0.0	AEG Research DOE - Improving Steam S DOE - Improving Steam S
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Steam System Efficiency Improvements	A	IM473	Average system efficiency	Optimized system	5	0.08	0.00	0.00	$464.93	$0.00	$0.00	$0.00	$232.47	sqft	30.0%	60.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$50,301.25	$38,909.08	0.0	AEG Research DOE - Improving Steam S DOE - Improving Steam S
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Strategic Energy Management	A	IM474	No energy management system	Energy management system installed and programmed	5	53.95	0.00	0.00	$185.13	$0.00	$4.41	$0.00	$92.56	employee	5.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$305.09	$263.37	0.0	BEHAV_SEM-All-CPUC-20BEHAV_SEM-All-CPUC-20AEG Research
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Strategic Energy Management	A	IM475	No energy management system	Energy management system installed and programmed	5	56.89	0.00	0.00	$185.13	$0.00	$4.41	$0.00	$92.56	employee	5.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$305.09	$263.37	0.01	BEHAV_SEM-All-CPUC-20BEHAV_SEM-All-CPUC-20AEG Research
WA	Industrial	Paper and Printing	New	Miscellaneous	Natural Gas	Strategic Energy Management	A	IM476	No energy management system	Energy management system installed and programmed	5	18.02	0.00	0.00	$185.13	$0.00	$4.41	$0.00	$92.56	employee	5.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$305.09	$263.37	0.0	BEHAV_SEM-All-CPUC-20BEHAV_SEM-All-CPUC-20AEG Research
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Commissioning	A	IM477	New construction code	Optimized HVAC design and controls	10	64.92	0.00	0.00	$0.27	$0.00	$0.00	$0.00	$0.13	employee	0.0%	0.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$0.99	$0.70	0.0	DL20_COM_CX-Refrig-20 2018 AMIL BUS Retro-Co U.S. Department of Energ
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Commissioning	A	IM478	New construction code	Optimized process design and controls	10	317.51	0.00	0.00	$0.27	$0.00	$0.00	$0.00	$0.13	employee	0.0%	0.0%	Retrofit	Retro12Med	75.4%	TBD	0.2%	$0.99	$0.70	0.0	DL20_COM_CX-Refrig-20 2018 AMIL BUS Retro-Co U.S. Department of Energ
WA	Industrial	Paper and Printing	New	Space Heating	Natural Gas	Retrocommissioning	A	IM479	Vintage/existing building	Optimized HVAC flow and controls	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	employee	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$290.82	$224.95	0.0	COM_RCX-Heating-7PLN-COM_RCX-Heating-7PLN-n/a
WA	Industrial	Paper and Printing	New	Process	Natural Gas	Retrocommissioning	A	IM480	Vintage/existing building	Optimized process design and controls	5	0.00	0.00	0.00	$0.00	$0.00	$0.00	$0.00	$0.00	employee	0.0%	0.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$290.82	$224.95	0.0	COM_RCX-Heating-7PLN-COM_RCX-Heating-7PLN-n/a
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Insulation - Roof/Ceiling	A	IM481	R-13	R-38	45	0.08	0.00	0.00	$1.11	$0.07	$0.00	$0.00	$0.55	sqft	60.0%	100.0%	Retrofit	Retro3Slow	81.9%	TBD	0.2%	$154.06	$62.20	1.38	RTF Wkbk - ComWeather RTF Wkbk - ComWeather Building Energy Simulatio
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Insulation - Wall Cavity	A	IM482	R-11 or less	R-21	45	0.02	0.00	0.00	$0.33	$0.02	$0.00	$0.00	$0.17	sqft	60.0%	100.0%	Retrofit	Retro3Slow	81.9%	TBD	0.2%	$102.15	$50.08	0.3	RTF Wkbk - ComWeather RTF Wkbk - ComWeather Building Energy Simulatio
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Insulation - Ducting	A	IM483	~2°F thermal losses	50% reduction in thermal losses	20	0.00	0.00	0.00	$1.52	$0.00	$0.00	$0.00	$0.76	sqft	40.0%	60.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$181.96	$115.10	0.0	MA TRM - 2019-2021 - CIMEMD - MMD8.25.01.FE Building Energy Simulatio
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	HVAC - Duct Repair and Sealing	A	IM484	Poorly sealed/leaky ducts	30% reduced duct leaking	20	0.00	0.00	0.00	$0.07	$0.01	$0.00	$0.00	$0.04	sqft	15.0%	50.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$115.72	$72.91	0.02	MA TRM - 2019-2021 - CIRS Means Cost CalculatorBuilding Energy Simulatio
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Windows - High Efficiency	A	IM485	U-.5 or worse	U-.22 or better	45	0.01	0.00	0.00	$0.23	$0.00	$0.00	$0.00	$0.11	sqft	45.0%	100.0%	Retrofit	Retro1Slow	84.8%	TBD	0.2%	$94.38	$48.52	0.03	RTF Wkbk - ComWeather RTF Wkbk - ComWeather Building Energy Simulatio
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Gas Boiler - Maintenance	A	IM486	Degrade performance	General cleaning and maintenance	3	4.15	0.00	0.00	$0.02	$0.00	$0.00	$0.00	$0.01	employee	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$105.49	$84.71	0.02	IL TRM - 4.3.10 - CI-HWE-IL TRM - 4.3.10 - CI-HWE-
WA	Industrial	Instruments	Existing	Process	Natural Gas	Gas Boiler - Maintenance	A	IM487	Degrade performance	General cleaning and maintenance	3	2.58	0.00	0.00	$0.02	$0.00	$0.00	$0.00	$0.01	sqft	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$105.49	$84.71	0.35	IL TRM - 4.3.10 - CI-HWE-IL TRM - 4.3.10 - CI-HWE-
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Gas Furnace - Maintenance	A	IM488	Degrade performance	General cleaning and maintenance	3	0.01	0.00	0.00	$0.01	$0.00	$0.00	$0.00	$0.00	sqft	20.0%	30.0%	Retrofit	Retro20Fast	65.8%	TBD	0.2%	$451.68	$362.72	0.0	IL TRM - 4.4.31 - CI-HVC-IMN TRM 3.1 - Forced-Air MN TRM v3.1 - Forced-A
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Gas Boiler - Hot Water Reset	A	IM489	No control	Reset control installed	16	15.10	0.00	0.00	$39.49	$0.00	$0.00	$0.00	$19.74	employee	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$203.72	$133.77	0.03	IL TRM - 4.4.4 - CI-HVC-BIIL TRM - 4.4.4 - CI-HVC-B
WA	Industrial	Instruments	Existing	Process	Natural Gas	Gas Boiler - Hot Water Reset	A	IM490	No control	Reset control installed	16	4.69	0.00	0.00	$39.49	$0.00	$0.00	$0.00	$19.74	sqft	20.0%	45.0%	Retrofit	Retro5Med	81.7%	TBD	0.2%	$203.72	$133.77	0.31	IL TRM - 4.4.4 - CI-HVC-BIXCEL CO 2019-2020 DSM
WA	Industrial	Instruments	Existing	Space Heating	Natural Gas	Steam Trap Maintenance	A	IM491	Degrade performance	Cleaning and maintenance	6	5.34	0.00	0.00	$4.76	$0.00	$0.00	$0.00	$2.38	employee	73.0%	85.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$140.78	$106.68	0.01	IL TRM - 4.4.16 - CI-HVC-SIL TRM - 4.4.16 - CI-HVC-
WA	Industrial	Instruments	Existing	Process	Natural Gas	Steam Trap Maintenance	A	IM492	Degrade performance	Cleaning and maintenance	6	3.31	0.00	0.00	$4.76	$0.00	$0.00	$0.00	$2.38	sqft	73.0%	85.0%	Retrofit	RetroEven20	80.8%	TBD	0.2%	$140.78	$106.68	0.12	IL TRM - 4.4.16 - CI-HVC-SIL TRM - 4.4.16 - CI-HVC-
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