				Gas Product Det	ailed Technical Assu	mptions													Program Fo	recast Inputs	Stipu	ulated Forecast	Inputs	Pro	gram Forecast Ou	itputs
	Measure Description	High Efficiency Product	Assumptions	Baseline Product Assu	mptions		Eco	nomic Assumption	ons	I			Stipulate	d Output	1		Economic A	Assumptions	20	20	Valid T	hroughout Filir	ng Period		2020	
Natural Gas Measure Group	Natural Gas Measure Description	High Efficiency Product Description / Rating	High Efficiency Product Consumption (Dth/yr)	Baseline Product Description / Rating	Baseline Product Consumption (Dth/yr)	Life of Product (years)	Average Rebate Amount	Average Baseline Produc Cost	Average Incremental Cost of Efficient Product	Assumed Energy Cost (\$/Dth)	Rebate as a % of Incremental Cost	Incremt'l Cost Payback Period w/o Rebate	Incremt'l Cost Payback Period with Rebate	Average Annual Customer Dth Savings	Average rebated cost per Dth Saved	Average rebated Lifetime cost per Dth Saved	Non-Energy O&M Savings	Energy O&M Savings	2020 Participants (-)	2020 Units (-)	NTG (%)	Installation Rate (%)	Realization Rate (%)	2020 NET Dth (Dth)	2020 Rebate Budget (\$)	2020 Incrementa Cost (\$)
New Boiler - Plan A-1	Non-condensing Hot Water Boiler, New 175 MBTUH; for space heating only	85% Efficient Boiler	134.6	80% Efficient Boiler	143	30	\$122.50	\$3,000	\$500	\$5.24	25%	11.34515354	8.565590922	8.41	\$14.56	\$0.73	\$0	\$0	1	1	86%	100%	100%	17,458	\$77,300 \$123	\$504,580 \$500
New Boiler - Plan A-1	Non-condensing Hot Water Boiler, New 900 MBTUH; for space heating only	85% Efficient Boiler	384.5	80% Efficient Boiler	409	20	\$350.00	\$5,000	\$4,000	\$5.24	9%	31.76642991	28.98686729	24.03	\$14.56	\$0.73	\$0	\$0	6	6	86%	100%	100%	124	\$2,100	\$24,000
New Boiler - Plan A-1	Non-condensing Hot Water Boiler, New 1 MMBTUH; for space and	85% Efficient Boiler	1.443.0	80% Efficient Boiler	1.533	20	\$700.00	\$7,300	\$4,400	\$5.24	16%	9.310727217	7.829475159	90.19	\$7.76	\$0.39	\$0	\$0	4	4	86%	100%	100%	310	\$2,800	\$17,600
	domestic water heating  Non-condensing Hot Water Boiler, New 2 MMBTUH; for space and		7 11		,,,,,	20						<b> </b>	<b>-</b>				**	**		·						
New Boiler - Plan A-1	domestic water heating  Non-condensing Hot Water Boiler, New 4 MMBTUH; for space and	85% Efficient Boiler	2,885.9	80% Efficient Boiler	3,066	20	\$1,400.00	\$12,000	\$5,000	\$5.24	28%	5.290185919	3.808933861	180.37	\$7.76	\$0.39	\$0	\$0	1	1	86%	100%	100%	155	\$1,400	\$5,000
New Boiler - Plan A-1	domestic water heating  Non-condensing Hot Water Boiler, New 6 MMBTUH; for space and	85% Efficient Boiler	5,771.9	82% Efficient Boiler	5,983	20	\$2,800.00	\$24,000	\$10,000	\$5.24	28%	9.037400944	6.50692868	211.17	\$13.26	\$0.66	\$0	\$0	1	1	86%	100%	100%	182	\$2,800	\$10,000
New Boiler - Plan A-1	domestic water heating  Non-condensing Hot Water Boiler, New 8 MMBTUH; for space and	85% Efficient Boiler	8,657.8	82% Efficient Boiler	8,975	20	\$4,200.00	\$36,000	\$15,000	\$5.24	28%	9.037400944	6.50692868	316.75	\$13.26	\$0.66	\$0	\$0	1	1	86%	100%	100%	272	\$4,200	\$15,000
New Boiler - Plan A-1	domestic water heating	85% Efficient Boiler	11,543.8	82% Efficient Boiler	11,966	20	\$5,600.00	\$48,000	\$20,000	\$5.24	28%	9.037400944	6.50692868	422.33	\$13.26	\$0.66	\$0	\$0	1	1	86%	100%	100%	363	\$5,600	\$20,000
New Boiler Plan A 2	Condensing Hot Water Boiler, New 175 MBTUH; for epace heating only  Condensing Hot Water Boiler, New 500 MBTUH; for space heating only	92% Efficient Boiler	134.6	80%-Efficient Beller	<del>153</del>	20	\$525.00	\$3,000	\$1,600	\$8.24	33%	16.50204151	11.08/30914	18.50	\$28.37	<del>\$1.42</del>	<del>\$0</del>	<del>\$0</del>	0	0	86%	400%	100%	0	<del>\$0</del>	<del>\$0</del>
New Beiler Plan A 2	Condensing Hot Water Boiler, New 500 MB1UH; for space heating only  Condensing Hot Water Boiler, New 1 MMBTUH; for space and domestic	92% Efficient Boiler	384.5	80% Efficient Beiler	437	20	\$1,500.00 \$3,000.00	\$5,000	\$6,200	\$8.24	24%	22.3808938	16.96616143	52.87	\$28.37	<del>\$1.42</del>	<del>\$0</del>	<del>\$0</del>	0		86%	100%	100%	0	<del>\$0</del>	<del>\$0</del>
New Boiler Plan A 2	water heating Condensing Hot Water Boiler, New 2 MMBTUH; for space and domestic	92% Efficient Boiler	1,443.0	80% Efficient Beiler	1,641	20	+-,	\$7,300	\$7,700	\$8.24	39%	7.406260286	4.52070433	198.41	\$15.12	\$0.76	<del>\$0</del>	<del>\$0</del>	0	0	86%	100%	100%		<del>\$0</del>	<del>\$0</del>
New Boiler Plan A 2	water heating  Condensing Hot Water Boiler, New 4 MMBTUH; for space and domestic	92% Efficient Boiler	2,885.9	80%-Efficient Beller	3,283	20	\$6,000.00	<del>\$12,000</del>	<del>\$14,500</del>	\$8.24	41%	6.973426893	4.087870937	396.82	\$15.12	\$0.76	<del>\$0</del>	<del>\$0</del>	0	0	86%	100%	100%	0	<del>\$0</del>	<del>\$0</del>
New Boiler Plan A 2	water heating  Condensing Hot Water Boiler, New 6 MMBTUH; for space and domestic	92% Efficient Boiler	5,771.9	82% Efficient Beiler	6,405	20	\$12,000.00	\$24,000	\$29,000	\$6.24	41%	8.736154246	<del>0.121193868</del>	633.50	\$18.94	\$0.95	<del>\$0</del>	<del>\$0</del>	0	0	86%	100%	100%	9	<del>\$0</del>	<del>\$0</del>
New Boiler - Plan A-2	water-heating Condensine Het Water Beiler. New & MMBTUH: for space and domestic	92% Efficient Boiler	8,657.8	82% Efficient Boiler	9,608	20	\$18,000.00	\$36,000	\$43,500	\$5.24	41%	8.736154246	5.121193868	950.25	\$18.94	\$0.95	\$0	<del>\$0</del>	0	٥	86%	100%	100%	0	\$0	\$0
New Boiler - Plan A-2	water heating	92% Efficient Boiler	11,543.8	82% Efficient Boiler	12,811	20	\$24,000.00	\$48,000	\$58,000	\$5.24	41%	8.736154246	5.121193868	1267.00	\$18.94	\$0.95	<del>\$</del>	\$0	0	<u> </u>	86%	100%	100%	0	\$0	\$0 *******
Water Heater	Commercial Hot Water Heater Condensing; 160 MBTUH	96% Efficient Water Heater	163.8	80% Efficient Water Heater	201	15	\$640.00	\$3,512	\$1,018	\$5.24	63%	5.185065276	1.926761363	37.48	\$17.07	\$1.14	\$0	\$0	6	7	86%	100%	100%	226	\$4,480	\$7,129
Water Heater	Commercial Hot Water Heater Condensing; 199.9 MBTUH	96% Efficient Water Heater	202.7	80% Efficient Water Heater	248	15	\$799.60	\$3,450	\$1,000	\$5.24	80%	4.21890549	0.846691875	45.25	\$17.67	\$1.18	\$0	\$0	7	8	86%	100%	100%	311	\$6,397	\$8,003
Water Heater	Commercial Hot Water Heater Condensing; 300 MBTUH	96% Efficient Water Heater	300.1	80% Efficient Water Heater	365	15	\$1,200.00	\$5,959	\$1,728	\$5.24	69%	5.094605251	1.556910138	64.73	\$18.54	\$1.24	\$0	\$0	7	9	86%	100%	100%	501	\$10,800	\$15,553
Water Heater	Commercial Tankless Water Heater - Condensing; 150 MBTUH	95% Efficient Water Heater	146.0	80% Efficient Storage Water Heater	188	15	\$600.00	\$4,284	\$1,242	\$5.24	48%	5.667275277	2.930254473	41.84	\$14.34	\$0.96	\$0	\$0	4	5	86%	100%	100%	180	\$3,000	\$6,212
Water Heater	Commercial Tankless Water Heater - Condensing; 199.9 MBTUH  Pipe Insulation Hot Water System	97% Efficient Water Heater  100 Ft of Pipe with new-	194.5	80% Efficient Storage Water Heater  100 Ft of Pipe with no or old	250 86.0	15	\$799.60 <del>\$1,961.25</del>	\$3,450	\$1,000	\$5.24	80% 85%	3.421076176	0.68657556	55.80 <del>76.46</del>	\$14.33 \$25.65	\$0.96 \$1.71	\$0 <del>\$0</del>	\$0 <del>20</del>	10	12	86% 86%	100%	100%	576	\$9,595	\$12,004 <del>\$0</del>
Pipe insulation		insulation 100 Ft of Pipe with new	<del>10.5</del>	insulation 100 Ft of Pipe with no or old		<del>15</del>		<del>\$0</del>	\$2,307	<del>\$5.24</del>		4.05050004	0.500055750		<del>                                     </del>				0					•		<u> </u>
Pipe Insulation	Pipe Insulation Steam System  C&I Gas Boiler - Outdoor Air Reset assumed on 1-HW boiler at 80% eff 175	insulation	13.0	insulation	137.3	20	\$3,540.00	\$0 \$0	\$3,161	\$5.24	112%	4.85258934	-0.582255758	124.30	\$28.48	\$1.90	\$0 \$0	\$0 \$0	0	0	86%	100%	100%	0	\$0	\$0 \$0
Outdoor Air Reset	Mbtuh  C&I Gas Boiler - Outdoor Air Reset assumed on 1-HW boiler at 80% eff 500	83% Efficient Boiler 83% Efficient Boiler	216.9	80% Efficient existing boiler 80% Efficient existing boiler	225	20	\$43.75	50	\$1,000	\$5.24	4%	23.4667004 8.213345141	22.44003226	8.13	\$5.38 \$5.38	\$0.27 \$0.27	\$0	\$0	0	0	86%	100%	100%	0	\$0 \$0	\$0
Outdoor Air Reset	Mbtuh  C&I Gas Boiler - Outdoor Air Reset assumed on 1-HW boiler at 80% eff 1	83% Efficient Boiler	619.6	80% Efficient existing boiler	643 1,286	20	\$125.00 \$250.00	\$0	\$1,000 \$1,000	\$5.24 \$5.24	13%	1	7.186676998 3.080004428	23.24	\$5.38	\$0.27	\$0	\$0	0	0	86%	100%	-	0	\$0	\$0
Outdoor Air Reset Outdoor Air Reset	MMButh  C&I Gas Boiler - Outdoor Air Reset assumed on 1-HW boiler at 80% eff 2	83% Efficient Boiler	2,478.4	80% Efficient existing boiler	2,571	20	\$250.00	\$0	\$1,000	\$5.24 \$5.24	25% 50%	4.10667257 2.053336285	1.026668143	92.94	\$5.38	\$0.27	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Stack Damper	MMBtuh  C&I Gas Boiler - Stack Dampers assumed on 1-HW boiler at 80% eff 175	81% Efficient Boiler	222.2	80% Efficient existing boiler	2,571	10	\$43.75	\$0 60	\$500	\$5.24	9%	34.35185661	31.34606916	2.78	\$15.75	\$1.31	\$0	\$0 en	0	0	86%	100%	100%	0	\$0	\$0
Stack Damper	Mbtuh  C&I Gas Boiler - Stack Dampers assumed on 1-HW boiler at 80% eff 500	81% Efficient Boiler	634.9	80% Efficient existing boiler	643	12	\$125.00	\$0	\$500	\$5.24	25%	12.02314981	9.017362361	7.94	\$15.75	\$1.31	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Stack Damper	Mbtuh  C&I Gas Boiler - Stack Dampers assumed on 1-HW boiler at 80% eff 1	81% Efficient Boiler	1,269.8	80% Efficient existing boiler	1,286	12	\$250.00	\$0	\$1,000	\$5.24	25%	-		15.87	\$15.75	\$1.31	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Stack Damper	MMButh  C&I Gas Boiler - Stack Dampers assumed on 1-HW boiler at 80% eff 2	81% Efficient Boiler	2,539.6	80% Efficient existing boiler	2,571	12	\$500.00	\$0	\$1,000	\$5.24	50%	6.011574907	3.005787454	31.75	\$15.75	\$1.31	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Modulating Burner	MMBtuh  C&I Gas Boiler - Modulating Burner Controls, >=5 to 1 turn down assumed	83% Efficient Boiler	216.9	80% Efficient existing boiler	225	20	\$131.25	\$0	\$3,808	\$5.24	3%	89.36119513	86.28119071	8.13	\$16.14	\$0.81	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Modulating Burner	on 1-HW boiler at 80% eff 175 Mbtuh  C&I Gas Boiler - Modulating Burner Controls, >=5 to 1 turn down assumed	83% Efficient Boiler	619.6	80% Efficient existing boiler	643	20	\$375.00	\$0	\$3,808	\$5.24	10%	31.2764183	28.19641387	23.24	\$16.14	\$0.81	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Modulating Burner	on 1-HW boiler at 80% eff 500 Mbtuh  C&I Gas Boiler - Modulating Burner Controls, >=5 to 1 turn down assumed on 1-HW boiler at 80% eff 1 MMB.uth	83% Efficient Boiler	1,239.2	80% Efficient existing boiler	1,286	20	\$750.00	\$0	\$8,422	\$5.24	9%	34.58639639	31.50639196	46.47	\$16.14	\$0.81	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Modulating Burner	C&I Gas Boiler - Modulating Burner Controls, >=5 to 1 turn down assumed	83% Efficient Boiler	2,478.4	80% Efficient existing boiler	2,571	20	\$1,500.00	\$0	\$8,422	\$5.24	18%	17.29319819	14.21319377	92.94	\$16.14	\$0.81	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
C&I Gas Boiler - Steam Traps	on 1-HW boiler at 80% eff 2 MMBtuh  C&I Gas Boiler - Steam Traps Low Pressure - average of 10 and 15 PSI	New Steam Traps	2,441.1	Existing Boiler, malfunctioning steam traps	2,481	10	\$50.00	\$0	\$200	\$5.24	25%	0.956589948	0.717442461	39.90	\$1.25	\$0.13	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
C&I Gas Boiler - Steam Traps	C&I Gas Boiler - Steam Traps High Pressure - average of 50 PSI and 65 PSI	New Steam Traps	2,391.8	Existing Boiler, malfunctioning steam traps	2,481	4	\$50.00	\$0	\$200	\$5.24	25%	0.427975656	0.320981742	89.18	\$0.56	\$0.14	\$0	\$0	0	0	86%	100%	100%	0	\$0	\$0
Business Unit Heaters	Non-Condensing Power Vent (83% efficiency)	Non-condensing power vent unit	it 200	Non-condensing standard forced-air	208	20	\$75	\$1,051	\$202	\$5.24	37%	5.132203566	3.224807817	7.52	\$9.99	\$0.50	\$0	\$0	7	14	86%	100%	100%	91	\$1,052	\$2,831
Business Unit Heaters	Condensing (>90% efficiency)	heater Condensing power vent unit	<del>185</del>	unit heater  Non-condensing standard forced-air	208	20	\$208	<del>\$1,051</del>	\$1,254	\$ <del>5.24</del>	<del>17%</del>	10.35054077	8.633884595	23.11	\$9.00	<del>\$0.45</del>	<del>\$0</del>	<del>\$0</del>	0	0	86%	100%	100%	0	<del>\$0</del>	<del>\$0</del>
Business Unit Heaters	Infrared	Infrared heater	184	Non-condensing standard forced-air	208	15	\$207	\$1,051	\$244	\$5.24	85%	1.908307775	0.285023774	24.39	\$8.51	\$0.57	\$0	\$0	15	20	86%	100%	100%	419	\$4,148	\$4,877
Ozone Laundry	Ozone Washer Extractor =Washer <100lbs (65Lb)	Ozone laundry generator	46.46	New ozone laundry system(Venturi Injection or Bubble Diffusion) is added-on to new or existing commercial washing machine using hot water heated with natural gas	246	10	\$0.00	\$0.00	\$8,750.00	\$5.24	0%	4.99335302	4.99335302	199.54	\$0.00	\$0.00	\$707	\$0	5	6	86%	100%	100%	1,030	\$0	\$52,500
Ozone Laundry	Ozone Washer Extractor Washer >100lbs<4990lbs (125lb)	Ozone laundry generator	90.26	New ozone laundry system(Venturi Injection or Bubble Diffusion) is added-on to new or existing commercial washing machine using hot water heated with natural gas	474	10	\$0.00	\$0.00	\$15,500.00	\$5.24	0%	4.599591467	4.599591467	383.74	\$0.00	\$0.00	\$1,359	\$0	7	8	86%	100%	100%	2,640	\$0	\$124,000
Ozone Laundry	Ozone Washer Extractor Washer >100lbs<4990lbs (150lb)	Ozone laundry generator	108.52	New ozone laundry system(Venturi Injection or Bubble Diffusion) is added-on to new or existing commercial washing machine using hot water heated with natural gas	569	10	\$0.00	\$0.00	\$15,500.00	\$5.24	0%	3.832992889	3.832992889	460.49	\$0.00	\$0.00	\$1,631	\$0	5	6	86%	100%	100%	2,376	\$0	\$93,000
Ozone Laundry	Ozone Washer Extractor Washer => 500lbs (400lbs)	Ozone laundry generator	288.04	New ozone laundry system(Venturi Injection or Bubble Diffusion) is added-on to new or existing commercial washing machine using hot water heated with natural gas	1516	10	\$0.00	\$0.00	\$27,500.00	\$5.24	0%	2.550176721	2.550176721	1227.96	\$0.00	\$0.00	\$4,349	\$0	2	2	86%	100%	100%	2,112	\$0	\$55,000
Pipe Insulation - Direct Install	Direct Install Pipe Insulation - Hot Water System	100 Ft of Pipe with new insulation	10.5	100 Ft of Pipe with no or old insulation	86.9	15	\$611.65	\$0.00	\$611.65	\$5.24	100%	1.526717557	0	76.46	\$8.00	\$0.53	\$0	\$0	6	6	100%	100%	100%	459	\$3,670	\$3,670
Pipe Insulation - Direct Install	Direct Install Pipe Insulation - Steam System	100 Ft of Pipe with new insulation	13.0	100 Ft of Pipe with no or old insulation	137.3	15	\$994.43	\$0.00	\$994.43	\$5.24	100%	1.526717557	0	124.30	\$8.00	\$0.53	\$0	\$0	6	6	100%	100%	100%	746	\$5,967	\$5,967
Direct Install - Pre Rinse Sprayer	CHW Pre-Rinse Sprayer - gas water heating	1.28 gallons per minute sprayer	r 7.89	1.60 gallons per minute sprayer	9.87	5	\$45.00	\$0.00	\$45.00	\$5.24	100%	1.357315583	0	1.97	\$22.80	\$4.56	\$23	\$0	12	12	100%	100%	100%	24	\$540	\$540
Direct Install - Faucet Aerator	Faucet Aerator (Restroom), gas water heating	.5 gallons per minute restroom faucet aerator	3.06	2.2 gallons per minute faucet	11.21	10	\$6.70	\$0.00	\$6.70	\$5.24	100%	0.048905589	0	8.16	\$0.82	\$0.08	\$94	\$0	12	12	100%	100%	100%	98	\$80	\$80
Direct Install - Faucet Aerator	Faucet Aerator (Kitchen), gas water heating	1.5 gallons per minute kitchen faucet aerator	2.55	2.2 gallons per minute faucet	3.74	10	\$6.70	\$0.00	\$6.70	\$5.24	100%	0.335352607	0	1.19	\$5.63	\$0.56	\$14	\$0	12	12	100%	100%	100%	14	\$80	\$80
Custom	Custom Gas	New Equipment	8,483.89	Old or less efficient systems or equipment	10,604.86	20	\$4,233.87	\$0.00	\$10,517.24	\$5.24	40%	0.946314594	0.565361816	2120.97	\$2.00	\$0.10	\$0	\$0	2	2	100%	100%	100%	4,242	\$8,468	\$21,034