



Appendix H

Benefit/Cost Model Key Inputs, Assumptions, and Results

Residential Sector Results

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NH Residential Sector, Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
Electric Appliances - Single Family/Multi Family		
1 Second Freezer Turn In	SF	15.19
2 Energy Star Compliant Bottom Freezer Refrigerator	SF	4.64
3 Energy Star Compliant Chest Freezer	SF	2.52
4 Energy Star Dehumidifer	SF	17479.23
5 Second Refrigerator Turn In	SF	12.24
6 Energy Star Compliant Side by Side Refrigerator	SF	5.23
7 Energy Star Compliant Top Freezer Refrigerator	SF	4.63
8 Energy Star Compliant Upright Freezer	SF	2.65
9 Energy Star office equipment including monitors, copiers, multi-function machines.	SF	5203.82
10 Induction Cooktop vs Electric Coil Cooktop	SF	0.18
11 TVs - Energy Star over standard	SF	2157.50
12 Second Freezer Turn In	MF	15.19
13 Energy Star Compliant Bottom Freezer Refrigerator	MF	4.64
14 Energy Star Compliant Chest Freezer	MF	2.52
15 Energy Star Dehumidifer	MF	17479.23
16 Second Refrigerator Turn In	MF	12.24
17 Energy Star Compliant Side by Side Refrigerator	MF	5.23
18 Energy Star Compliant Top Freezer Refrigerator	MF	4.63
19 Energy Star Compliant Upright Freezer	MF	2.65
20 Energy Star office equipment including monitors, copiers, multi-function machines.	MF	5203.82
21 Induction Cooktop vs Electric Coil Cooktop	MF	0.18
22 TVs - Energy Star over standard	MF	2157.50
Phantom Power - Single Family/Multi Family		
23 Phantom Power	SF	1.37
24 Phantom Power	MF	1.37
Pools - Single Family		
25 Pool Pump and Motor	SF	2.80
Lighting - Single Family /Multi Family		
26 LED options, inc. MR 16, R16, R20, R30, R38 & G25	SF	1.44
27 CFL Bulbs (Homes w/ no CFL bulbs installed)-Low Use	SF	5.13
28 CFL Bulbs (Homes w/ no CFL bulbs installed)-High Use	SF	5.29
29 Timers/Motion/Photocell controlled outdoor lighting	SF	1.22
30 CFL Bulbs (Homes w/ partial CFL installation)-Low Use	SF	5.13
31 CFL Bulbs (Homes w/ partial CFL installation)-High Use	SF	5.29
32 LED options, inc. MR 16, R16, R20, R30, R38 & G25	MF	1.44
33 CFL Bulbs (Homes w/ no CFL bulbs installed)-Low Use	MF	5.13
34 CFL Bulbs (Homes w/ no CFL bulbs installed)-High Use	MF	5.29
35 Timers/Motion/Photocell controlled outdoor lighting	MF	1.22
36 CFL Bulbs (Homes w/ partial CFL installation)-Low Use	MF	5.13
37 CFL Bulbs (Homes w/ partial CFL installation)-High Use	MF	5.29
Space Heating and Space Cooling - Single Family Homes		
38 Programmable Thermostats (Electric Heat)	SF	21.00
39 Energy Efficient Windows (Electric Heat)	SF	10.38
40 Duct Sealing (Electric Heat)	SF	6.50
41 High Efficiency Heat Pump (Tier 2)	SF	3.48
42 High Efficiency Heat Pump (Tier 1)	SF	1.80
43 Ground Source Heat Pump	SF	0.69
44 Insulation & Weatherization Package (Electric Heat) Good	SF	3.22
45 Insulation & Weatherization Package (Electric Heat) Better	SF	1.72
46 Insulation & Weatherization Package (Electric Heat) Best	SF	0.99
47 Energy Star Room A/C	SF	11.61
51 Duct Sealing - gas (Heating + Central Air)	SF	5.01
48 Programmable Thermostats - gas (Heating + Central Air)	SF	17.12
49 Energy Efficient Windows - gas (Heating + Central Air)	SF	9.67
50 Tree Shading - gas (Heating + Central Air)	SF	62.74

NH Residential Sector, Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
52	Insulation/weatherization package - Good (Improved Base Home) - Gas Heat + Central Air	SF 3.79
53	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - Gas Heat + Central Air	SF 0.82
54	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - Gas Heat + Central Air	SF 1.11
55	Insulation/weatherization package - Good (Improved Base Home) - LPG Heat + Central Air	SF 6.67
56	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - LPG Heat + Central Air	SF 2.14
57	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - LPG Heat + Central Air	SF 1.38
58	Energy Efficient Windows - oil (Heating + Central Air)	SF 12.06
59	Duct Sealing - oil (Heating + Central Air)	SF 6.13
60	Programmable Thermostats - oil (Heating + Central Air)	SF 20.52
61	Tree Shading - oil (Heating + Central Air)	SF 77.42
62	Insulation/weatherization package - Good (Improved Base Home) - Oil Heat + Central Air	SF 4.31
63	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - Oil Heat + Central Air	SF 0.89
64	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - Oil Heat + Central Air	SF 1.29
65	Tree Shading (Room AC)	SF 59.18
66	Energy Efficient Windows (Room AC)	SF 1.74
67	HVAC Tune-Up	SF 0.80
68	High Efficiency Central AC (Tier 1)	SF 1.08
69	High Efficiency Central AC (Tier 2)	SF 0.84
70	Efficient Furnace Fan (Non-Electric Furnace)	SF 2.13
Space Heating and Space Cooling - Multi Family Homes		
71	Programmable Thermostats (Electric Heat)	MF 14.87
72	Duct Sealing (Electric Heat)	MF 4.60
73	Energy Efficient Windows (Electric Heat)	MF 15.57
74	Ground Source Heat Pump	MF 0.69
75	High Efficiency Heat Pump (Tier 2)	MF 3.48
76	High Efficiency Heat Pump (Tier 1)	MF 1.80
77	Insulation & Weatherization Package (Electric Heat) Good	MF 5.31
78	Insulation & Weatherization Package (Electric Heat) Best	MF 1.61
79	Insulation & Weatherization Package (Electric Heat) Better	MF 2.95
80	Energy Star Room A/C	MF 11.61
84	Tree Shading - gas (Heating + Central Air)	MF 26.04
81	Programmable Thermostats - gas (Heating + Central Air)	MF 8.27
82	Energy Efficient Windows - gas (Heating + Central Air)	MF 11.09
83	Duct Sealing - gas (Heating + Central Air)	MF 4.01
85	Insulation/weatherization package - Good (Improved Base Home) - Gas Heat + Central Air	MF 2.38
86	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - Gas Heat + Central Air	MF 0.87
87	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - Gas Heat + Central Air	MF 1.44
88	Insulation/weatherization package - Good (Improved Base Home) - LPG Heat + Central Air	MF 2.69
89	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - LPG Heat + Central Air	MF 2.70
90	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - LPG Heat + Central Air	MF 1.52
92	Energy Efficient Windows - oil (Heating + Central Air)	MF 7.34
91	Programmable Thermostats - oil (Heating + Central Air)	MF 18.98
93	Duct Sealing - oil (Heating + Central Air)	MF 5.71
94	Tree Shading - oil (Heating + Central Air)	MF 33.47
95	Insulation/weatherization package - Good (Improved Base Home) - Oil Heat + Central Air	MF 1.36
96	Insulation/weatherization package - Best (Major Renovation to ES Home Levels) - Oil Heat + Central Air	MF 0.81
97	Insulation/weatherization package - Better (Improved Base Home to Current NH Code) - Oil Heat + Central Air	MF 1.85
98	Tree Shading (Room AC)	MF 25.40
99	Energy Efficient Windows (Room AC)	MF 2.44
100	Insulation & Weatherization Package (Room AC)	MF 0.12
101	HVAC Tune-Up	MF 0.38
102	High Efficiency Central AC (Tier 1)	MF 0.51
103	High Efficiency Central AC (Tier 2)	MF 0.39
104	Efficient Furnace Fan (Non-Electric Furnace)	MF 1.60
Water Heating - Single Family/Multi Family		
105	Energy Star Dishwasher (w/ Electric DHW)	SF 7.83
106	Beyond Energy Star Dishwasher (w/Electric DHW)	SF 4.68
107	Energy Star Dishwasher (w/Gas DHW)	SF 10.61
108	Beyond Energy Star Dishwasher (w/Gas DHW)	SF 5.84
109	Energy Star Dishwasher (w/Oil DHW)	SF 18.00
110	Beyond Energy Star Dishwasher (w/Oil DHW)	SF 10.12

NH Residential Sector, Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
111 Energy Star Dishwasher (w/Propane DHW)	SF	21.64
112 Beyond Energy Star Dishwasher (w/Propane DHW)	SF	12.13
113 Low Flow Showerhead/Faucets	SF	10.69
114 Efficient Water Heater (EF=0.93)	SF	5.40
115 Pipe Wrap	SF	10.81
116 High efficiency water heater (EF=0.95)	SF	3.74
117 Water Heater Blanket	SF	3.18
118 Energy Star Clothes Washer (w/ Electric DWH)	SF	2.00
119 Heat Pump Water Heater	SF	1.95
120 Whole-House Tankless Water Heater - Electric <=12 kW	SF	0.58
121 Solar Water Heating	SF	0.38
122 Energy Star Clothes Washer (w/ Gas DHW)	SF	0.74
123 Energy Star Clothes Washer (w/ Oil DHW)	SF	1.02
124 Energy Star Clothes Washer (w/ Propane DHW)	SF	1.24
125 Energy Star Dishwasher (w/ Electric DHW)	MF	8.28
126 Beyond Energy Star Dishwasher (w/Electric DHW)	MF	4.92
127 Energy Star Dishwasher (w/Gas DHW)	MF	11.07
128 Beyond Energy Star Dishwasher (w/Gas DHW)	MF	6.29
129 Energy Star Dishwasher (w/Oil DHW)	MF	18.46
130 Beyond Energy Star Dishwasher (w/Oil DHW)	MF	10.37
131 Energy Star Dishwasher (w/Propane DHW)	MF	22.10
132 Beyond Energy Star Dishwasher (w/Propane DHW)	MF	12.38
133 Low Flow Showerhead/Faucets	MF	16.32
134 Efficient Water Heater (EF=0.93)	MF	5.40
135 Pipe Wrap	MF	4.52
136 High efficiency water heater (EF=0.95)	MF	3.74
137 Water Heater Blanket	MF	3.18
138 Energy Star Clothes Washer (w/ Electric DWH)	MF	2.99
139 Heat Pump Water Heater	MF	1.95
140 Whole-House Tankless Water Heater - Electric <=12 kW	MF	0.58
141 Solar Water Heating	MF	0.38
142 Energy Star Clothes Washer (w/ Gas DHW)	MF	1.74
143 Energy Star Clothes Washer (w/ Oil DHW)	MF	2.02
144 Energy Star Clothes Washer (w/ Propane DHW)	MF	2.24
New Construction Homes - Single Family/Multi Family		
145 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Electric Heat	SF	12.80
146 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Electric Heat	SF	6.01
147 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Electric Heat	SF	1.80
148 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) -Gas Heat	SF	1.45
149 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Gas Heat	SF	2.24
150 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Gas Heat	SF	3.60
151 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - LPG Heat	SF	8.31
152 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - LPG Heat	SF	2.85
153 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - LPG Heat	SF	4.15
154 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Oil Heat	SF	2.87
155 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) -Oil Heat	SF	4.35
156 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Oil Heat	SF	16.19
157 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Electric Heat	MF	4.15
158 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Electric Heat	MF	2.62
159 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Electric Heat	MF	1.97
160 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Gas Heat	MF	4.04
161 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) -Gas Heat	MF	2.97
162 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Gas Heat	MF	5.41
163 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - LPG Heat	MF	5.24
164 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - LPG Heat	MF	7.52
165 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - LPG Heat	MF	12.53
166 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) -Oil Heat	MF	11.93
167 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Oil Heat	MF	7.34
168 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Oil Heat	MF	12.09

NH Residential Sector, Non-Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
Space Heating and Space Cooling - Single Family Homes		
1 Energy Efficient Windows (SF) - gas heat	SF	3.35
2 Programmable Thermostats (SF) - gas boiler (Heating + Central Air)	SF	n/a
3 Programmable Thermostats (SF) - gas boiler (Heating only)	SF	10.09
4 High Efficiency Boiler - Natural Gas	SF	1.31
5 Programmable Thermostats (SF) - gas furnace (Heating + Central Air)	SF	15.47
6 Programmable Thermostats (SF) - gas furnace (Heating only)	SF	10.09
7 High Efficiency Furnace - Natural Gas	SF	14.84
8 Duct Sealing - gas	SF	3.23
9 HVAC Tune-Up (Gas Heat)	SF	3.22
10 Improved Steam Vents (SF) - gas	SF	2.56
11 Efficient Steam Boiler (SF) - gas	SF	0.61
12 Insulation/weatherization package - single family - Good (Improved Base Home) - Gas Heat + Central Air	SF	3.79
13 Insulation/weatherization package - single family - Better (Improved Base Home to Current NH Code) - Gas Heat + Central Air	SF	1.11
14 Insulation/weatherization package - single family - Best (Major Renovation to ES Home Levels) - Gas Heat + Central Air	SF	0.82
15 Energy Efficient Windows (SF) - propane heat	SF	8.53
16 Programmable Thermostats (SF) - propane boiler (Heating + Central Air)	SF	32.09
17 Programmable Thermostats (SF) - propane boiler (Heating only)	SF	26.64
18 High Efficiency Boiler - Propane	SF	4.40
19 Programmable Thermostats (SF) - propane furnace (Heating + Central Air)	SF	32.09
20 Programmable Thermostats (SF) - propane furnace (Heating only)	SF	26.64
21 High Efficiency Furnace - Propane	SF	38.10
22 Duct Sealing - Propane	SF	8.30
23 Improved Steam Vents (SF) - Propane	SF	6.56
24 Efficient Steam Boiler (SF) - Propane	SF	1.56
25 Insulation/weatherization package - single family - Good (Improved Base Home) - LP Heat + Central Air	SF	6.67
26 Insulation/weatherization package - single family - Better (Improved Base Home to Current NH Code) - LP Heat + Central Air	SF	2.14
27 Insulation/weatherization package - single family - Best (Major Renovation to ES Home Levels) - LP Heat + Central Air	SF	1.38
28 Energy Efficient Windows (SF) - oil heat	SF	4.37
29 Programmable Thermostats (SF) - oil boiler (Heating + Central Air)	SF	20.78
30 Programmable Thermostats (SF) - oil boiler (Heating only)	SF	15.33
31 High Efficiency Boiler - Oil	SF	1.25
32 Programmable Thermostats (SF) - oil furnace (Heating + Central Air)	SF	20.27
33 Programmable Thermostats (SF) - oil furnace (Heating only)	SF	14.82
34 Duct Sealing - oil	SF	4.47
35 HVAC Tune-Up (Oil Heat)	SF	3.94
36 High Efficiency Furnace - Oil	SF	2.97
37 Improved Steam Vents (SF) - oil	SF	3.59
38 Efficient Steam Boiler (SF) - oil	SF	1.22
39 Insulation/weatherization package - single family - Good (Improved Base Home) - Oil Heat + Central Air	SF	4.31
40 Insulation/weatherization package - single family - Better (Improved Base Home to Current NH Code) - Oil Heat + Central Air	SF	1.29
41 Insulation/weatherization package - single family - Best (Major Renovation to ES Home Levels) - Oil Heat + Central Air	SF	0.89
Space Heating and Space Cooling - Multi Family Homes		
42 Energy Efficient Windows (MF) - gas heat	MF	3.35
43 Programmable Thermostats (MF) - gas boiler (Heating only)	MF	7.19
44 Programmable Thermostats (MF) - gas boiler (Heating + Central Air)	MF	9.76
45 High Efficiency Boiler - Natural Gas	MF	1.22
46 Programmable Thermostats (MF) - gas furnace (Heating only)	MF	7.15
47 Programmable Thermostats (MF) - gas furnace (Heating + Central Air)	MF	9.72
48 High Efficiency Furnace - Natural Gas	MF	10.51
49 Duct Sealing - gas	MF	2.29
50 HVAC Tune-Up (Gas Heat)	MF	2.51
51 Mainline Air vent (MF) - gas	MF	18.43
52 Thermostatic vents (MF) - gas	MF	2.27
53 Efficient Steam Boiler (MF) - gas	MF	0.55
54 Insulation/weatherization package - multi family - Good (Improved Base Home) - Gas Heat + Central Air	MF	2.38

NH Residential Sector, Non-Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
55 Insulation/weatherization package - multi family - Better (Improved Base Home to Current NH Code) - Gas Heat + Central Air	MF	1.44
56 Insulation/weatherization package - multi family - Best (Major Renovation to ES Home Levels) - Gas Heat + Central Air	MF	0.87
57 Energy Efficient Windows (MF) - Propane heat	MF	8.53
58 Programmable Thermostats (MF) - propane boiler (Heating only)	MF	18.99
59 Programmable Thermostats (MF) - propane boiler (Heating + Central Air)	MF	n/a
60 High Efficiency Boiler - Propane	MF	3.14
61 Programmable Thermostats (MF) - propane furnace (Heating only)	MF	18.87
62 Programmable Thermostats (MF) - propane furnace (Heating + Central Air)	MF	21.44
63 High Efficiency Furnace - Propane	MF	26.99
64 Duct Sealing - Propane	MF	5.88
65 Mainline Air vent (MF) - Propane	MF	n/a
66 Thermostatic vents (MF) - Propane	MF	n/a
67 Efficient Steam Boiler (MF) - Propane	MF	n/a
68 Insulation/weatherization package - multi family - Good (Improved Base Home) - LP Heat + Central Air	MF	2.69
69 Insulation/weatherization package - multi family - Better (Improved Base Home to Current NH Code) - LP Heat + Central Air	MF	2.70
70 Insulation/weatherization package - multi family - Best (Major Renovation to ES Home Levels) - LP Heat + Central Air	MF	1.52
71 Energy Efficient Windows (MF) - oil heat	MF	4.37
72 Programmable Thermostats (MF) - oil boiler (Heating only)	MF	7.67
73 Programmable Thermostats (MF) - oil boiler (Heating + Central Air)	MF	n/a
74 High Efficiency Boiler - Oil	MF	0.69
75 Programmable Thermostats (MF) - oil furnace (Heating only)	MF	7.33
76 Programmable Thermostats (MF) - oil furnace (Heating + Central Air)	MF	9.90
77 HVAC Tune-Up (Oil Heat)	MF	3.16
78 Duct Sealing - oil	MF	3.14
79 High Efficiency Furnace - Oil	MF	2.09
80 Mainline Air vent (MF) - oil	MF	n/a
81 Thermostatic vents (MF) - oil	MF	n/a
82 Efficient Steam Boiler (MF) - oil	MF	n/a
83 Insulation/weatherization package - multi family - Good (Improved Base Home) - Oil Heat + Central Air	MF	1.36
84 Insulation/weatherization package - multi family - Better (Improved Base Home to Current NH Code) - Oil Heat + Central Air	MF	1.85
85 Insulation/weatherization package - multi family - Best (Major Renovation to ES Home Levels) - Oil Heat + Central Air	MF	0.81
Water Heating - Single Family/Multi Family		
86 Energy Star Clothes Washer (w/ Gas DHW)	SF	1.77
87 Energy Star Clothes Washer (w/ Oil DHW)	SF	2.02
88 Energy Star Clothes Washer (w/ Propane DHW)	SF	2.24
89 Energy Star Dishwasher (w/Gas DHW)	SF	10.69
90 Beyond Energy Star Dishwasher (w/Gas DHW)	SF	6.09
91 Energy Star Dishwasher (w/Oil DHW)	SF	18.46
92 Beyond Energy Star Dishwasher (w/Oil DHW)	SF	10.37
93 Energy Star Dishwasher (w/Propane DHW)	SF	22.10
94 Beyond Energy Star Dishwasher (w/Propane DHW)	SF	12.38
95 High Efficiency Water Heater - Natural Gas (EF=0.62)	SF	2.53
96 Low Flow Showerhead/Faucets - Natural Gas	SF	1.76
98 Whole-House Tankless Water Heater - Nat Gas <=200 kBTHU	SF	1.52
99 Gas-Condensing Water Heater - Natural Gas (EF=0.80)	SF	1.28
97 Indirect-fired domestic water heater - NG boiler w/ EF = 0.65	SF	0.79
100 High Efficiency Water Heater - Natural Gas (EF=0.67)	SF	0.73
101 Pipe Wrap - gas DHW	SF	0.33
102 Solar Water Heating - Active, w/ Gas Backup	SF	0.31
103 Low Flow Showerhead/Faucets -Oil	SF	8.39
104 Pipe Wrap - oil DHW	SF	1.52
105 High Efficiency Water Heater - Oil (EF=0.66)	SF	1.38
106 Solar Water Heating - Active, w/ Oil Backup	SF	0.72
107 Low Flow Showerhead/Faucets - LP Gas	SF	4.96
108 Gas-Condensing Water Heater - Propane (EF=0.80)	SF	3.59
109 High Efficiency Water Heater - Propane (EF=0.67)	SF	2.15
110 Pipe Wrap - Propane DHW	SF	0.91
111 Solar Water Heating - Active, w/ Propane Backup	SF	0.89
112 Energy Star Clothes Washer (w/ Gas DHW)	MF	1.74
113 Energy Star Clothes Washer (w/ Oil DHW)	MF	2.02
114 Energy Star Clothes Washer (w/ Propane DHW)	MF	2.24

NH Residential Sector, Non-Electric, Benefit Cost Results		
Measure Description	SF/MF	BC Ratio
115 Energy Star Dishwasher (w/Gas DHW)	MF	10.69
116 Beyond Energy Star Dishwasher (w/Gas DHW)	MF	6.09
117 Energy Star Dishwasher (w/Oil DHW)	MF	18.46
118 Beyond Energy Star Dishwasher (w/Oil DHW)	MF	10.37
119 Energy Star Dishwasher (w/Propane DHW)	MF	22.10
120 Beyond Energy Star Dishwasher (w/Propane DHW)	MF	12.38
121 High Efficiency Water Heater - Natural Gas (EF=0.62)	MF	2.53
122 Low Flow Showerhead/Faucets - Natural Gas	MF	1.76
124 Whole-House Tankless Water Heater - Nat Gas <=200 kBTUH	MF	1.52
125 Gas-Condensing Water Heater - Natural Gas (EF=0.80)	MF	1.28
123 Indirect-fired domestic water heater - NG boiler w/ EF = 0.65	MF	0.79
126 High Efficiency Water Heater - Natural Gas (EF=0.67)	MF	0.73
127 Pipe Wrap - gas DHW	MF	0.33
128 Solar Water Heating - Active, w/ Gas Backup	MF	0.31
129 Low Flow Showerhead/Faucets -Oil	MF	8.39
130 Pipe Wrap - oil DHW	MF	1.52
131 High Efficiency Water Heater - Oil (EF=0.66)	MF	1.38
132 Solar Water Heating - Active, w/ Oil Backup	MF	0.72
133 Low Flow Showerhead/Faucets - LP Gas	MF	4.96
134 Gas-Condensing Water Heater - Propane (EF=0.80)	MF	3.59
135 High Efficiency Water Heater - Propane (EF=0.67)	MF	2.15
136 Pipe Wrap - LPG DHW	MF	0.91
137 Solar Water Heating - Active, w/ Propane Backup	MF	0.89
New Construction Homes - Single Family/Multi Family		
138 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Gas Heat	SF	3.60
139 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Gas Heat	SF	2.24
140 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) -Gas Heat	SF	1.45
141 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - LPG Heat	SF	8.31
142 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - LPG Heat	SF	4.15
143 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - LPG Heat	SF	2.85
144 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Oil Heat	SF	16.19
145 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) -Oil Heat	SF	4.35
146 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Oil Heat	SF	2.87
147 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Gas Heat	MF	4.79
148 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - Gas Heat	MF	4.04
149 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) -Gas Heat	MF	2.97
150 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - LPG Heat	MF	12.53
151 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) - LPG Heat	MF	7.52
152 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - LPG Heat	MF	5.24
153 Integrated Building Design - Good (ENERGY STAR Home ~ 20% Savings) - Oil Heat	MF	12.09
154 Integrated Building Design - Better (ENERGY STAR Home ~35% Savings) -Oil Heat	MF	11.93
155 Integrated Building Design - Best (ENERGY STAR Home ~ 50% Savings) - Oil Heat	MF	7.34

NH Commercial Sector, Electric, Benefit Cost Results			
#	End Use	Measure Name	B/C Ratio
100		Appliances Computers & Office Equipment	
101	Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator	2.37
102	Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines.	1.02
103	Appliances, Computers, Office Equipment	TVs - Energy Star over standard	0.23
104	Appliances, Computers, Office Equipment	Energy Efficient "Smart" Power Strip for PC/Monitor/Printer	4.22
105	Appliances, Computers, Office Equipment	EZ Save Monitor Power Management Software	0.17
150		Water Heating End Use	
151	Water Heating	Commercial Dishwasher (Under Counter Hi-Temp, Electric DHW)	8.18
152	Water Heating	Commercial Dishwasher (Single Tank Conveyor Hi-Temp, - Electric DHW)	11.69
154	Water Heating	Commercial Clothes washers (Hotels, Laundromats, Restaurants, etc.) (w/ Electric DHW)	0.80
155	Water Heating	Commercial Clothes washers (Hotels, Laundromats, Restaurants, etc.) (w/ Non-Electric DHW)	0.31
156	Water Heating	Ozone Commercial Laundry System (Electric HW)	2.39
157	Water Heating	Heat Pump Water Heater	5.23
158	Water Heating	Booster Water Heater	0.66
159	Water Heating	Point of Use Water Heater	1.00
160	Water Heating	Solar Water Heating System	1.16
161	Water Heating	High Efficiency Electric Water Heater	5.07
162	Water Heating	Low Flow Pre-Rinse Spray Nozzle (Included in 2006 Federal Standards) (Electric HW)	47.65
200		Pools	
201	Pools	Energy Efficient Pool Pump with controls	1.02
202	Pools	High efficiency spas/hot tubs	1.54
203	Pools	Solar Pool Heater	17.34
204	Pools	Heat Pump Pool Heater	3.33
205	Pools	Temperature Control	6.43
206	Pools	Pool Cover	54.45
207	Pools	Liquid Pool Cover	2.15
300		Building Envelope	
301	Building Envelope	Integrated Building Design (Envelope Only)	13.18
302	Building Envelope	Energy Efficient Windows (Replace on Burnout)	15.44
303	Building Envelope	Interior Storm Windows (Low-e or double clear film)	0.84
320		Ventilation	
321	Ventilation	Dual Enthalpy Economizer - from Fixed Damper	8.46
322	Ventilation	Dual Enthalpy Economizer - from Dry Bulb	11.79
323	Ventilation	Demand-Controlled Ventilation (CO2 vent control)	6.37
324	Ventilation	Heat Recovery	1.74
325	Ventilation	Fan Motor, 40hp, 1800rpm, 94.1%	1.32
326	Ventilation	Fan Motor, 15hp, 1800rpm, 92.8%	1.75
327	Ventilation	Fan Motor, 5hp, 1800rpm, 90.4%	1.64
328	Ventilation	Variable Speed Drive Control, 15 HP	9.66
329	Ventilation	Variable Speed Drive Control, 5 HP	5.57
330	Ventilation	Variable Speed Drive Control, 40 HP	14.24
332	Ventilation	Underfloor Air distribution	25805.32
334	Ventilation	Variable Pitch Fans	7.52
335	Ventilation	Electronically-Commutated Permanent Magnet Motors (ECPMs)	6.11
336	Ventilation	Improved Duct Sealing	3.72
340		Space Cooling - Chillers	
341	Space Cooling - Chillers	Centrifugal Chiller, 0.51 kW/ton, 300 tons	4.25
342	Space Cooling - Chillers	Centrifugal Chiller, 0.51 kW/ton, 500 tons	4.30
343	Space Cooling - Chillers	Centrifugal Chiller, Optimal Design, 0.4 kW/ton, 500 tons	4.45
344	Space Cooling - Chillers	Chiller Tune Up/Diagnostics - 300 ton	3.02
345	Space Cooling - Chillers	Variable Refrigerant Volume/Flow	4.24
346	Space Cooling - Chillers	Dedicated Outdoor Air System	94946.31
347	Space Cooling - Chillers	Chiller Tune Up/Diagnostics - 500 ton	6.02
360		HVAC Controls	
361	HVAC Controls	Retrocommissioning	21.05
362	HVAC Controls	Programmable Thermostat	54.81
363	HVAC Controls	EMS install	3.16
364	HVAC Controls	EMS Optimization	0.88
365	HVAC Controls	System/Component Diagnostics	2.72
367	HVAC Controls	Hotel Guest Room Occupancy Control System	33.48
380		Space Cooling - Unitary and Split AC	
381	Space Cooling - Unitary and Split AC	HVAC Advanced Tune-Up	0.76
382	Space Cooling - Unitary and Split AC	High Efficiency AC - Unitary and Split Systems (Tier 2)	8.63
383	Space Cooling - Unitary and Split AC	High Efficiency AC - Unitary & Split AC Systems (Tier 3)	7.36
384	Space Cooling - Unitary and Split AC	Ductless (mini split)	1.24
385	Space Cooling - Unitary and Split AC	Comprehensive Track Proper HVAC Sizing	12.53
387	Space Cooling - Unitary and Split AC	Radiant Ceiling Cooling	6274.32
388	Space Cooling - Unitary and Split AC	Dedicated Outdoor Air System	94946.31
389	Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling	0.72
400		Cooking	
401	Cooking	HE Steamer	5.09
402	Cooking	HE Combination Oven	1.23
403	Cooking	HE Holding Cabinet	2.29
404	Cooking	HE Fryer - Electric	0.22
405	Cooking	Demand Ventilation Control	0.21
406	Cooking	Induction Cooktops	0.18
500		Lighting	
501	Lighting	Lamp & Ballast Retrofit (HP T8 Replacing T12)	6.57
502	Lighting	Lamp & Ballast Retrofit (HP T8 Replacing Standard T8)	4.75
503	Lighting	High Efficiency Fluorescent Fixtures (HP T8 Troffer Replacing T12)	12.68

NH Commercial Sector, Electric, Benefit Cost Results			
#	End Use	Measure Name	B/C Ratio
504	Lighting	High Efficiency Fluorescent Fixtures (Low Glare Troffer HPT8/T5 Replacing T12)	2.84
505	Lighting	High Intensity Fluorescent Fixtures (replacing HID) - Hi & Low Bay	3.94
506	Lighting	Fluorescent Fixtures with Reflectors	5.73
507	Lighting	CFL Fixture	13.67
508	Lighting	Replace Exterior Quartz Halogen w/PSMH or HPS	10.83
509	Lighting	Replace Exterior Metal Halide w/PSMH	8.74
510	Lighting	LED Exit Sign	1.32
511	Lighting	LEC Exit Sign	1.60
512	Lighting	LED Traffic / Pedestrian Signals	5.63
513	Lighting	HID Fixture - Pulse Start Metal Halide (Interior)	7.00
514	Lighting	Specialty Fixtures - Halogen Infra-Red Bulb	1.16
515	Lighting	Specialty Fixtures - Integrated Ballast 25W MH	1.84
516	Lighting	Specialty Fixtures - Induction Fluorescent 23W	2.72
517	Lighting	Specialty Fixtures - Metal Halide Track	2.51
518	Lighting	Cold Cathode Screw In	4.40
519	Lighting	LED Screw In	3.33
520	Lighting	CFL Screw-in	58.75
521	Lighting	LED Christmas type - decorative lighting	7.63
524	Lighting	Fluorescent Fixtures with Reflectors	2.33
550		Lighting Controls	
551	Lighting Controls	Controls for HID - Hi/Lo	0.17
552	Lighting Controls	Controls for HIF- Remote Mount Occupancy Sensor	3.00
553	Lighting Controls	Remote Mounted Occupancy Sensor - Non HIF	2.60
554	Lighting Controls	Switch Mounted Occupancy Sensor	4.07
555	Lighting Controls	Daylight Controlled Dimming Ballast	0.11
556	Lighting Controls	Daylight Dimming - New Construction	0.70
557	Lighting Design	5% More Efficient Lighting Design - Existing Construction	2.24
558	Lighting Design	10% More Efficient Lighting Design - Existing Construction	2.21
559	Lighting Design	15% More Efficient Design - New Construction	8.96
561	Lighting Design	30% More Efficient Design - New Construction	8.11
600		Refrigeration	
601	Refrigeration	Vending Miser for Soft Drink Vending Machines	4.62
602	Refrigeration	Vending Miser for Non-Refrigerated Machines	2.50
603	Refrigeration	Refrigerated Case Covers	9.24
604	Refrigeration	Refrigeration Economizer	0.26
605	Refrigeration	Commercial Reach-In Cooler	5.40
606	Refrigeration	Commercial Reach-In Freezer	5.94
607	Refrigeration	Commercial Ice-makers	3.62
608	Refrigeration	Evaporator Fan Motor Controls	1.04
609	Refrigeration	H.E. Evaporative Fan Motors	11.13
610	Refrigeration	Zero-Energy Doors - Coolers	2.68
611	Refrigeration	Zero-Energy Doors - Freezers	2.64
612	Refrigeration	Door Heater Controls	10.45
613	Refrigeration	Discuss Compressor	2.65
614	Refrigeration	Scroll Compressor	2.82
615	Refrigeration	Floating Head Pressure Control	2.10
616	Refrigeration	ECM Motors	4.28
617	Refrigeration	Air Curtains (replacing electric door heaters)	123.58
619	Refrigeration	LED lighting retrofits in refrigeration end-uses/display cases	0.89
700		Compressed Air	
701	Compressed Air	Compressed Air – Non-Controls	9.37
702	Compressed Air	Compressed Air – Controls	0.76
715		Transformers	
716	Transformers	Energy Efficient Transformers	7.03
740		Space Heating	
741	Space Heating	High Efficiency Heat Pump	3.54
742	Space Heating	Water Source Heat Pump	3.95
743	Space Heating	Ground Source Heat Pump	0.72
744	Space Heating	Ductless (mini split)	1.24
780		Non-HVAC Motors	
781	Non-HVAC Motors	Efficient Motors	15.81
782	Non-HVAC Motors	Variable Frequency Drives (VFD)	4.86

NH Commercial Sector, Non-Electric, Benefit Cost Results			
#	End Use	Measure Name	B/C Ratio
100		Water Heating End Use	
101	Water Heating	High Efficiency Clothes Washer	7.32
102	Water Heating	High Efficiency Water Heater>=62%	4.59
103	Water Heating	On Demand Water Heater	1.26
104	Water Heating	Pipe Insulation	4.34
105	Water Heating	Tank Insulation	17.26
106	Water Heating	Low Flow Shower Heads	112.73
107	Water Heating	Low Flow Pre-Rinse Spray Nozzle	65.97
108	Water Heating	Faucet Aerator	293.03
111	Water Heating	Indirect Fired Water Heating Systems	3.99
113	Water Heating	Ozone Commercial Laundry System	1.85
114	Water Heating	Solar Water Heating System	0.26
200		Pools	
201	Pools	High Efficiency Spa/Hot Tub Heater	3.93
202	Pools	High Efficiency (95%) Gas Pool Water Heater	8.01
204	Pools	Pool Cover	46.02
205	Pools	Solar Pool Heater	10.97
300		Building Envelope	
301	Building Envelope	Integrated Building Design, Envelope Only (30% > code)	3.08
302	Building Envelope	Energy Efficient Windows	10.81
303	Building Envelope	Interior Storm Windows (Low-e or double clear film)	0.32
304	Building Envelope	Loading dock Seals	15.38
305	Building Envelope	Air curtains	0.43
306	Building Envelope	Exterior Door Insulation	0.46
307	Building Envelope	Exhaust hood makeup air	1.21
308	Building Envelope	Demand-Controlled Ventilation (CO2 vent control)	3.17
309	Building Envelope	Insulated Overhead Doors	17.04
312	Building Envelope	Roof Insulation (only when re-roofing)	2.77
313	Building Envelope	Wall Insulation	0.48
400		Ventilation	
404	Ventilation	Improved Duct Sealing (also for heating & cooling)	0.58
405	Ventilation	Dedicated Outdoor Air Systems (DOAS) (reduces both AC & htg)	1931.14
600		HVAC Controls	
601	HVAC Controls	Retrocommissioning	4.33
602	HVAC Controls	Commissioning	1.16
603	HVAC Controls	Programmable Thermostat	29.27
604	HVAC Controls	EMS install	1.18
605	HVAC Controls	EMS Optimization	0.88
800		Cooking	
801	Cooking	High Efficiency Gas Griddle	0.92
802	Cooking	High Efficiency Gas Combination Oven	4.82
803	Cooking	High Efficiency Gas Convection Oven	5.51
804	Cooking	High Efficiency Gas Conveyor Oven	7.66
805	Cooking	High Efficiency Gas Rack Oven	1.64
806	Cooking	High Efficiency Gas Broiler	7.28
807	Cooking	Power Burner Oven	1.76
808	Cooking	Energy Star Fryer	6.38
809	Cooking	Demand Ventilation Control	2.65
810	Cooking	High Efficiency Gas Steamer	15.43
900		Space Heating	
901	Space Heating	Efficient Furnace Fan (Non-Electric Furnace)	1.37
905	Space Heating	Infrared Heater	16.10
906	Space Heating	High Efficiency Furnace (AFUE>=92%)	6.74
907	Space Heating	High Efficiency Hot Water Boiler(AFUE>=85%)	1.78
908	Space Heating	High Efficiency Steam Boiler	4.00
909	Space Heating	Condensing Boiler	1.09
910	Space Heating	Boiler- Heating Pipe Insulation	9.75
911	Space Heating	Boiler Tune-Up	36.67
912	Space Heating	Stack Heat Exchanger	13.14
913	Space Heating	Heat Recovery from Air to Air	0.97
914	Space Heating	Boiler Reset Controls (We're Aware of This Problem & Looking Into it - BC Ratio Extremely High)	616.59
915	Space Heating	Boiler O2 Trim Controls	3.39
916	Space Heating	Boiler blowdown heat exchanger (steam)	3.92
917	Space Heating	Repair malfunctioning steam traps	40.60
918	Space Heating	Steam trap maintenance	8.48
920	Space Heating	Filter replacement	31.82
921	Space Heating	De-stratification Fans	8.42
922	Space Heating	Improved Duct Sealing	0.42
923	Space Heating	CHP	10.20
924	Space Heating	ECM - 92% (packaged with a high efficiency furnace)	6.52
928	Space Heating	Energy and Heat Recovery Ventilators (ERV/HRV)	1.24
930	Space Heating	Refrigeration waste heat recovery	5.12

NH Industrial Sector Benefit Cost Results

Industrial Sector - Electric	
End Use	B/C Ratio
Process Heating	7.35
Process Cooling and Refrigeration	7.88
Machine Drive	4.33
Facility HVAC	1.99
Facility Lighting	8.35
Compressed Air	3.83
Sensors & Controls	4.10
Other Facility Support	2.48
End Use Not Reported	2.48

Industrial Sector - Non-Electric	
End Use	B/C Ratio
Conventional Boiler Use	8.75
Process Heating	25.06
Facility HVAC	3.27
Other Facility Support	1.72
End Use Not Reported	4.43

Benefit/Cost Model Key Inputs, Assumptions, and Results

Input Assumptions

Input Assumption Sources		
Discount Rate	5.00%	Prime Rate as of June 1st 2008
Inflation Rate	2.70%	2.7% Inflation Rate from AESC 2007 Avoided Costs

Energy, Demand, T & D Costs and Program-level Realization Rate

										Base Year (Yr 1):	2008	T&D Inf Rate	2.70%
Electric Energy Loss Multipliers				Electric Demand Loss Multipliers		Reserve Margin Multiplier	Avoided T&D Costs (\$/kWYr)			T & D Loss Multiplier	Program-Level Realization Rate (in %)		
Winter		Summer		Winter	Summer		Residential	C & I	T & D Loss Multiplier				
On Peak	Off Peak	On Peak	Off Peak	Winter	Summer								
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.1430	\$53.03	\$53.03	1.00800	100%			
Source: Revised 9-13-07 Attachment C for 2008 Plan							MDC	MTC	T&D Cap Loss				
Secondary Delivery Voltage:	1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.14	\$42.66	\$42.66	\$10.37	1.0080		
Primary Delivery Voltage:	1.0389	1.0303	1.0389	1.0303	1.0553	1.0563	1.14	\$42.66	\$42.66	\$10.37	1.0080		

Measure Type & Load Reduction Factor Lookup Table

Measure Type	Load Reduction Factor (kW/kWh)	Annual Demand Coincidence		Allocation of Annual Energy Savings by Season							
		Winter	Summer	Winter		Summer					
		Peak	Off Peak	Peak	Off Peak						
Appliances	0.000250	100%	20%	26%	41%	13%	20%				
Continuous Running Equipment	0.000114	100%	100%	26%	41%	13%	20%				
Cooling - C/I	0.000731	0%	100%	3%	2%	80%	15%				
Cooling - Residential	0.001668	0%	100%	0%	0%	48%	52%				
Heating - C/I	0.000643	100%	0%	60%	35%	5%	0%				
Heating - Residential	0.000658	81%	20%	46%	43%	6%	5%				
Heating-Water	0.000436	72%	48%	50%	20%	21%	9%				
Lighting - C/I	0.000386	100%	17%	37%	29%	19%	15%				
Lighting - Residential	0.000436	100%	17%	31%	36%	15%	18%				
Other - C/I	0.000276	100%	100%	27%	39%	14%	20%				
Process - C/I	0.000270	100%	100%	30%	37%	15%	18%				
Refrigeration - Residential	0.000188	71%	95%	34%	31%	18%	16%				
Shell Measures (Heat & Cool) - C/I	0.000687	100%	100%	32%	19%	43%	8%				
Shell Measures (Heat & Cool) - Residential	0.001163	100%	100%	23%	21%	27%	28%				
X Custom	These "X Custom" parameters must be entered for the appropriate measures in "Program" tab										

Benefit/Cost Model Key Inputs, Assumptions, and Results

Avoided Cost Forecast Data (Natural Gas, Other Fuels, and Electric) in Real Dollars:

Natural Gas Forecast (REAL \$/MMB' Source:			AESC - 2007 Avoided Costs 083107New_AESC 2007 AppendixF_OtherFuelCostsBySector(1)						
Data Year	Commercial & Industrial			Residential				All Retail	
	Non Heating	Heating	All	Existing Heat	New Heating	Hot Water	All Residential		
2007	10.58	11.63	11.32	12.88	12.71	11.65	12.39	12.12	
2008	11.57	12.69	12.35	13.95	13.77	12.65	13.43	13.18	
2009	11.05	12.14	11.81	13.39	13.21	12.13	12.88	12.63	
2010	10.51	11.55	11.24	12.81	12.63	11.58	12.31	12.04	
2011	10.03	11.05	10.74	12.30	12.12	11.11	11.82	11.54	
2012	9.68	10.67	10.37	11.92	11.74	10.75	11.44	11.16	
2013	9.02	9.97	9.68	11.21	11.04	10.10	10.76	10.46	
2014	9.08	10.03	9.75	11.28	11.11	10.16	10.82	10.52	
2015	9.03	9.98	9.70	11.23	11.06	10.11	10.77	10.47	
2016	9.18	10.13	9.85	11.38	11.21	10.25	10.92	10.62	
2017	9.44	10.41	10.12	11.66	11.49	10.51	11.20	10.90	
2018	9.36	10.33	10.04	11.57	11.40	10.43	11.11	10.82	
2019	9.31	10.28	9.99	11.52	11.35	10.39	11.06	10.77	
2020	9.44	10.41	10.12	11.66	11.49	10.51	11.19	10.90	
2021	9.54	10.52	10.23	11.77	11.60	10.62	11.30	11.01	
2022	9.80	10.81	10.51	12.05	11.88	10.88	11.58	11.30	
2023	9.90	10.91	10.61	12.17	12.00	10.99	11.70	11.41	
2024	10.00	11.02	10.72	12.30	12.12	11.10	11.81	11.52	
2025	10.10	11.13	10.82	12.42	12.24	11.21	11.93	11.64	
2026	10.20	11.24	10.93	12.54	12.36	11.32	12.05	11.75	
2027	10.31	11.36	11.04	12.67	12.49	11.43	12.17	11.87	
2028	10.41	11.47	11.15	12.80	12.61	11.55	12.29	11.99	
2029	10.51	11.58	11.26	12.92	12.74	11.66	12.42	12.11	
2030	10.62	11.70	11.38	13.05	12.86	11.78	12.54	12.23	
2031	10.72	11.82	11.49	13.18	12.99	11.90	12.67	12.35	
2032	10.83	11.94	11.60	13.32	13.12	12.02	12.79	12.48	
2033	10.94	12.05	11.72	13.45	13.25	12.14	12.92	12.60	
2034	11.05	12.18	11.84	13.58	13.39	12.26	13.05	12.73	
2035	11.16	12.30	11.96	13.72	13.52	12.38	13.18	12.86	
2036	11.27	12.42	12.08	13.86	13.66	12.51	13.31	12.98	
2037	11.38	12.54	12.20	13.99	13.79	12.63	13.44	13.11	
2038	11.50	12.67	12.32	14.13	13.93	12.76	13.58	13.24	
2039	11.61	12.80	12.44	14.28	14.07	12.89	13.71	13.38	
2040	11.73	12.92	12.57	14.42	14.21	13.01	13.85	13.51	

Source: AESC - 2007 Avoided Costs 083107New_AESC 2007_AppendixF_OtherFuelCostsBySector(1)

Fuel Oil (REAL \$/MMBTU)				
Forecast by Sector and Fuel				
Year	No. 2 Distillate Retail		No. 6 Residual Fuel <= 1% Sulfur Retail	No. 4 Fuel Oil Retail
	Res	Com		
	\$/MMBTU	\$/MMBTU		
Data Year	2007	2007	2007	2007
2007	15.84	13.97	9.46	11.71
2008	16.43	14.49	9.82	12.15
2009	16.05	14.15	9.59	11.87
2010	15.58	13.74	9.31	11.52
2011	15.10	13.32	9.03	11.17
2012	14.67	12.94	8.77	10.85
2013	14.22	12.54	8.50	10.52
2014	14.03	12.37	8.38	10.38
2015	14.10	12.43	8.42	10.43
2016	14.16	12.49	8.46	10.47
2017	14.29	12.60	8.54	10.57
2018	14.42	12.72	8.62	10.67
2019	14.55	12.83	8.69	10.76
2020	14.68	12.95	8.77	10.86
2021	14.88	13.12	8.89	11.00
2022	15.07	13.29	9.01	11.15
2023	15.27	13.47	9.12	11.30
2024	15.46	13.64	9.24	11.44
2025	15.66	13.81	9.36	11.58
2026	15.79	13.92	9.44	11.68
2027	15.92	14.04	9.51	11.78
2028	16.05	14.16	9.59	11.87
2029	16.18	14.27	9.67	11.97
2030	16.31	14.39	9.75	12.07
2031	16.48	14.53	9.85	12.19
2032	16.64	14.68	9.94	12.31
2033	16.81	14.82	10.04	12.43
2034	16.98	14.97	10.14	12.56
2035	17.15	15.12	10.25	12.68
2036	17.32	15.27	10.35	12.81
2037	17.49	15.42	10.45	12.94
2038	17.67	15.58	10.56	13.07
2039	17.84	15.73	10.66	13.20
2040	18.02	15.89	10.77	13.33

Other Fuels (REAL \$/MMBTU)							
Forecast: Other Fuels				Central New England Forecast: Other Fuels			
Year	Propane Retail			Kerosene Retail*	Wood Retail		BioFuel
	Residential	Commercial	Industrial		Residential	Firewood-Seasoned	
Data Year	2007	2007	2007	2007	2007	2007	2007
2007	26.81	26.81	26.81	16.47	5.67	7.43	15.84
2008	28.76	28.76	28.76	17.09	5.88	7.71	16.43
2009	28.97	28.97	28.97	16.69	5.75	7.53	16.05
2010	29.43	29.43	29.43	16.20	5.58	7.31	15.58
2011	29.71	29.71	29.71	15.71	5.41	7.09	15.10
2012	30.08	30.08	30.08	15.26	5.26	6.88	14.67
2013	29.61	29.61	29.61	14.79	5.09	6.67	14.22
2014	29.63	29.63	29.63	14.60	5.03	6.58	14.03
2015	29.55	29.55	29.55	14.66	5.05	6.61	14.10
2016	29.60	29.60	29.60	14.73	5.07	6.64	14.16
2017	29.85	29.85	29.85	14.86	5.12	6.70	14.29
2018	29.76	29.76	29.76	15.00	5.17	6.77	14.42
2019	29.69	29.69	29.69	15.13	5.21	6.83	14.55
2020	29.80	29.80	29.80	15.27	5.26	6.89	14.68
2021	29.67	29.67	29.67	15.47	5.33	6.98	14.88
2022	29.82	29.82	29.82	15.68	5.40	7.07	15.07
2023	29.97	29.97	29.97	15.88	5.47	7.16	15.27
2024	30.01	30.01	30.01	16.09	5.54	7.26	15.46
2025	30.02	30.02	30.02	16.29	5.61	7.35	15.66
2026	30.05	30.05	30.05	16.42	5.66	7.41	15.79
2027	30.15	30.15	30.15	16.56	5.70	7.47	15.92
2028	30.31	30.31	30.31	16.70	5.75	7.53	16.05
2029	30.41	30.41	30.41	16.83	5.80	7.59	16.18
2030	30.45	30.45	30.45	16.97	5.84	7.65	16.31
2031	30.75	30.75	30.75	17.14	5.90	7.73	16.48
2032	31.06	31.06	31.06	17.31	5.96	7.81	16.64
2033	31.37	31.37	31.37	17.48	6.02	7.89	16.81
2034	31.68	31.68	31.68	17.66	6.08	7.97	16.98
2035	32.00	32.00	32.00	17.83	6.14	8.04	17.15
2036	32.32	32.32	32.32	18.01	6.20	8.13	17.32
2037	32.64	32.64	32.64	18.19	6.26	8.21	17.49
2038	32.97	32.97	32.97	18.38	6.33	8.29	17.67
2039	33.30	33.30	33.30	18.56	6.39	8.37	17.84
2040	33.63	33.63	33.63	18.74	6.45	8.46	18.02

Benefit/Cost Model Key Inputs, Assumptions, and Results

Electric Avoided Cost Forecast (REAL \$) Source: 083107Revision AESC 2007 AppendixE_FinalAvoidedElectricCosts_Constant\$(1) - Worksheet - NH-CS						
Data Year	Marginal Wholesale Power Price					
	Winter Peak Energy \$/kWh	Winter Off-Peak Energy \$/kWh	Summer Peak Energy \$/kWh	Summer Off-Peak Energy \$/kWh	Summer Capacity \$/kW-yr	Winter Capacity \$/kW-yr
2007	0.089	0.066	0.090	0.069	0.000	0.000
2008	0.099	0.075	0.092	0.070	0.000	0.000
2009	0.093	0.072	0.090	0.067	0.000	0.000
2010	0.092	0.068	0.090	0.064	60.498	0.000
2011	0.088	0.066	0.088	0.062	109.112	0.000
2012	0.089	0.067	0.093	0.064	122.076	0.000
2013	0.085	0.062	0.088	0.061	129.639	0.000
2014	0.088	0.063	0.090	0.062	129.639	0.000
2015	0.086	0.063	0.091	0.062	129.639	0.000
2016	0.088	0.064	0.093	0.065	129.639	0.000
2017	0.091	0.067	0.097	0.065	129.639	0.000
2018	0.089	0.066	0.094	0.065	129.639	0.000
2019	0.088	0.064	0.097	0.065	129.639	0.000
2020	0.089	0.066	0.098	0.065	129.639	0.000
2021	0.090	0.067	0.100	0.065	129.639	0.000
2022	0.092	0.068	0.103	0.066	129.639	0.000
2023	0.094	0.069	0.105	0.067	129.639	0.000
2024	0.095	0.070	0.106	0.068	129.639	0.000
2025	0.096	0.071	0.108	0.069	129.639	0.000
2026	0.098	0.072	0.110	0.070	129.639	0.000
2027	0.099	0.073	0.111	0.071	129.639	0.000
2028	0.100	0.074	0.113	0.072	129.639	0.000
2029	0.102	0.075	0.114	0.073	129.639	0.000
2030	0.103	0.076	0.116	0.074	129.639	0.000
2031	0.105	0.077	0.118	0.075	129.639	0.000
2032	0.106	0.078	0.119	0.076	129.639	0.000
2033	0.108	0.080	0.121	0.078	129.639	0.000
2034	0.110	0.081	0.123	0.079	129.639	0.000
2035	0.111	0.082	0.125	0.080	129.639	0.000
2036	0.113	0.083	0.126	0.081	129.639	0.000
2037	0.114	0.084	0.128	0.082	129.639	0.000
2038	0.116	0.086	0.130	0.083	129.639	0.000
2039	0.118	0.087	0.132	0.085	129.639	0.000
2040	0.119	0.088	0.134	0.086	129.639	0.000