

Info

Purpose:	CLF PSNH Merrimack
Project:	13-079
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Author:	Pat Knight/Liz Stanton/Joe Daniels
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Scen5	Revenue Requirements Analysis - Scenario 5: Low Env. Retrofit Case, High Gas Case
Env_Costs	Cost of environmental retrofits
Emissions	Historical emissions; future allowance costs
CO2_prices	Future CO2 cost sensitivities
AESC	Future allowance prices and energy prices from AESC 2013
Capacity_Prices	Capacity prices
Energy_Prices	Historical energy prices
Financial_Assumptions	Information on tax rates, discount rates, depreciation, etc.
FERC_f1	Historical data on plant operating costs

Exhibit 1. Merrimack Analysis - Historical Expenses and Revenues

2008				
Operating Characteristics				
Plant Capacity	MW	452.0		
Capacity Factor	%	72%	72%	Assuming 2008 generation and capacity factor for all years post-2008
Fuel Cost	2012 \$ 000	103,470		
Heat Input	MMBtu	15,891		
Cost	2012 \$/MMBtu	6.51		
Generation	GWh	2,853	2,853	Assuming 2008 generation and capacity factor for all years post-2008
Expenses				
Oper, Supv, & Engr	2012 \$ 000	1,120		
Fuel	2012 \$ 000	103,470		
Steam etc.	2012 \$ 000	15,148		
Allowances	2012 \$ 000	7,635		
Maintenance	2012 \$ 000	31,374		
Total Production Expenses	2012 \$ 000	158,747		
Costs per MWh				
Fuel Cost	2012 \$/MWh	36.27	36.3	Assuming 2008 average fuel cost for all years post-2008
O&M Cost	2012 \$/MWh	16.70	16.7	Assuming 2008 average fuel cost for all years post-2008
Allowance Cost	2012 \$/MWh	2.68		
Production cost	2012 \$/MWh	55.64		
Rate Base				
Avg Return on Rate Base	%	9.63%	PUC Order No. 24,473	
Rate Base Value	2012 \$ 000	120,834		
Rate Base Return	2012 \$ 000	11,636		
Plant Expenses				
Total Production Expenses	2012 \$ 000	158,747		
Rate Base Return	2012 \$ 000	11,636		
Annual Depreciation	2012 \$ 000	16,571		
Revenue Requirements	2012 \$ 000	186,955		
Market Prices				
Capacity Prices	2012 \$/kW-yr	43.87		
Energy Prices	2012 \$/MWh	87.05		
Market Revenues				
Capacity Revenue	2012 \$ 000	19,828		
Energy Revenue	2012 \$ 000	248,343		
Total Revenue	2012 \$ 000	268,171		
Net Revenue				
Revenue Requirements	2012 \$ 000	186,955		
Total Revenue	2012 \$ 000	268,171		
Net Revenue	2012 \$ 000	81,217		

Exhibit 2. Results of Scenario Analysis - Net Benefits

Net Benefits (2012 \$ 000)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Scenario 1: Reference Case	93,848	-65,817	-93,530	-74,542	-60,832	-67,426	-62,624	-55,528	-45,956	-31,791	-43,674	-41,119	-39,919	-38,486	-35,246	-34,135	-39,211	-44,842	-49,453	-54,618
Scenario 2: Low Env. Retrofit Case, Low Gas Case	80,280	-1,366	-26,899	-41,955	-40,239	-39,927	-36,094	-26,029	-18,405	-9,301	-89	6,970	-418	919	4,061	5,070	4,694	3,760	3,843	3,369
Scenario 3: High Env. Retrofit Case, High Gas Case	85,126	-103,619	-124,305	-134,515	-127,953	-122,795	-114,117	-109,322	-107,469	-97,357	-86,973	-78,577	-73,074	-71,963	-69,005	-68,138	-73,420	-79,217	-83,955	-89,209
Scenario 4: High Env. Retrofit Case, Low Gas Case	80,280	-113,311	-138,843	-153,899	-152,183	-151,871	-148,039	-148,090	-151,083	-145,817	-140,279	-136,729	-136,072	-134,961	-132,003	-131,136	-136,418	-142,215	-146,953	-152,207
Scenario 5: Low Env. Retrofit Case, High Gas Case	85,126	8,326	-12,361	-22,571	-16,009	-10,850	-2,172	12,739	25,209	39,159	53,217	65,122	62,580	63,917	67,059	68,068	67,692	66,758	66,841	66,367

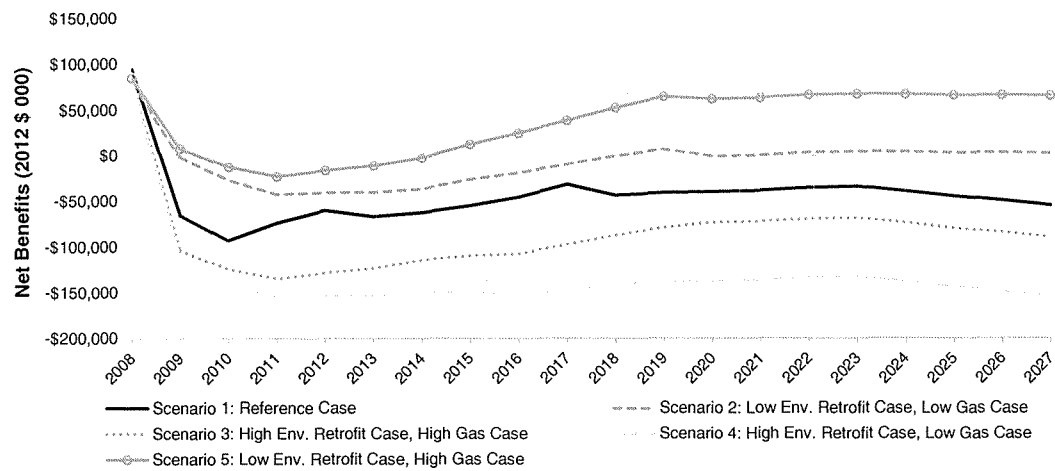
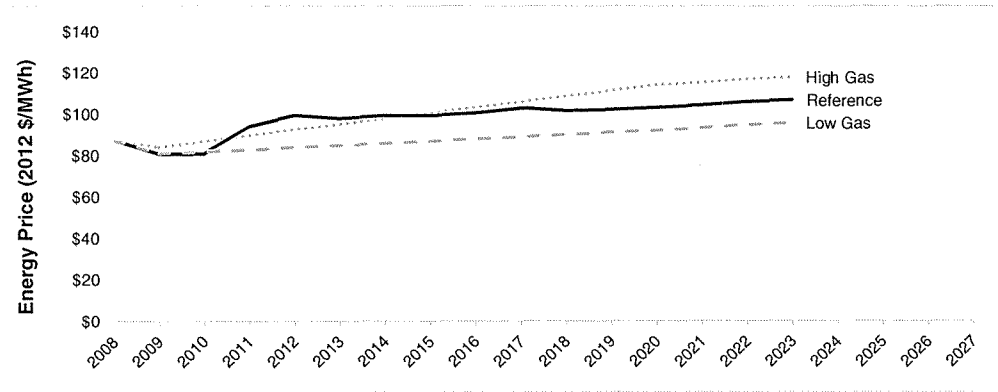


Exhibit 3. Market Prices

Energy Price (2012 \$/MWh)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
High Gas	\$87.05	\$84.14	\$86.88	\$89.62	\$92.36	\$95.10	\$97.84	\$100.58	\$103.32	\$106.06	\$108.79	\$111.53	\$114.27	\$115.38	\$117.03	\$117.86	#N/A	#N/A	#N/A	#N/A
Reference	\$87.05	\$80.60	\$80.87	\$93.85	\$99.09	\$97.71	\$99.09	\$99.09	\$100.47	\$102.96	\$101.58	\$102.13	\$103.23	\$104.34	\$105.99	\$106.82	#N/A	#N/A	#N/A	#N/A
Low Gas	\$87.05	\$80.75	\$81.79	\$82.83	\$83.87	\$84.91	\$85.95	\$86.99	\$88.03	\$89.07	\$90.11	\$91.15	\$92.19	\$93.29	\$94.95	\$95.78	#N/A	#N/A	#N/A	#N/A



Capacity Price (2012 \$/kW-yr)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Reference	\$43.87	\$50.17	\$52.96	\$49.50	\$39.95	\$30.65	\$29.00	\$41.00	\$53.00	\$65.00	\$77.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00	\$84.00

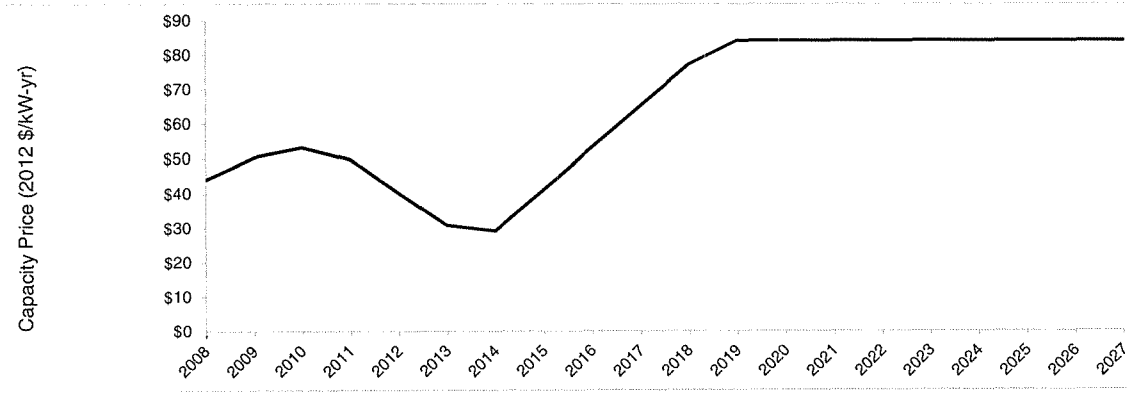
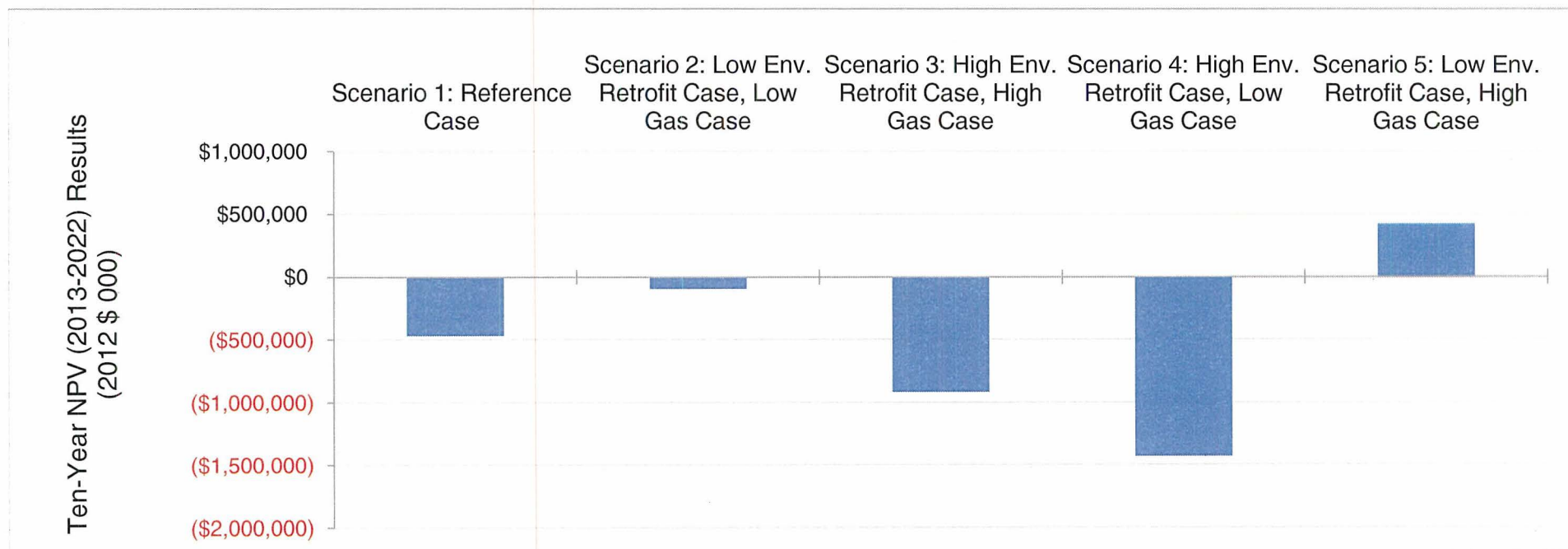


Exhibit 4. Environmental Retrofit Assumptions

Environmental Assumptions	Low Case	Reference Case	High Case
FGD		Already Controlled	
SCR		Already Controlled	
Baghouse	None	None	None
ACI	2016	2016	2015
Cooling	2020	2018	2016
	(Impingement controls)	(Impingement controls, closed cooling on all facilities >125 MGD)	(Impingement controls, closed cooling on all facilities)
Coal Combustion Residuals	2020	2018	2015
	(Subtitle D)	(Subtitle D)	(Subtitle C)
Effluent	2020	2018	2016
	(EPA Technology Option 3a)	(EPA Technology Option 3)	(EPA Technology Option 4a)

Exhibit 5. Ten-Year NPV (2013-2027) Results

		Scenario 1: Reference Case	Scenario 2: Low Env. Retrofit Case, Low Gas Case	Scenario 3: High Env. Retrofit Case, High Gas Case	Scenario 4: High Env. Retrofit Case, Low Gas Case	Scenario 5: Low Env. Retrofit Case, High Gas Case
Expenses						
Total Expenses	2012 \$ 000	\$3,341,627	\$2,639,510	\$3,919,830	\$3,919,830	\$2,639,510
Rate Base Return	2012 \$ 000	\$379,971	\$370,572	\$428,307	\$428,307	\$370,572
Revenue Requirements	2012 \$ 000	\$3,721,598	\$3,010,082	\$4,348,137	\$4,348,137	\$3,010,082
Revenues						
Capacity Revenue	2012 \$ 000	\$299,163	\$299,163	\$299,163	\$299,163	\$299,163
Energy Revenue	2012 \$ 000	\$2,953,465	\$2,614,388	\$3,130,655	\$2,614,388	\$3,130,655
Total Revenue	2012 \$ 000	\$3,252,628	\$2,913,551	\$3,429,818	\$2,913,551	\$3,429,818
Net Revenue						
Expenses	2012 \$ 000	\$3,721,598	\$3,010,082	\$4,348,137	\$4,348,137	\$3,010,082
Revenues	2012 \$ 000	\$3,252,628	\$2,913,551	\$3,429,818	\$2,913,551	\$3,429,818
Net Revenue	2012 \$ 000	(\$468,970)	(\$96,531)	(\$918,319)	(\$1,434,586)	\$419,736



Scenario 1: Reference Case

Revenue Requirements Analysis

Merrimack Units 1 & 2

(All values in 2012 \$ 000)

Ref	Environmental Retrofit Case
Ref	Gas Prices

	Notes	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	NPV 2013-2027
Expenses																						
Non-Fuel O&M	1	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	40,744	\$408,940
Additional Environmental O&M	2	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	2,988	
Allowances	3	7,635	139,833	139,833	139,833	139,833	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	132,494	139,702	146,910	154,118	\$1,291,596
Total Non-Fuel O&M	4	51,364	183,563	183,563	183,563	183,563	172,928	172,928	172,928	172,928	172,928	172,928	172,928	172,928	172,928	172,928	172,928	185,257	192,465	199,673	206,881	\$1,843,032
Fuel and Fuel Related Expenses	5	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	\$1,038,523
Property Tax	6	477	1,074	2,018	2,589	2,908	2,956	3,005	3,054	3,107	3,160	3,342	3,523	3,705	3,886	4,068	4,249	4,430	4,612	4,793	4,975	\$36,548
Depreciation Expense	7		7,961	20,559	28,169	32,412	33,062	33,711	34,361	35,012	35,764	38,203	40,622	43,041	45,460	47,879	50,299	52,718	55,137	57,556	59,975	\$423,524
Total Expenses	8	155,311	296,067	309,610	317,791	311,718	312,416	313,115	313,813	315,952	316,717	330,271	332,872	335,473	338,073	340,674	343,274	353,083	362,892	372,700	382,509	\$3,341,627
Plant Values																						
Capital Additions - General	9	47,627	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	
Capital Additions - Environmental	10	47,593	109,657	179,227	104,414	53,608	0	0	0	0	0	26,546	26,546	26,546	26,546	26,546	26,546	26,546	26,546	26,546	26,546	
Value of Plant Additions	11	95,320	214,730	403,699	517,854	581,505	591,246	600,988	610,730	621,402	632,073	668,361	704,648	740,936	777,223	813,511	849,798	886,086	922,373	958,661	994,948	
Accum. Depreciation	12	0	7,961	28,519	56,688	89,100	122,162	155,873	190,234	225,306	261,090	299,292	339,914	382,955	428,415	476,295	526,593	579,311	634,448	692,004	751,979	
Net Plant Value	13	95,320	206,769	375,179	461,166	492,404	469,084	445,115	420,496	396,096	370,984	369,068	364,734	357,981	348,808	337,216	323,205	306,775	287,926	266,657	242,970	
Working Capital	14																					
Year End Fuel Inventory	15	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	
Emissions Inventory	16																					
Accum. Deferred Income Tax	17																					
M&S Inventory	18																					
Total Rate Base	19	120,834	232,282	400,693	486,679	517,917	494,598	470,628	446,010	421,609	396,497	394,582	390,247	383,494	374,321	362,729	348,718	332,288	313,439	292,170	268,463	
Average Return on Rate Base	20	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	
Return on Rate Base	21	11,636	22,369	38,587	46,867	49,875	47,630	45,322	42,951	40,601	38,183	37,998	37,581	36,930	36,047	34,931	33,582	31,999	30,184	28,136	25,855	\$379,971
Revenue Requirements	22	166,947	318,436	348,197	364,658	361,594	360,046	358,436	356,763	358,553	354,900	368,270	370,453	372,403	374,120	375,605	376,856	385,082	393,076	400,836	408,364	\$3,721,598
Revenues																						
Capacity Factor	23	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	
Generation (GWh)	24	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	
Average Price (\$/MWh)	25	84.5	80.6	80.9	93.8	99.1	97.7	99.1	99.1	100.5	103.0	101.6	102.1	103.2	104.3	106.0	106.8	107.9	108.8	109.9	110.7	
Energy Revenue	26	240,968	229,943	230,730	267,742	282,704	278,767	282,704	282,704	286,641	293,729	289,791	291,366	294,516	297,666	302,391	304,753	307,903	310,266	313,415	315,778	\$2,953,465
Capacity (MW)	27	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	
Capacity Price	28	43.9	50.2	53.0	49.5	40.0	30.7	29.0	41.0	53.0	65.0	77.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	
Capacity Revenue	29	19,828	22,676	23,936	22,374	18,057	13,854	13,108	16,532	23,956	29,380	34,804	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	\$299,163
Ancillary	30																					
Total Revenue	31	260,796	252,619	254,667	290,116	300,761	292,620	295,812	301,236	310,597	323,109	324,595	329,334	332,484	335,634	340,359	342,721	345,871	348,234	351,383	353,746	\$3,252,628
Net Revenue	32	93,848	-65,817	-93,530	-74,542	-60,832	-67,426	-62,624	-55,528	-45,956	-31,791	-43,674	-41,119	-39,919	-38,486	-35,246	-34,135	-39,211	-44,842	-49,453	-54,618	(\$468,970)
Net Cash Flow	33	105,485	-43,448	-54,943	-27,675	-10,957	-19,766	-17,303	-12,577	-5,355	6,392	-5,676	-3,538	-2,988	-2,439	-315	-553	-7,212	-14,658	-21,317	-28,763	(\$88,999)
Generation Operations																						
Variable Expenses	34	111,105	243,303	243,303	243,303	228,756	228,756	228,756	228,756	228,756	228,756	228,756	228,756	228,756	228,756	228,756	228,756	235,964	243,172	250,380	257,588	\$2,330,119
Energy Revenue	35	240,968	229,943	230,730	267,742	282,704	278,767	282,704	282,704	286,641	293,729	289,791	291,366	294,516	297,666	302,391	304,753	307,903	310,266	313,415	315,778	\$2,953,465
Net Margin	36	129,863	-13,360	-12,573	24,439	53,948	50,010	53,948	53,948	57,885	64,972	61,035	62,610	65,760	68,910	73,634	75,997	71,939	67,003	63,035	58,190	\$623,346

Notes

- Historic values from FERC Form 1. Future values use 2008 average.
- Forecasted environmental retrofit-related O&M expenses from Sargent & Lundy.
- Historic values from FERC Form 1 and then based on AESC emission prices and emission rates from CAMD.
- Sum of 1, 2 & 3
- Based on 2008 average from Form 1 adjusted for assumed generation (23).
- Nominal 0.5% of gross plant value.
- Synapse assumption of 15 year book life
- Sum of above expenses
- Forecasted capital expenditures from Data Request TC01-01-SP01 (adjusted for inflation)
- Forecasted environmental retrofit-related capital expenditures from Sargent & Lundy. Scrubber costs from Data Request TC01-01-SP01
- General and Environmental Capital Additions
- Cumulative depreciation expenses
- Net value is Gross less accumulated Depreciation.
- Unknown, zero used.
- Estimated at 90 days of annual fuel expenses.
- Unknown, zero used.
- Unknown, zero used.
- Unknown, zero used.
- Total rate base is sum of above values.
- PUC Order No. 24,473
- Return rate times rate base
- Sum of Total Expenses plus Return on Rate Base
- 2008 historic from FERC Form 1. Assumed constant thereafter.
- Calculated from capacity factor
- AESC 2007 MCP for New Hampshire.
- Energy revenue is generation times market price.
- Annual capacity from CELT
- Historical capacity prices from auctions prior to 2008 (2008-2010); 2027 price from Data Request TC01-1-SP01; linear trend from 2010 to 2027
- Capacity revenue is product of above
- Ancillary revenues are unknown but likely small.
- Total revenue is sum of above revenues.
- Net revenue is based on total requirements including return on rate base.
- Net Cash Flow excludes return on rate base expense.
- Fuel + Allowances
- Energy Revenue
- Net Margin (33 - 34)

Scenario 2: Low Env. Retrofit Case, Low Gas Case

Revenue Requirements Analysis

Merrimack Units 1 & 2

(All values in 2012 \$ 000)

Low	Environmental Retrofit Case
Low	Gas Prices

	Notes	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	NPV 2013-2027
Expenses																						
Non-Fuel O&M	1	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	\$408,927
Additional Environmental O&M	2	2,987	2,987	2,987	2,987	2,987	6,900	6,900	6,900	8,272	8,272	8,272	8,272	16,585	16,585	16,585	16,585	16,585	16,585	16,585	16,585	
Allowances	3	7,635	75,807	75,807	75,807	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	63,663	66,065	68,468	70,871	\$626,233
Total Non-Fuel O&M	4	51,364	119,536	119,536	119,536	108,902	108,902	108,902	108,902	110,274	110,274	110,274	110,274	118,588	118,588	118,588	118,588	120,990	123,393	125,796	128,198	\$1,150,679
Fuel and Fuel Related Expenses	5	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	\$1,038,523
Property Tax	6	477	1,074	2,018	2,589	2,908	2,956	3,005	3,054	3,137	3,221	3,305	3,388	3,567	3,746	3,925	4,104	4,283	4,462	4,641	4,820	\$35,867
Depreciation Expense	7		7,961	20,559	28,169	32,412	33,062	33,711	34,361	35,477	36,593	37,709	38,825	41,211	43,597	45,983	48,368	50,754	53,140	55,526	57,912	\$414,441
Total Expenses	8	155,311	232,041	245,584	253,765	247,692	248,390	249,089	249,787	252,358	253,558	254,758	255,958	266,836	269,401	271,966	274,531	279,498	284,465	289,433	294,400	\$2,639,510
Plant Values																						
Capital Additions - General	9	47627.02	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	
Capital Additions - Environmental	10	47,693	109,667	179,227	104,414	53,908	0	0	0	7,000	7,000	7,000	7,000	26,046	26,046	26,046	26,046	26,046	26,046	26,046	26,046	
Value of Plant Additions	11	95,320	214,730	403,699	517,854	581,505	591,246	600,988	610,730	627,472	644,214	660,956	677,698	713,485	749,273	785,060	820,847	856,635	892,422	928,210	963,997	
Accum. Depreciation	12	0	7,961	28,519	56,688	89,100	122,162	155,873	190,234	225,711	262,304	300,013	338,838	380,049	423,646	469,628	517,997	568,751	621,891	677,417	735,329	
Net Plant Value	13	95,320	206,769	375,179	461,166	492,404	469,084	445,115	420,496	401,761	381,910	360,943	338,860	333,436	325,627	315,432	302,851	287,884	270,531	250,793	228,668	
Working Capital	14																					
Year End Fuel Inventory	15	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	
Emissions Inventory	16																					
Accum. Deferred Income Tax	17																					
M&S Inventory	18																					
Total Rate Base	19	120,834	232,282	400,693	486,679	517,917	494,598	470,628	446,010	427,275	407,424	386,456	364,373	358,950	351,140	340,945	328,364	313,397	296,044	276,306	254,181	
Average Return on Rate Base	20	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	
Return on Rate Base	21	11,636	22,369	38,587	46,867	49,875	47,630	45,322	42,951	41,147	39,235	37,216	35,089	34,567	33,815	32,833	31,621	30,180	28,509	26,608	24,478	\$370,572
Revenue Requirements	22	166,947	254,410	284,170	300,632	297,568	296,020	294,410	292,737	293,505	292,793	291,974	291,047	301,403	303,216	304,799	306,152	309,678	312,974	316,041	318,878	\$3,010,082
Revenues																						
Capacity Factor	23	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	
Generation (GWh)	24	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	
Average Price (\$/MWh)	25	79.7	80.7	81.8	82.8	83.9	84.9	85.9	87.0	88.0	89.1	90.1	91.2	92.2	93.3	95.0	95.8	96.9	97.7	98.8	99.6	
Energy Revenue	26	227,399	230,367	233,335	236,303	239,272	242,240	245,208	248,176	251,144	254,112	257,081	260,049	263,017	266,167	270,892	273,254	276,404	278,767	281,916	284,279	\$2,614,388
Capacity (MW)	27	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	
Capacity Price	28	43.9	50.2	53.0	49.5	40.0	30.7	29.0	41.0	53.0	65.0	77.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	
Capacity Revenue	29	19,828	22,676	23,936	22,374	18,057	13,854	13,108	18,532	23,956	29,380	34,804	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	\$299,163
Ancillary	30																					
Total Revenue	31	247,227	253,043	257,272	258,677	257,329	256,094	258,316	266,708	275,100	283,492	291,885	298,017	300,985	304,135	308,860	311,222	314,372	316,735	319,884	322,247	\$2,913,551
Net Revenue	32	80,280	-1,366	-26,899	-41,955	-40,239	-39,927	-36,094	-26,029	-18,405	-9,301	-89	6,970	-418	919	4,061	5,070	4,694	3,760	3,843	3,369	(\$96,531)
Net Cash Flow	33	91,916	21,002	11,688	4,913	9,637	7,703	9,227	16,921	22,742	29,934	37,127	42,059	34,149	34,734	36,894	36,692	34,874	32,269	30,452	27,847	\$274,040
Generation Operations																						
Variable Expenses	34	111,105	179,277	179,277	179,277	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	167,133	169,536	171,938	174,341	\$1,664,756
Energy Revenue	35	227,399	230,367	233,335	236,303	239,272	242,240	245,208	248,176	251,144	254,112	257,081	260,049	263,017	266,167	270,892	273,254	276,404	278,767	281,916	284,279	\$2,614,388
Net Margin	36	116,294	51,090	54,058	57,026	74,541	77,509	80,478	83,446	86,414	89,382	92,350	95,318	98,287	101,437	106,161	108,524	109,271	109,231	109,978	109,938	\$949,632

Notes

- Historic values from FERC Form 1. Future values use 2008 average.
- Forecasted environmental retrofit-related O&M expenses from Sargent & Lundy.
- Historic values from FERC Form 1 and then based on AESC emission prices and emission rates from CAMD.
- Sum of 1, 2 & 3
- Based on 2008 average from Form 1 adjusted for assumed generation (23).
- Nominal 0.5% of gross plant value.
- Synapse assumption of 15 year book life
- Sum of above expenses
- Forecasted capital expenditures from Data Request TC01-01-SP01 (adjusted for inflation)
- Forecasted environmental retrofit-related capital expenditures from Sargent & Lundy. Scrubber costs from Data Request TC01-01-SP01
- General and Environmental Capital Additions
- Cumulative depreciation expenses
- Net value is Gross less accumulated Depreciation.
- Unknown, zero used.

- 15 Estimated at 90 days of annual fuel expenses.
- 16 Unknown, zero used.
- 17 Unknown, zero used.
- 18 Unknown, zero used.
- 19 Total rate base is sum of above values.
- 20 PUC Order No. 24,473
- 21 Return rate times rate base
- 22 Sum of Total Expenses plus Return on Rate Base
- 23 2008 historic from FERC Form 1. Assumed constant thereafter.
- 24 Calculated from capacity factor
- 25 AESC 2007 MCP for New Hampshire.
- 26 Energy revenue is generation times market price.
- 27 Annual capacity from CELT
- 28 Historical capacity prices from auctions prior to 2008 (2008-2010); 2027 price from Data Request TC01-1-SP01; linear trend from 2010 to 2027
- 29 Capacity revenue is product of above
- 30 Ancillary revenues are unknown but likely small.
- 31 Total revenue is sum of above revenues.
- 32 Net revenue is based on total requirements including return on rate base.
- 33 Net Cash Flow excludes return on rate base expense.
- 34 Fuel + Allowances
- 35 Energy Revenue
- 36 Net Margin (33 - 34)

Scenario 3: High Env. Retrofit Case, High Gas Case

Revenue Requirements Analysis

Merrimack Units 1 & 2

(All values in 2012 \$ 000)

High	Environmental Retrofit Case
High	Gas Prices

Expenses	Notes	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	NPV 2013-2027
Non-Fuel O&M	1	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	\$408,927
Additional Environmental O&M	2	2,987	2,987	2,987	2,987	2,987	6,900	6,900	13,706	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	\$1,772,550
Allowances	3	7,635	187,752	187,752	187,752	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	180,413	187,621	194,829	202,037	\$2,365,104
Total Non-Fuel O&M	4	51,364	231,481	231,481	231,481	220,847	220,847	220,847	227,653	235,641	235,641	235,641	235,641	235,641	235,641	235,641	235,641	242,849	250,057	257,265	264,473	\$1,038,523
Fuel and Fuel Related Expenses	5	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	\$40,464
Property Tax	6	477	1,074	2,018	2,589	2,908	2,956	3,005	3,156	3,368	3,579	3,791	4,003	4,214	4,426	4,638	4,849	5,061	5,273	5,484	5,696	\$475,738
Depreciation Expense	7		7,961	20,559	28,169	32,412	33,062	33,711	35,726	38,548	41,370	44,192	47,014	49,836	52,658	55,480	58,302	61,124	63,946	66,768	69,590	
Total Expenses	8	155,311	343,985	357,528	365,709	359,637	360,335	361,033	370,006	381,028	384,061	387,095	390,128	393,162	396,195	399,229	402,263	412,504	422,746	432,987	443,229	\$3,919,830
Plant Values																						
Capital Additions - General	9	47627.02	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	
Capital Additions - Environmental	10	47,693	109,667	179,227	104,414	53,908	0	0	20,486	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	
Value of Plant Additions	11	95,320	214,730	403,699	517,854	581,505	591,246	600,988	631,216	673,545	715,874	758,203	800,532	842,861	885,190	927,519	969,848	1,012,177	1,054,506	1,096,835	1,139,163	
Accum. Depreciation	12	0	7,961	28,519	56,688	89,100	122,162	155,873	191,600	230,148	271,518	315,710	362,725	412,561	465,219	520,698	579,000	640,124	704,070	770,837	840,427	
Net Plant Value	13	95,320	206,769	375,179	461,166	492,404	469,084	445,115	439,617	443,397	444,356	442,493	437,808	430,300	419,971	406,820	390,848	372,053	350,436	325,997	298,737	
Working Capital	14																					
Year End Fuel Inventory	15	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	
Emissions Inventory	16																					
Accum. Deferred Income Tax	17																					
M&S Inventory	18																					
Total Rate Base	19	120,834	232,282	400,693	486,679	517,917	494,598	470,628	465,130	468,911	469,869	468,006	463,321	455,814	445,485	432,334	416,361	397,566	375,949	351,510	324,250	
Average Return on Rate Base	20	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	
Return on Rate Base	21	11,636	22,369	38,587	46,867	49,875	47,630	45,322	44,792	45,156	45,248	45,069	44,618	43,895	42,900	41,634	40,096	38,286	36,204	33,850	31,225	\$428,307
Revenue Requirements	22	166,947	366,354	396,115	412,576	409,512	407,965	406,355	414,798	426,184	429,310	432,164	434,746	437,057	439,096	440,863	442,358	450,790	458,950	466,838	474,454	\$4,348,137
Revenues																						
Capacity Factor	23	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	
Generation (GWh)	24	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	
Average Price (\$/MWh)	25	81.4	84.1	86.9	89.6	92.4	95.1	97.8	100.6	103.3	106.1	108.8	111.5	114.3	115.4	117.0	117.9	119.0	119.8	120.9	121.7	\$3,130,655
Energy Revenue	26	232,245	240,059	247,873	255,687	263,502	271,316	279,130	286,944	294,758	302,573	310,387	318,201	326,015	329,165	333,890	336,252	339,402	341,765	344,915	347,277	
Capacity (MW)	27	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	
Capacity Price	28	43.9	50.2	53.0	49.5	40.0	30.7	29.0	41.0	53.0	65.0	77.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	
Capacity Revenue	29	19,828	22,676	23,936	22,374	18,057	13,854	13,108	18,532	23,956	29,380	34,804	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	\$299,163
Ancillary	30																					
Total Revenue	31	252,073	262,735	271,810	278,061	281,559	285,170	292,238	305,476	318,714	331,953	345,191	356,169	363,983	367,133	371,858	374,220	377,370	379,733	382,883	385,245	\$3,429,818
Net Revenue	32	85,126	-103,619	-124,305	-134,515	-127,953	-122,795	-114,117	-109,322	-107,469	-97,357	-86,973	-78,577	-73,074	-71,963	-69,005	-68,138	-73,420	-79,217	-83,955	-89,209	(\$918,319)
Net Cash Flow	33	96,762	-81,250	-85,718	-87,648	-78,078	-75,165	-68,795	-64,530	-62,313	-52,109	-41,904	-33,959	-29,179	-29,062	-27,371	-28,042	-35,134	-43,013	-50,105	-57,984	(\$490,011)
Generation Operations																						
Variable Expenses	34	111,105	291,222	291,222	291,222	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	283,883	291,091	298,299	305,507	\$2,811,073
Energy Revenue	35	232,245	240,059	247,873	255,687	263,502	271,316	279,130	286,944	294,758	302,573	310,387	318,201	326,015	329,165	333,890	336,252	339,402	341,765	344,915	347,277	\$3,130,655
Net Margin	36	121,140	-51,163	-43,349	-35,534	-13,173	-5,359	2,455	10,269	18,083	25,898	33,712	41,526	49,340	52,490	57,215	59,577	55,519	50,674	46,616	41,770	\$319,582

Notes

- Historic values from FERC Form 1. Future values use 2008 average.
- Forecasted environmental retrofit-related O&M expenses from Sargent & Lundy.
- Historic values from FERC Form 1 and then based on AESC emission prices and emission rates from CAMD.
- Sum of 1, 2 & 3
- Based on 2008 average from Form 1 adjusted for assumed generation (23).
- Nominal 0.5% of gross plant value.
- Synapse assumption of 15 year book life
- Sum of above expenses
- Forecasted capital expenditures from Data Request TC01-01-SP01 (adjusted for inflation)
- Forecasted environmental retrofit-related capital expenditures from Sargent & Lundy. Scrubber costs from Data Request TC01-01-SP01
- General and Environmental Capital Additions
- Cumulative depreciation expenses
- Net value is Gross less accumulated Depreciation.

- 14 Unknown, zero used.
- 15 Estimated at 90 days of annual fuel expenses.
- 16 Unknown, zero used.
- 17 Unknown, zero used.
- 18 Unknown, zero used.
- 19 Total rate base is sum of above values.
- 20 PUC Order No. 24,473
- 21 Return rate times rate base
- 22 Sum of Total Expenses plus Return on Rate Base
- 23 2008 historic from FERC Form 1. Assumed constant thereafter.
- 24 Calculated from capacity factor
- 25 AESC 2007 MCP for New Hampshire.
- 26 Energy revenue is generation times market price.
- 27 Annual capacity from CELT
- 28 Historical capacity prices from auctions prior to 2008 (2008-2010); 2027 price from Data Request TC01-1-SP01; linear trend from 2010 to 2027
- 29 Capacity revenue is product of above
- 30 Ancillary revenues are unknown but likely small.
- 31 Total revenue is sum of above revenues.
- 32 Net revenue is based on total requirements including return on rate base.
- 33 Net Cash Flow excludes return on rate base expense.
- 34 Fuel + Allowances

Scenario 4: High Env. Retrofit Case, Low Gas Case

Revenue Requirements Analysis

Merrimack Units 1 & 2

(All values in 2012 \$ 000)

High	Environmental Retrofit Case
Low	Gas Prices

Expenses	Notes	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	NPV 2013-2027
Non-Fuel O&M	1	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	\$408,927
Additional Environmental O&M	2	2,987	2,987	2,987	2,987	6,900	6,900	6,900	13,706	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	
Allowances	3	7,635	187,752	187,752	187,752	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	180,413	187,621	194,829	202,037	\$1,772,550
Total Non-Fuel O&M	4	51,364	231,481	231,481	231,481	220,847	220,847	220,847	227,653	235,641	235,641	235,641	235,641	235,641	235,641	235,641	235,641	242,849	250,057	257,265	264,473	\$2,365,104
Fuel and Fuel Related Expenses	5	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	\$1,038,523
Property Tax	6	477	1,074	2,018	2,589	2,908	2,956	3,005	3,156	3,368	3,579	3,791	4,003	4,214	4,426	4,638	4,849	5,061	5,273	5,484	5,696	\$40,464
Depreciation Expense	7		7,961	20,559	28,169	32,412	33,062	33,711	35,726	38,548	41,370	44,192	47,014	49,836	52,658	55,480	58,302	61,124	63,946	66,768	69,590	\$475,738
Total Expenses	8	155,311	343,985	357,528	365,709	359,637	360,335	361,033	370,006	381,028	384,061	387,095	390,128	393,162	396,195	399,229	402,263	412,504	422,746	432,987	443,229	\$3,919,830
Plant Values																						
Capital Additions - General	9	47627.02	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	
Capital Additions - Environmental	10	47,693	109,667	179,227	104,414	53,908	0	0	20,486	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	32,587	
Value of Plant Additions	11	95,320	214,730	403,699	517,854	581,505	591,246	600,988	631,216	673,545	715,874	758,203	800,532	842,861	885,190	927,519	969,848	1,012,177	1,054,506	1,096,835	1,139,163	
Accum. Depreciation	12	0	7,961	28,519	56,688	89,100	122,162	155,873	191,600	230,148	271,518	315,710	362,725	412,561	465,219	520,698	579,000	640,124	704,070	770,837	840,427	
Net Plant Value	13	95,320	206,769	375,179	461,166	492,404	469,084	445,115	439,617	443,397	444,356	442,493	437,808	430,300	419,971	406,820	390,848	372,053	350,436	325,997	298,737	
Working Capital	14																					
Year End Fuel Inventory	15	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	
Emissions Inventory	16																					
Accum. Deferred Income Tax	17																					
M&S Inventory	18																					
Total Rate Base	19	120,834	232,282	400,693	486,679	517,917	494,598	470,628	465,130	468,911	469,869	468,006	463,321	455,814	445,485	432,334	416,361	397,566	375,949	351,510	324,250	
Average Return on Rate Base	20	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	
Return on Rate Base	21	11,636	22,369	38,587	46,867	49,875	47,630	45,322	44,792	45,156	45,248	45,069	44,618	43,895	42,900	41,634	40,096	38,286	36,204	33,850	31,225	\$428,307
Revenue Requirements	22	166,947	366,354	396,115	412,576	409,512	407,965	406,355	414,798	426,184	429,310	432,164	434,746	437,057	439,096	440,863	442,358	450,790	458,950	466,838	474,454	\$4,348,137
Revenues																						
Capacity Factor	23	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	
Generation (GWh)	24	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	
Average Price (\$/MWh)	25	79.7	80.7	81.8	82.8	83.9	84.9	85.9	87.0	88.0	89.1	90.1	91.2	92.2	93.3	95.0	95.8	96.9	97.7	98.8	99.6	
Energy Revenue	26	227,399	230,367	233,335	236,303	239,272	242,240	245,208	248,176	251,144	254,112	257,081	260,049	263,017	266,167	270,892	273,254	276,404	278,767	281,916	284,279	\$2,614,388
Capacity (MW)	27	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	
Capacity Price	28	43.9	50.2	53.0	49.5	40.0	30.7	29.0	41.0	53.0	65.0	77.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	
Capacity Revenue	29	19,828	22,676	23,936	22,374	18,057	13,854	13,108	18,532	23,956	29,380	34,804	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	\$299,163
Ancillary	30																					
Total Revenue	31	247,227	253,043	257,272	258,677	257,329	256,094	258,316	266,708	275,100	283,492	291,885	298,017	300,985	304,135	308,860	311,222	314,372	316,735	319,884	322,247	\$2,913,551
Net Revenue	32	80,280	-113,311	-138,843	-153,899	-152,183	-151,871	-148,039	-148,090	-151,083	-145,817	-140,279	-136,729	-136,072	-134,961	-132,003	-131,136	-136,418	-142,215	-146,953	-152,207	#####
Net Cash Flow	33	91,916	-90,942	-100,256	-107,032	-102,308	-104,241	-102,717	-103,298	-105,927	-100,569	-95,210	-92,111	-92,177	-92,061	-90,369	-91,040	-98,132	-106,011	-113,103	-120,982	#####
Generation Operations																						
Variable Expenses	34	111,105	291,222	291,222	291,222	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	276,675	283,883	291,091	298,299	305,507	\$2,811,073
Energy Revenue	35	227,399	230,367	233,335	236,303	239,272	242,240	245,208	248,176	251,144	254,112	257,081	260,049	263,017	266,167	270,892	273,254	276,404	278,767	281,916	284,279	\$2,614,388
Net Margin	36	116,294	-60,855	-57,887	-54,918	-37,403	-34,435	-31,467	-28,499	-25,531	-22,562	-19,594	-16,626	-13,658	-10,508	-5,783	-3,421	-7,479	-12,324	-16,382	-21,228	(\$196,686)

Notes

- Historic values from FERC Form 1. Future values use 2008 average.
- Forecasted environmental retrofit-related O&M expenses from Sargent & Lundy.
- Historic values from FERC Form 1 and then based on AESC emission prices and emission rates from CAMD.
- Sum of 1, 2 & 3
- Based on 2008 average from Form 1 adjusted for assumed generation (23).
- Nominal 0.5% of gross plant value.
- Synapse assumption of 15 year book life
- Sum of above expenses
- Forecasted capital expenditures from Data Request TC01-01-SP01 (adjusted for inflation)
- Forecasted environmental retrofit-related capital expenditures from Sargent & Lundy. Scrubber costs from Data Request TC01-01-SP01
- General and Environmental Capital Additions
- Cumulative depreciation expenses
- Net value is Gross less accumulated Depreciation.

- 14 Unknown, zero used.
- 15 Estimated at 90 days of annual fuel expenses.
- 16 Unknown, zero used.
- 17 Unknown, zero used.
- 18 Unknown, zero used.
- 19 Total rate base is sum of above values.
- 20 PUC Order No. 24,473
- 21 Return rate times rate base
- 22 Sum of Total Expenses plus Return on Rate Base
- 23 2008 historic from FERC Form 1. Assumed constant thereafter.
- 24 Calculated from capacity factor
- 25 AESC 2007 MCP for New Hampshire.
- 26 Energy revenue is generation times market price.
- 27 Annual capacity from CELT
- 28 Historical capacity prices from auctions prior to 2008 (2008-2010); 2027 price from Data Request TC01-1-SP01; linear trend from 2010 to 2027
- 29 Capacity revenue is product of above
- 30 Ancillary revenues are unknown but likely small.
- 31 Total revenue is sum of above revenues.
- 32 Net revenue is based on total requirements including return on rate base.
- 33 Net Cash Flow excludes return on rate base expense.
- 34 Fuel + Allowances

Scenario 5: Low Env. Retrofit Case, High Gas Case

Revenue Requirements Analysis

Merrimack Units 1 & 2

(All values in 2012 \$ 000)

Low	Environmental Retrofit Case
High	Gas Prices

Expenses	Notes	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	NPV 2013-2027
Non-Fuel O&M	1	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	40,742	\$408,927
Additional Environmental O&M Allowances	2	2,987	2,987	2,987	2,987	6,900	6,900	6,900	6,900	8,272	8,272	8,272	8,272	16,585	16,585	16,585	16,585	16,585	16,585	16,585	16,585	16,585
Total Non-Fuel O&M	3	7,635	75,807	75,807	75,807	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	63,663	66,065	68,468	70,871	\$626,233
Fuel and Fuel Related Expenses	4	51,364	119,536	119,536	119,536	108,902	108,902	108,902	108,902	110,274	110,274	110,274	110,274	118,588	118,588	118,588	118,588	120,990	123,393	125,796	128,198	\$1,150,679
Property Tax	5	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470	\$1,038,523
Depreciation Expense	6	477	1,074	2,018	2,589	2,908	2,956	3,005	3,054	3,137	3,221	3,305	3,388	3,567	3,746	3,925	4,104	4,283	4,462	4,641	4,820	\$35,867
Total Expenses	7	155,311	232,041	245,584	253,765	247,692	248,390	249,089	249,787	252,358	253,558	254,758	255,958	266,836	269,401	271,966	274,531	279,498	284,465	289,433	294,400	\$2,639,510
Plant Values																						
Capital Additions - General	9	47627.02	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	9741.889	
Capital Additions - Environmental	10	47,693	109,667	179,227	104,414	53,908	0	0	0	7,000	7,000	7,000	7,000	26,046	26,046	26,046	26,046	26,046	26,046	26,046	26,046	
Value of Plant Additions	11	95,320	214,730	403,699	517,854	581,505	591,246	600,988	610,730	627,472	644,214	660,956	677,698	713,485	749,273	785,060	820,847	856,635	892,422	928,210	963,997	
Accum. Depreciation	12	0	7,961	28,519	56,688	89,100	122,162	155,873	190,234	225,711	262,304	300,013	338,838	380,049	423,646	469,628	517,997	568,751	621,891	677,417	735,329	
Net Plant Value	13	95,320	206,769	375,179	461,166	492,404	469,084	445,115	420,496	401,761	381,910	360,943	338,860	333,436	325,627	315,432	302,851	287,884	270,531	250,793	228,668	
Working Capital	14																					
Year End Fuel Inventory	15	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	25,513	
Emissions Inventory	16																					
Accum. Deferred Income Tax	17																					
M&S Inventory	18																					
Total Rate Base	19	120,834	232,282	400,693	486,679	517,917	494,598	470,628	446,010	427,275	407,424	386,456	364,373	358,950	351,140	340,945	328,364	313,397	296,044	276,306	254,181	
Average Return on Rate Base	20	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%	
Return on Rate Base	21	11,636	22,369	38,587	46,867	49,875	47,630	45,322	42,951	41,147	39,235	37,216	35,089	34,567	33,815	32,833	31,621	30,180	28,509	26,608	24,478	\$370,572
Revenue Requirements	22	166,947	254,410	284,170	300,632	297,568	296,020	294,410	292,737	293,505	292,793	291,974	291,047	301,403	303,216	304,799	306,152	309,678	312,974	316,041	318,878	\$3,010,082
Revenues																						
Capacity Factor	23	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	72.1%	
Generation (GWh)	24	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	
Average Price (\$/MWh)	25	81.4	84.1	86.9	89.6	92.4	95.1	97.8	100.6	103.3	106.1	108.8	111.5	114.3	115.4	117.0	117.9	119.0	119.8	120.9	121.7	
Energy Revenue	26	232,245	240,059	247,873	255,687	263,502	271,316	279,130	286,944	294,758	302,573	310,387	318,201	326,015	329,165	333,890	336,252	339,402	341,765	344,915	347,277	\$3,130,655
Capacity (MW)	27	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	452.00	
Capacity Price	28	43.9	50.2	53.0	49.5	40.0	30.7	29.0	41.0	53.0	65.0	77.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	84.0	
Capacity Revenue	29	19,828	22,676	23,936	22,374	18,057	13,854	13,108	18,532	23,956	29,380	34,804	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	37,968	\$299,163
Ancillary	30																					
Total Revenue	31	252,073	262,735	271,810	278,061	281,559	285,170	292,238	305,476	318,714	331,953	345,191	356,169	363,983	367,133	371,858	374,220	377,370	379,733	382,883	385,245	\$3,429,818
Net Revenue	32	85,126	8,326	-12,361	-22,571	-16,009	-10,850	-2,172	12,739	25,209	39,159	53,217	65,122	62,580	63,917	67,059	68,068	67,692	66,758	66,841	66,367	\$419,736
Net Cash Flow	33	96,762	30,694	26,226	24,297	33,867	36,779	43,149	55,689	66,356	78,394	90,433	100,211	97,147	97,732	99,892	99,690	97,872	95,267	93,450	90,845	\$790,308
Generation Operations																						
Variable Expenses	34	111,105	179,277	179,277	179,277	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	164,730	167,133	169,536	171,938	174,341	\$1,664,756
Energy Revenue	35	232,245	240,059	247,873	255,687	263,502	271,316	279,130	286,944	294,758	302,573	310,387	318,201	326,015	329,165	333,890	336,252	339,402	341,765	344,915	347,277	\$3,130,655
Net Margin	36	121,140	60,782	68,596	76,410	98,771	106,585	114,400	122,214	130,028	137,842	145,656	153,471	161,285	164,435	169,159	171,522	172,269	172,229	172,976	172,936	\$1,465,899

Notes

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- 34 Fuel + Allowances

Future Environmental Costs (2012 \$)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Emissions

AMP Dataset Emissions															
State	NH	NH	NH												
Facility Name	Merrimack	Merrimack	Merrimack												
Facility ID (ORISPL)	2364	2364	2364												
Unit ID	1	2	Average												
Year	2008														
SO2 (tons)	9,924	21,381	31,305												
NOx (tons)	1,147	2,010	3,157												
CO2 (tons)	911,630	2,200,484	3,112,114												
Heat Input (MMBtu)	8,885,298	21,447,236	30,332,534												
Gross Load (MWh)	859,954	2,148,483	3,008,436												
SO2 rate (lbs/MWh)	23.081	19.903	20.812												
NOx rate (lbs/MWh)	2.667	1.871	2.099												
CO2 rate (tons/MWh)	1.060	1.024	1.034												
Heat Rate (Btu/kWh)	10,332	9,983	10,082												
Source: EPA AMPD 2010-2012. Available at http://ampd.epa.gov/ampd/															
Emissions Costs															
Category	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Generation (GWh)	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853	2,853
SO2 Rate (lbs/MWh)	20.812	20.812	20.812	20.812	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
SOx Emissions (lbs)	29,688	29,688	29,688	29,688	594	594	594	594	594	594	594	594	594	594	594
Price (2012 \$/ton)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Cost (2012 \$ 000)	14,844	14,844	14,844	14,844	297	297	297	297	297	297	297	297	297	297	297
NOx Rate (lbs/MWh)	2.099	2.099	2.099	2.099	2.099	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Emissions (tons)	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994	2,994
Price (2012 \$/ton)	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0	1667.0
Cost (2012 \$ 000)	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991	4,991
CO2 Rate (tons/MWh)	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034	1.034
CO2 Emissions (tons)	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285	2,951,285
Low Price (2012 \$/ton)	0.00	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97	18.97
Ref Price (2012 \$/ton)	0.00	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66	40.66
High Price (2012 \$/ton)	0.00	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90	56.90
Low Cost (2012 \$ 000)	0	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972	55,972
Ref Cost (2012 \$ 000)	0	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998	119,998
High Cost (2012 \$ 000)	0	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917	167,917
Low Air Emission Costs (2012 \$ 000)	19,835	75,807	75,807	75,807	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260	61,260
Ref Air Emission Costs (2012 \$ 000)	19,835	139,833	139,833	139,833	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286	125,286
High Air Emission Costs (2012 \$ 000)	19,835	187,752	187,752	187,752	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205	173,205

[illegible]

Average of MCP: NE - New Hampshire

Source: AESC 2007

Year	MCP (2012 \$/MWh)		
	Ref	Low	High
2007	78.67	78.67	78.67
2008	84.46	79.71	81.40
2009	80.60	80.75	84.14
2010	80.87	81.79	86.88
2011	93.85	82.83	89.62
2012	99.09	83.87	92.36
2013	97.71	84.91	95.10
2014	99.09	85.95	97.84
2015	99.09	86.99	100.58
2016	100.47	88.03	103.32
2017	102.96	89.07	106.06
2018	101.58	90.11	108.79
2019	102.13	91.15	111.53
2020	103.23	92.19	114.27
2021	104.34	93.29	115.38
2022	105.99	94.95	117.03
2023	106.82	95.78	117.86
2024	107.92	96.88	118.96
2025	108.75	97.71	119.79
2026	109.86	98.82	120.90
2027	110.68	99.64	121.72
2028	111.51	100.47	122.55
2029	112.89	101.85	123.93
2030	113.72	102.68	124.76
2031	114.82	103.78	125.87
2032	116.20	105.16	127.25
2033	117.03	105.99	128.07
2034	118.41	107.37	129.45
2035	119.24	108.20	130.28
2036	120.90	109.86	131.94
2037	122.00	110.96	133.04
2038	122.83	111.79	133.87
2039	124.21	113.17	135.25
2040	125.59	114.55	136.63

AESC 2007, Exhibit E-1 NH-C\$ Avoided Costs Before Adder, 2007\$				AESC 2007, Exhibit E-1 NH-C\$ Avoided Costs Before Adder, 2012\$			
	Baseline	Low Gas	High Gas	Year	Ref	Low	High
2007	71.25	61.25	81.25	2007	78.67	78.67	78.67
2008	76.50	66.50	86.50	2008	84.46	79.71	81.40
2009	73.00	63.00	83.00	2009	80.60	80.75	84.14
2010	73.25	63.25	83.25	2010	80.87	81.79	86.88
2011	85.00	75.00	95.00	2011	93.85	82.83	89.62
2012	89.75	79.75	99.75	2012	99.09	83.87	92.36
2013	88.50	78.50	98.50	2013	97.71	84.91	95.10
2014	89.75	79.75	99.75	2014	99.09	85.95	97.84
2015	89.75	79.75	99.75	2015	99.09	86.99	100.58
2016	91.00	81.00	101.00	2016	100.47	88.03	103.32
2017	93.25	83.25	103.25	2017	102.96	89.07	106.06
2018	92.00	82.00	102.00	2018	101.58	90.11	108.79
2019	92.50	82.50	102.50	2019	102.13	91.15	111.53
2020	93.50	83.50	103.50	2020	103.23	92.19	114.27
2021	94.50	84.50	104.50	2021	104.34	93.29	115.38
2022	96.00	86.00	106.00	2022	105.99	94.95	117.03
2023	96.75	86.75	106.75	2023	106.82	95.78	117.86
2024	97.75	87.75	107.75	2024	107.92	96.88	118.96
2025	98.50	88.50	108.50	2025	108.75	97.71	119.79
2026	99.50	89.50	109.50	2026	109.86	98.82	120.90
2027	100.25	90.25	110.25	2027	110.68	99.64	121.72
2028	101.00	91.00	111.00	2028	111.51	100.47	122.55
2029	102.25	92.25	112.25	2029	112.89	101.85	123.93
2030	103.00	93.00	113.00	2030	113.72	102.68	124.76
2031	104.00	94.00	114.00	2031	114.82	103.78	125.87
2032	105.25	95.25	115.25	2032	116.20	105.16	127.25
2033	106.00	96.00	116.00	2033	117.03	105.99	128.07
2034	107.25	97.25	117.25	2034	118.41	107.37	129.45
2035	108.00	98.00	118.00	2035	119.24	108.20	130.28
2036	109.50	99.50	119.50	2036	120.90	109.86	131.94
2037	110.50	100.50	120.50	2037	122.00	110.96	133.04
2038	111.25	101.25	121.25	2038	122.83	111.79	133.87
2039	112.50	102.50	122.50	2039	124.21	113.17	135.25
2040	113.75	103.75	123.75	2040	125.59	114.55	136.63

Capacity Prices

Commitment Period (June 1 to May 31)	FCA Clearing Price (nominal \$/kW-month)	FCA Clearing Price (2012 \$/kW-month)
2007-2008	\$3.05	\$3.37
2008-2009	\$3.75	\$4.06
2009-2010	\$4.10	\$4.35

The ISO will establish the FCM price from the auction results. For at least the first three FCM years (June 2010 through

Results:

114 \$/kW-yr

9.5 \$/kW-month

see page 179

Source: FCM Auction Results. ISONE. Available at http://www.iso-ne.com/markets/othrmkts_data/fcm/cal_results/index.html; Explanatory statement of the settling parties in support of settlement agreement and request for expedited consideration. FERC. March 6, 2006. P.38, Table 5.

Calendar Year	FCA Expected Floor Price (2012 \$/kW-month)	Expected Capacity Price 2008/2009 (2012 \$/kW- Year)
2008		\$43.87
2009		\$50.17
2010	4.50	\$52.96
2011	3.60	\$49.50
2012	2.95	\$39.95
2013	2.00	\$30.65
2014	3.00	\$29.00
2015	4.00	\$41.00
2016	5.00	\$53.00
2017	6.00	\$65.00
2018	7.00	\$77.00
2019	7.00	\$84.00
2020	7.00	\$84.00
2021	7.00	\$84.00
2022	7.00	\$84.00
2023	7.00	\$84.00
2024	7.00	\$84.00
2025	7.00	\$84.00
2026	7.00	\$84.00
2027	7.00	\$84.00

Floor prices 2010-2013: ISO-NE; expected to fall than rise to \$7 thereafter, Synapse expert judgement

May 2013), the price for capacity will be constrained between a minimum and a maximum equal to -40% and +40% of a reference price respectively. The reference price for the first FCM year has been set at \$90/kW-yr or \$7.50/kW-month.

Energy_Prices

Monthly Summary of Hourly ISO Data											
Year	Month	Energy	CDD	HDD	PkDy	PkDt	PkDEMD	PkHr	PkDB	PkDP	PkWTHI
2003	3	10715	0	914	3	1	19997	19	12	-11	6
2003	4	9805	0	635	1	2	17863	19	33	29	39
2003	5	9617	0	319	20	2	16497	14	78	43	65
2003	6	10302	45	82	27	5	24112	14	88	71	80
2003	7	12085	126	2	8	2	23588	17	86	68	77
2003	8	12448	160	6	22	5	24330	15	90	71	80
2003	9	10218	24	60	15	1	19098	20	72	67	71
2003	10	10094	0	455	27	1	17878	18	61	60	62
2003	11	9986	0	645	17	1	18301	18	39	32	38
2003	12	11379	0	1001	15	1	20502	18	30	19	22
2004	1	12469	0	1455	15	4	22563	19	-1	-20	-12
2004	2	10708	0	1034	3	2	19649	19	31	28	27
2004	3	10754	0	856	16	2	18978	19	27	23	21
2004	4	9733	0	516	1	4	17764	19	42	40	47
2004	5	9972	3	208	12	3	18032	16	80	55	71
2004	6	10626	27	62	9	3	22621	17	90	67	77
2004	7	11740	87	4	22	4	22797	16	83	65	75
2004	8	12118	112	8	30	1	23750	16	82	70	78
2004	9	10526	22	75	9	4	20490	20	75	71	73
2004	10	10186	0	417	19	2	17564	19	47	42	51
2004	11	10255	0	675	9	2	18781	18	33	11	30
2004	12	11616	0	1044	20	1	22293	19	7	-5	-2
2005	1	12077	0	1280	18	2	21881	19	6	-11	-2
2005	2	10391	0	994	1	2	19578	19	28	11	28
2005	3	11137	0	990	9	3	19792	19	20	1	13
2005	4	9665	0	471	4	1	16722	21	43	31	47
2005	5	9846	0	385	25	3	16381	18	48	44	52
2005	6	11629	95	53	13	1	24678	17	88	69	79
2005	7	12704	131	7	27	3	26416	15	91	72	80
2005	8	13046	144	0	5	5	25402	15	92	68	79
2005	9	11010	39	46	14	3	22072	17	85	64	76
2005	10	10503	9	385	7	5	18602	13	77	66	71
2005	11	10283	0	639	23	3	18981	18	27	12	23
2005	12	11770	0	1103	14	3	21381	18	19	0	16
2006	1	11320	0	974	16	1	20209	18	25	8	19
2006	2	10328	0	1006	27	1	20182	19	20	-6	12
2006	3	10820	0	866	2	4	19163	19	29	20	27
2006	4	9475	0	471	5	3	16785	21	37	26	42
2006	5	10080	5	275	30	2	19102	15	75	59	71

Energy_Prices

2006	6	11169	65	56	19	1	23707	15	88	66	77
2006	7	13141	175	0	18	2	26765	15	92	68	81
2006	8	12144	80	17	2	3	27622	14	95	74	82
2006	9	10081	10	104	19	2	18911	20	70	65	70
2006	10	10208	0	413	4	3	17716	20	69	61	66
2006	11	10101	0	545	28	2	18631	18	41	39	39
2006	12	11060	0	825	8	5	20309	18	21	2	15
2007	1	11561	0	1069	26	5	20768	19	7	-12	0
2007	2	10799	0	1167	5	1	21321	19	13	-6	2
2007	3	11025	0	921	6	2	21100	19	9	-18	-1
2007	4	9942	0	608	4	3	17656	20	36	34	44
2007	5	10271	5	194	25	5	19994	16	90	53	73
2007	6	10960	42	49	27	3	25676	15	93	68	80
2007	7	12192	99	4	27	5	24000	15	87	65	77
2007	8	12463	102	19	3	5	25785	15	92	67	80
2007	9	10621	31	65	7	5	22186	16	90	64	75
2007	10	10448	9	244	5	5	19085	15	79	61	72
2007	11	10385	0	738	28	3	18827	18	36	19	35
2007	12	11649	0	1099	13	4	20902	18	21	17	17
2008	1	11577	0	1080	3	4	21445	19	8	-8	3
2008	2	10709	0	1024	11	1	20190	19	20	2	13
2008	3	10844	0	909	3	1	18139	19	44	30	42
2008	4	9676	0	456	4	5	16693	11	39	37	42
2008	5	9767	0	271	27	2	17670	14	80	61	70
2008	6	11168	60	25	10	2	25696	15	90	65	79
2008	7	12836	141	0	8	2	24347	17	87	67	77
2008	8	11406	44	3	1	5	21879	16	81	63	75
2008	9	10472	35	98	5	5	21860	15	84	64	75
2008	10	10059	0	441	29	3	17433	19	39	25	46
2008	11	10158	0	724	19	3	19002	18	28	7	23
2008	12	11234	0	1018	8	1	20690	18	18	-6	15
			Year								
		Data	2003	2004	2005	2006	2007	2008	2009	2010	2011
		Average of C	55.25	61.21	88.78	69.53	77.18	90.85	46.42	56.31	53.00
		Average of C	43.44	47.06	69.31	53.50	60.09	71.27	37.24	42.24	40.69
		Average of A	48.92	53.67	78.36	60.96	68.03	80.42	41.52	48.86	46.40
		Average Price (Nominal \$/MWh)						80.42	41.52	48.86	46.40
		Average Price (2012 \$/MWh)						87.05	44.07	50.83	47.33
Source: ISO-NE. Monthly Summary of Hourly Data. Available at http://www.iso-ne.com/markets/hstdata/znl_info/monthly/smd_monthly											

Energy_Prices

MinDEMD	RTPkLMP	AvgDALMP	AvgRTLMP	OnPkDALMP	OnPkRTLMP	OffPkDALMP	OffPkRTLMP
9232	178.57	70.19	68.69	77.66	74.79	64.04	63.66
9297	93.63	47.23	46.91	52.12	51.67	42.54	42.36
8820	185.27	46.95	45.90	53.12	55.04	41.87	38.38
9087	137.85	48.49	48.28	56.64	55.12	41.36	42.30
10096	83.82	49.12	48.48	56.13	53.69	42.82	43.80
9736	59.03	45.69	44.09	51.83	49.54	40.63	39.60
9465	95.29	41.80	44.40	47.57	49.52	36.75	39.92
9116	98.25	44.61	44.50	50.27	49.90	39.09	39.22
9083	68.39	42.88	42.83	48.48	48.78	38.80	38.49
9561	96.43	52.27	51.47	58.65	59.21	46.54	44.52
10033	256.81	81.17	73.98	100.44	90.41	65.30	60.46
10827	75.07	51.21	49.11	55.93	54.21	47.20	44.78
9635	68.64	47.94	46.75	52.95	51.65	43.03	41.96
9226	53.69	52.49	50.42	58.41	56.20	46.81	44.89
9020	166.16	55.59	53.48	63.63	62.47	49.52	46.69
9220	82.07	53.00	50.71	60.50	57.39	45.83	44.32
9979	80.71	50.40	48.92	56.44	55.61	44.97	42.92
9720	96.10	47.74	47.54	53.51	55.18	42.55	40.68
9407	79.17	43.91	43.95	50.54	49.19	38.11	39.36
9491	85.56	50.26	51.37	57.20	59.90	44.55	44.36
9561	98.54	50.99	50.38	58.97	57.44	44.01	44.20
10447	308.22	59.35	58.28	65.98	66.19	52.87	50.54
10505	101.73	69.68	66.31	80.24	72.38	60.99	61.30
11253	82.48	56.39	53.71	61.83	58.36	51.44	49.48
10579	96.22	63.21	63.77	67.99	69.47	58.52	58.19
9490	75.46	64.12	60.65	70.29	66.75	58.71	55.29
9159	66.20	57.74	56.86	65.01	65.13	51.75	50.05
9648	109.62	68.10	63.43	79.35	72.95	57.35	54.32
10070	151.77	75.11	72.62	92.64	86.92	61.87	61.82
10888	169.12	89.57	91.80	101.16	103.55	78.22	80.31
9471	158.17	103.16	102.23	118.82	118.14	89.45	88.31
9428	188.69	112.29	111.58	126.19	125.26	100.87	100.34
9500	119.57	79.62	74.21	90.36	85.42	70.22	64.40
10195	153.85	101.35	100.02	111.43	106.62	92.30	94.10
10459	193.12	74.36	70.25	82.29	78.42	67.25	62.91
10256	115.19	70.74	65.56	75.48	70.47	66.44	61.09
10182	106.36	60.55	62.84	65.92	69.60	55.29	56.23
9018	82.22	60.88	62.33	68.94	69.69	54.42	56.43
9190	102.75	56.34	56.05	64.94	65.28	48.62	47.76

Energy_Prices

9471	105.96	58.41	53.67	68.72	63.07	48.54	44.68
10814	135.78	63.38	57.58	77.09	71.52	53.04	47.06
9862	998.49	67.23	70.12	79.10	87.30	55.62	53.30
9621	52.59	45.41	45.68	52.20	51.35	39.99	41.14
9460	102.05	53.57	54.18	61.39	61.89	46.58	47.27
9534	92.69	64.02	62.20	73.75	70.08	55.52	55.31
10028	102.44	56.65	55.68	64.49	63.98	50.74	49.41
9807	90.85	63.25	60.75	71.71	68.81	55.65	53.51
11635	148.03	81.30	79.55	87.03	85.09	76.09	74.51
10356	138.22	69.40	65.77	78.06	74.62	61.61	57.81
9465	86.09	70.47	67.45	80.42	76.13	61.77	59.85
9335	68.62	67.33	67.47	77.02	75.49	58.62	60.27
9519	106.58	63.74	60.61	73.41	68.84	55.28	53.41
9895	105.89	60.81	61.18	70.07	69.55	53.18	54.28
9903	97.35	66.34	65.08	75.58	75.98	57.30	54.41
9486	107.61	58.93	60.74	69.57	72.31	51.15	52.29
9574	101.22	59.87	59.65	68.55	68.46	51.38	51.03
10045	101.42	62.63	61.10	70.51	68.63	55.76	54.52
10641	265.49	92.33	91.97	104.25	101.39	83.33	84.86
10668	156.34	83.99	85.53	95.83	96.31	73.37	75.85
10947	144.07	75.33	74.25	84.74	82.87	66.56	66.20
10778	219.88	78.20	76.95	85.37	85.87	72.28	69.59
9265	129.93	90.08	92.61	100.80	103.40	79.83	82.29
9093	225.15	99.43	102.85	114.73	123.43	86.83	85.90
9502	210.08	109.32	107.20	127.00	121.21	93.85	94.95
10588	242.79	111.02	107.98	132.10	126.82	92.09	91.06
10387	100.16	70.92	71.92	78.16	77.21	64.96	67.57
9454	131.91	65.68	66.20	72.04	71.65	60.11	61.43
9340	76.23	60.18	60.55	66.44	65.04	54.07	56.16
9344	157.17	61.11	61.65	68.69	66.94	55.58	57.79
10186	204.50	59.76	58.77	64.24	62.30	55.73	55.61
2012	2013						
41.70	67.01						
31.13	51.18						
36.05	58.63						
36.05							
36.05							
y.x/s							

Financial Assumptions

Inflation Rate	2.00%	<i>Source</i> AESC 2013
Debt Rate	6.8%	IR 13-020 PSNH, p.35
Equity Rate	12.8%	IR 13-020 PSNH, p.35
Debt Mix	60%	IR 13-020 PSNH, p.35
Equity Mix	40%	
Nominal WACC	9.15%	
Tax Rate	38%	IR 13-020 PSNH, p.35
After Tax WACC	7.61%	
Real Discount Rate	5.50%	
Nominal Discount Rate	7.61%	IR 13-020 PSNH, p.35
For Capital Costs		
Book Life	15	Synapse Assumption
Tax Life	20	Synapse Assumption
Property Tax Rate	0.5%	Synapse Assumption
Real Levelization Rate	13.3%	
Nominal Levelization Rate	14.9%	
Gr. Plant Inv	1	

Source: IR 13-020 PSNH: Report on investigation into market conditions, default service rate, generation ownership and impacts on the competitive electricity market. NH PUC Staff. June 7 2013. Page 35.

<i>Value</i>	<i>2012 \$ 000</i>	<i>Source</i>
Gross plant	\$662,858	IR 13-020 PSNH, p.33
Depreciable plant	\$662,758	IR 13-020 PSNH, p.33
Accumulated Depreciation	\$159,029	IR 13-020 PSNH, p.33
Net Plant	\$503,829	IR 13-020 PSNH, p.33

Source: IR 13-020 PSNH: Report on investigation into market conditions, default service rate, generation ownership and impacts on the competitive electricity market. NH PUC Staff. June 7 2013. Page 33, Table 4.

Depreciating Years	Straight Line Depreciation Rate	Annual Depreciation (2012 \$ 000)
40	2.50%	\$16,571
30	3.33%	\$22,092
20	5.00%	\$7,951
10	10.00%	\$50,383

9.63% Return on rate base

Source: PUC Order No.24,473

PSNH Scrubber Invoice Costs

Date	Cumulative Nominal \$	Cumulative 2012 \$
1/1/2008	\$1,276,925	\$1,382,185

2008	Gross Plant Value (2012 \$ 000)
	\$288,898.84

	BOY RateBase =Prev EOY RateBase	EOY RateBase = BOY RateBase - Book Deprec	Avg RateBase =Average BOY & EOY RateBase	Net Plant (%) =BOY RateBase - BOY ADIT	Net Return =ROR * Net Plant	Book Deprec (%) =Lookup based on Book Life	Tax Deprec (%) =Lookup based on Tax Life
1	1.000	0.933	0.967	1.000	0.092	0.067	0.038
2	0.933	0.867	0.900	0.944	0.086	0.067	0.072
3	0.867	0.800	0.833	0.876	0.080	0.067	0.067
4	0.800	0.733	0.767	0.809	0.074	0.067	0.062
5	0.733	0.667	0.700	0.744	0.068	0.067	0.057
6	0.667	0.600	0.633	0.681	0.062	0.067	0.053
7	0.600	0.533	0.567	0.619	0.057	0.067	0.049
8	0.533	0.467	0.500	0.559	0.051	0.067	0.045
9	0.467	0.400	0.433	0.501	0.046	0.067	0.045
10	0.400	0.333	0.367	0.443	0.040	0.067	0.045
11	0.333	0.267	0.300	0.384	0.035	0.067	0.045
12	0.267	0.200	0.233	0.326	0.030	0.067	0.045
13	0.200	0.133	0.167	0.267	0.024	0.067	0.045
14	0.133	0.067	0.100	0.209	0.019	0.067	0.045
15	0.067	0.000	0.033	0.150	0.014	0.067	0.045
16	0.000	0.000	0.000	0.092	0.008	0.000	0.045
17	0.000	0.000	0.000	0.075	0.007	0.000	0.045
18	0.000	0.000	0.000	0.058	0.005	0.000	0.045
19	0.000	0.000	0.000	0.041	0.004	0.000	0.045
20	0.000	0.000	0.000	0.024	0.002	0.000	0.045
21	0.000	0.000	0.000	0.006	0.001	0.000	0.017
22	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000
24	0.000	0.000	0.000	0.000	0.000	0.000	0.000
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	0.000	0.000	0.000	0.000	0.000	0.000	0.000
29	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32	0.000	0.000	0.000	0.000	0.000	0.000	0.000
33	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36	0.000	0.000	0.000	0.000	0.000	0.000	0.000
37	0.000	0.000	0.000	0.000	0.000	0.000	0.000
38	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Column	Beginning of	End of Year	Simple	Net Plant is	Return on Net	Book	Tax

FERC Form 1 Data		2008	
	Steam	fuela	fuelb
Plant Name	MERRIMACK		
Kind of Plant (Internal Comb, Gas Turb, Nuclear)	Steam		
Type of Constr (Conventional, Outdoor, Boiler, etc)	Outdoor Boiler		
Year Originally Constructed	1960		
Year Last Unit was Installed	1968		
Total Installed Cap (Max Gen Name Plate Ratings-MW)	459.2		
Net Peak Demand on Plant - MW (60 minutes)	452		
Plant Hours Connected to Load	8614		
Net Continuous Plant Capability (Megawatts)	0		
When Not Limited by Condenser Water	436		
When Limited by Condenser Water	433		
Average Number of Employees	108		
Net Generation, Exclusive of Plant Use - KWh	2,852,965,350		
Cost of Plant: Land and Land Rights	99,784		
Structures and Improvements	18,361,716		
Equipment Costs	207,844,068		
Asset Retirement Costs	563,962		
Total Cost	226,869,530		
Cost per KW of Installed Capacity (line 17/5) Including	494		
Production Expenses: Oper, Supv, & Engr	1,034,623		
Fuel	95,590,498		
Coolants and Water (Nuclear Plants Only)	0		
Steam Expenses	1,096,484		
Steam From Other Sources	0		
Steam Transferred (Cr)	0		
Electric Expenses	813,913		
Misc Steam (or Nuclear) Power Expenses	12,079,217		
Rents	4,445		
Allowances	7,053,434		
Maintenance Supervision and Engineering	1,481,126		
Maintenance of Structures	276,468		
Maintenance of Boiler (or reactor) Plant	20,122,417		
Maintenance of Electric Plant	5,503,736		
Maintenance of Misc Steam (or Nuclear) Plant	1,601,414		
Total Production Expenses	146,657,775		
Expenses per Net KWh	0.0514		
Fuel: Kind (Coal, Gas, Oil, or Nuclear)		COAL	#2 OIL
Unit (Coal-tons/Oil-barrel/Gas-mcf/Nuclear-indicate)		TONS	BARRELS
Quantity (Units) of Fuel Burned		1,141,401	620
Avg Heat Cont - Fuel Burned (btu/indicate if nuclear)		13,922	82,303

FERC_f1

Avg Cost of Fuel/unit, as Delvd f.o.b. during year		99	129	
Average Cost of Fuel per Unit Burned		84	121	
Average Cost of Fuel Burned per Million BTU		3.006	34.921	
Average Cost of Fuel Burned per KWh Net Gen		0.033	0.389	
Average BTU per KWh Net Generation		11,140	11,140	
Capacity Factor	72%			
Fuel Cost (\$ 000)	95,590			
Heat Input (MMBtu)	15,891			
Cost (\$/MMBtu)	6.02			
Heat Rate (Btu/kWh) (from CAMD)	5,570			
Generation (GWh)	2,853			
Weighted Average Fuel Cost (\$/MWh)	33.5			
Production Expenses: Oper, Supv, & Engr	1,035			
Fuel	95,590			
Steam etc.	13,994			
Allowances	7,053			
Maintenance	28,985			
Total Production Expenses	146,658			
Production cost (\$/MWh)	51.4			
O&M cost (\$/MWh)	15.4			
Source: FERC. Form 1 - Electric Utility Annual Report. Available at http://www.ferc.gov/docs-filing/forms/form-1/data.asp				

Fifteen-Year NPV (2013-2027) Results

