

## **APPENDIX 13-A. UTILITY IMPACT ANALYSIS: HIGH AND LOW ECONOMIC GROWTH RESULTS**

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## APPENDIX 13-A. UTILITY IMPACT ANALYSIS: HIGH AND LOW ECONOMIC GROWTH RESULTS

### 13-A.1 INTRODUCTION

As described in chapter 13, Utility Impact Analysis, DOE analyzed the effects of residential heating products standard levels on the electric and gas utility industry using a variant of the DOE/Energy Information Administration (EIA)'s National Energy Modeling System (NEMS).<sup>a</sup> NEMS is a public domain, multi-sectored, partial equilibrium model of the U.S. energy sector. Each year, DOE/EIA uses NEMS to produce a baseline energy forecast for the United States, the *Annual Energy Outlook (AEO)*. The *AEO* for 2009 (*AEO2009*) forecasts energy supply and demand through 2030.<sup>1</sup> DOE used a variant of this model, referred to here as NEMS-BT,<sup>b</sup> to account for the impacts of heating products energy conservation standards on the baseline energy forecast. Chapter 13 describes DOE's utility impact analysis consists of a comparison between model results for the *AEO2009* Reference Case and for policy cases in which standards are in place, and applies the same basic set of assumptions as the *AEO2009*. This appendix consists of a comparison between the modeled results for the *AEO2009* High and Low Economic Growth Case forecasts and policy cases in which standards are in place.

This appendix reports the changes in installed capacity and generation that result for each trial standard level (TSL) by fuel type, as well as changes in residential electricity and natural gas consumption for AEO's high and low economic growth forecasts.

### 13-A.2 ASSUMPTIONS

NEMS-BT has several advantages that have led to its adoption as the forecasting tool in the analysis of energy conservation standards. NEMS-BT uses a set of assumptions that are well known and fairly transparent, due to the exposure and scrutiny each *AEO* receives. In addition, the comprehensiveness of NEMS-BT permits the modeling of interactions among the various energy supply and demand sectors and the economy as a whole, producing a complete picture of the effects of energy conservation standards. Perhaps most importantly, NEMS-BT can be used to estimate marginal effects, which yield a better estimate of the actual impact of energy conservation standards than considering only average effects.

The utility impact analysis uses the assumptions of the *AEO2009* and treats water heater, pool heater, and direct heating equipment energy conservation standards as variations in policy. The effect of the policy is calculated as the difference between the *AEO2009* High and Low Economic Growth Cases and each proposed standard case. Because the implementation of

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<sup>a</sup> For more information on NEMS, refer to the U.S. Department of Energy, Energy Information Administration documentation. A useful summary is *National Energy Modeling System: An Overview 2003*, DOE/EIA-0581(2003), March, 2003.

<sup>b</sup> DOE/EIA approves use of the name NEMS to describe only an official version of the model without any modification to code or data. Because this analysis entails some minor code modifications and the model is run under various policy scenarios that are variations on DOE/EIA assumptions, DOE refers to it by the name NEMS-BT (BT is DOE's Building Technologies Program, under whose aegis this work has been performed). NEMS-BT was previously called NEMS-BRS.

standards reduces total natural gas demand by less than one percent in any given year, its effect cannot be detected directly in the simulations. Therefore, DOE modeled larger reductions in demand and interpolated results for the TSLs. DOE assumed the effects to be linear within the range of interpolation.

### 13-A.3 **METHOD**

DOE used the national energy savings developed in the national impact analysis (chapter 10) for each TSL as input to NEMS-BT. The magnitude of the energy decrement that would be required for NEMS-BT to produce stable results out of the range of numerical noise is larger than the highest efficiency standard under consideration. Therefore, DOE estimated results corresponding to each TSL using interpolation. DOE ran higher use reduction levels in NEMS-BT, representing multipliers of each TSL, and used these outputs to linearly interpolate the results to estimate actual changes in generation and capacity due to the standard.

Policy runs are executed by reducing electricity and natural gas consumption in the NEMS-BT Residential Demand Module. Energy use reductions are applied to the residential water heating end use for water heaters and pool heaters and to the residential heating end use for direct heating equipment. The savings are divided evenly among the U.S. Census divisions. All fuels are considered simultaneously.

Although the current time horizon of NEMS-BT is 2030, other parts of the residential heating products energy conservation standards analysis extend to the year 2045 for water heaters, and 2043 for direct heating equipment and pool heaters. It is not feasible to extend the forecast period of NEMS-BT for the purposes of this analysis, nor does DOE/EIA have an approved method for extrapolation of many outputs beyond 2030. While it might seem reasonable to make simple linear extrapolations of results, in practice this is not advisable because outputs could be contradictory. For example, changes in the fuel mix implied by extrapolations of those outputs could be inconsistent with the extrapolation of marginal emissions factors. An analysis of various trends sufficiently detailed to guarantee consistency is beyond the scope of this work, and, in any case, would involve a great deal of uncertainty. Therefore, all extrapolations beyond 2030 are simple replications of year 2030 results. While these may seem unreasonable in some instances, in this way results are guaranteed to be consistent. As with the AEO High and Low Economic Growth Cases in general, the implicit assumption is that the regulatory environment does not deviate from the current known situation during the extrapolation period. Only changes that have been announced with date-certain introduction are included in NEMS-BT. To emphasize the extrapolated results wherever they appear, they are shaded in gray to distinguish them from actual NEMS-BT results.

### 13-A.4 **RESULTS**

The utility impact analysis reports NEMS-BT forecasts for generation, installed capacity, and residential-sector consumption. Results for all TSLs are presented in five-year increments to year 2030. Beyond year 2030, an extrapolation to 2045 for water heaters, and 2043

for direct heating equipment and pool heaters for each proposed TSL represents a simple replication of the year 2030 results.

The results from the *AEO2009* High Economic Growth Case and Low Economic Growth Case are shown in Tables 13A.4.1 and 13A.4.2, respectively.

A separate set of TSLs are modeled for each energy conservation standard product. Eight TSLs are modeled for residential water heaters, six TSLs for direct heating equipment, and six TSLs are modeled for pool heaters. The high economic growth case results for each TSL are presented in Table 13-A.4.3 through Table 13A.4.22. The high economic growth results from proposed water heater TSLs are presented in Table 13-A.4.3 through Table 13-A.4.10, the high economic growth results from proposed direct heating equipment TSLs are presented in Table 13-A.4.11 through Table 13-A.4.16, and the results from proposed pool heater TSLs are presented in Table 13-A.4.17 through Table 13A.4.22. The low economic growth case results for each TSL are presented in Table 13A.4.23 through Table 13A.4.42. The low economic growth results from proposed water heater TSLs are presented in Table 13A.4.23 through Table 13A.4.30, the low economic growth results from proposed direct heating equipment TSLs are presented in Table 13A.4.31 through Table 13A.4.36, and the results from proposed pool heater TSLs are presented in Table 13A.4.37 through Table 13A.4.42.

**Table 13-A.4.1 AEO2009 High Economic Growth Case Forecast**

<b>NEMS-BT Results: AEO2009 High Growth Reference</b>						
	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<i>Residential Sector Energy Consumption</i> <sup>1</sup>						
Electricity Sales (TWh) <sup>2</sup>	1359	1406	1427	1514	1634	1766
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.48	5.52
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23
Other (Quads) <sup>3</sup>	1.88	1.77	1.66	1.66	1.64	1.65
<i>Total U.S. Electric Generation</i> <sup>4</sup>						
Coal (TWh)	2014	2023	2176	2249	2264	2344
Gas (TWh)	753	788	623	685	939	995
Petroleum (TWh)	123	58	47	48	49	51
Nuclear (TWh)	782	809	831	947	963	1116
Renewables (TWh)	357	473	737	792	867	910
Total (TWh) <sup>5</sup>	4029	4151	4414	4721	5082	5416
<i>Installed Generating Capacity</i> <sup>6</sup>						
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1
Other Fossil (GW) <sup>7</sup>	438.9	470.0	445.2	456.3	519.9	566.0
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3
Total (GW) <sup>8</sup>	952.3	1030.5	1082.1	1120.3	1192.2	1277.1
<i>Residential Fuel Prices</i> <sup>9</sup>						
Electricity (¢/kWh)	10.00	9.85	10.76	11.52	11.83	12.25
Natural Gas (\$/GJ)	12.39	10.71	10.95	12.13	12.63	13.57
Petroleum Products (\$/GJ)	16.57	12.71	20.83	23.64	25.04	26.51
Natural Gas (\$/MBtu)	13.07	11.30	11.55	12.80	13.33	14.32
Petroleum Products (\$/MBtu)	17.48	13.41	21.98	24.94	26.42	27.97

<sup>1</sup>Comparable to Table A2 of AEO2009: Energy Consumption, Residential

<sup>2</sup>Comparable to Table A8 of AEO2009: Electricity Sales by Sector

<sup>3</sup>Includes distillate fuel, commercial fuel, kerosene, LPG, motor gasoline, coal, and renewable energy

<sup>4</sup>Comparable to Table A8 of AEO2009: Electric Generators and Cogenerators

<sup>5</sup>Excludes "Other Gaseous Fuels" cogenerators and "Other" cogenerators

<sup>6</sup>Comparable to Table A9 of AEO2009: Electric Generators and Cogenerators Capability

<sup>7</sup>Includes "Other Gaseous Fuels" cogenerators

<sup>8</sup>Excludes Pumped Storage and Fuel Cells

<sup>9</sup>Comparable to Table A3 of AEO2009: Residential

**Table 13-A.4.2 AEO2009 Low Economic Growth Case Forecast**

<b>NEMS-BT Results: AEO2009 Low Growth Reference</b>						
	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<i>Residential Sector Energy Consumption</i> <sup>1</sup>						
Electricity Sales (TWh) <sup>2</sup>	1359	1396	1387	1439	1505	1566
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.64
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81
Other (Quads) <sup>3</sup>	1.88	1.78	1.64	1.60	1.57	1.55
<i>Total U.S. Electric Generation</i> <sup>4</sup>						
Coal (TWh)	2014	2009	2098	2136	2117	2188
Gas (TWh)	753	757	682	712	852	912
Petroleum (TWh)	123	55	46	49	48	49
Nuclear (TWh)	782	809	831	869	872	849
Renewables (TWh)	357	443	534	602	656	668
Total (TWh) <sup>5</sup>	4029	4073	4191	4368	4545	4666
<i>Installed Generating Capacity</i> <sup>6</sup>						
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6
Other Fossil (GW) <sup>7</sup>	438.9	469.9	433.1	437.8	466.8	503.1
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4
Total (GW) <sup>8</sup>	952.3	1022.4	1002.3	1017.6	1054.3	1093.8
<i>Residential Fuel Prices</i> <sup>9</sup>						
Electricity (¢/kWh)	10.00	9.66	10.37	10.76	10.80	11.06
Natural Gas (\$/GJ)	12.39	10.43	10.63	11.64	11.47	12.59
Petroleum Products (\$/GJ)	16.57	12.41	20.05	22.96	22.61	23.74
Natural Gas (\$/MBtu)	13.07	11.00	11.21	12.28	12.10	13.28
Petroleum Products (\$/MBtu)	17.48	13.09	21.15	24.22	23.86	25.05

<sup>1</sup>Comparable to Table A2 of AEO2009: Energy Consumption, Residential

<sup>2</sup>Comparable to Table A8 of AEO2009: Electricity Sales by Sector

<sup>3</sup>Includes distillate fuel, commercial fuel, kerosene, LPG, motor gasoline, coal, and renewable energy

<sup>4</sup>Comparable to Table A8 of AEO2009: Electric Generators and Cogenerators

<sup>5</sup>Excludes "Other Gaseous Fuels" cogenerators and "Other" cogenerators

<sup>6</sup>Comparable to Table A9 of AEO2009: Electric Generators and Cogenerators Capability

<sup>7</sup>Includes "Other Gaseous Fuels" cogenerators

<sup>8</sup>Excludes Pumped Storage and Fuel Cells

<sup>9</sup>Comparable to Table A3 of AEO2009: Residential



**Table 13-A.4.3 Water Heaters Trial Standard Level 1 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,427	1,513	1,633	1,764	Electricity Sales (TWh)	0.00	0.00	-0.14	-0.84	-1.43	-1.71	-1.80	-1.84	-1.87			
Natural Gas (EJ)	5.23	5.34	5.25	5.36	5.45	5.49	Natural Gas (EJ)	0.000	0.000	-0.002	-0.014	-0.023	-0.028	-0.030	-0.031	-0.032			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.98	5.08	5.17	5.20	Natural Gas (Quads)	0.000	0.000	-0.002	-0.013	-0.022	-0.027	-0.028	-0.029	-0.030			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,176	2,248	2,263	2,343	Coal (TWh)	0.00	0.00	-0.26	-0.91	-0.83	-0.70	-0.70	-0.70	-0.70			
Gas (TWh)	753	788	625	687	940	996	Gas (TWh)	0.00	0.06	1.79	1.87	1.02	1.07	1.07	1.07	1.07			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	0.00	0.03	0.03	-0.02	-0.02	-0.02	-0.02			
Nuclear (TWh)	782	809	831	946	962	1,114	Nuclear (TWh)	0.00	0.00	0.00	-0.68	-0.76	-1.74	-1.74	-1.74	-1.74			
Renewables (TWh)	357	473	735	790	865	908	Renewables (TWh)	0.00	-0.06	-2.04	-1.90	-2.10	-2.02	-2.02	-2.02	-2.02			
Total (TWh)	4,029	4,151	4,414	4,719	5,079	5,413	Total (TWh)	0.00	0.01	-0.50	-1.59	-2.64	-3.41	-3.41	-3.41	-3.41			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.9	337.5	338.2	348.0	Coal (GW)	0.00	0.00	-0.11	-0.11	-0.09	-0.07	-0.07	-0.07	-0.07			
Other Fossil (GW)	438.9	470.0	445.3	456.5	520.1	566.2	Other Fossil (GW)	0.00	0.00	0.10	0.21	0.18	0.21	0.21	0.21	0.21			
Nuclear (GW)	100.1	101.2	104.1	120.5	120.5	139.5	Nuclear (GW)	0.00	0.00	0.00	-0.09	-0.10	-0.22	-0.22	-0.22	-0.22			
Renewables (GW)	99.5	134.3	197.2	205.2	212.8	222.7	Renewables (GW)	0.00	-0.01	-0.59	-0.58	-0.58	-0.60	-0.60	-0.60	-0.60			
Total (GW)	952.3	1,030.5	1,081.5	1,119.7	1,191.6	1,276.4	Total (GW)	0.00	-0.01	-0.60	-0.58	-0.58	-0.68	-0.68	-0.68	-0.68			

**Table 13-A.4.4 Water Heaters Trial Standard Level 2 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,427	1,513	1,632	1,764	Electricity Sales (TWh)	0.00	0.00	-0.17	-1.06	-1.80	-2.16	-2.28	-2.33	-2.36			
Natural Gas (EJ)	5.23	5.34	5.25	5.35	5.44	5.47	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.98	5.07	5.15	5.19	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.003	-0.004	-0.004	-0.004			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,176	2,248	2,263	2,343	Coal (TWh)	0.00	0.00	-0.41	-1.47	-1.33	-1.12	-1.12	-1.12	-1.12			
Gas (TWh)	753	788	626	688	941	997	Gas (TWh)	0.00	0.10	2.90	3.01	1.63	1.71	1.71	1.71	1.71			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	0.00	0.05	0.05	-0.03	-0.03	-0.03	-0.03			
Nuclear (TWh)	782	809	831	946	962	1,113	Nuclear (TWh)	0.00	0.00	0.00	-1.09	-1.21	-2.78	-2.78	-2.78	-2.78			
Renewables (TWh)	357	473	734	789	864	907	Renewables (TWh)	0.00	-0.09	-3.29	-3.05	-3.36	-3.23	-3.23	-3.23	-3.23			
Total (TWh)	4,029	4,151	4,413	4,718	5,078	5,411	Total (TWh)	0.00	0.01	-0.81	-2.56	-4.23	-5.46	-5.46	-5.46	-5.46			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.8	337.4	338.2	348.0	Coal (GW)	0.00	0.00	-0.18	-0.18	-0.14	-0.12	-0.12	-0.12	-0.12			
Other Fossil (GW)	438.9	470.0	445.4	456.6	520.2	566.3	Other Fossil (GW)	0.00	0.00	0.16	0.33	0.29	0.33	0.33	0.33	0.33			
Nuclear (GW)	100.1	101.2	104.1	120.4	120.4	139.3	Nuclear (GW)	0.00	0.00	0.00	-0.15	-0.15	-0.35	-0.35	-0.35	-0.35			
Renewables (GW)	99.5	134.3	196.8	204.9	212.5	222.3	Renewables (GW)	0.00	-0.02	-0.95	-0.94	-0.93	-0.95	-0.95	-0.95	-0.95			
Total (GW)	952.3	1,030.5	1,081.1	1,119.4	1,191.3	1,276.0	Total (GW)	0.00	-0.02	-0.97	-0.94	-0.93	-1.09	-1.09	-1.09	-1.09			

**Table 13-A.4.5 Water Heaters Trial Standard Level 3 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,427	1,512	1,630	1,762	Electricity Sales (TWh)	0.00	0.00	-0.36	-2.18	-3.71	-4.45	-4.69	-4.80	-4.86			
Natural Gas (EJ)	5.23	5.34	5.25	5.35	5.44	5.47	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.98	5.07	5.15	5.19	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,176	2,247	2,262	2,343	Coal (TWh)	0.00	0.00	-0.47	-1.68	-1.53	-1.29	-1.29	-1.29	-1.29			
Gas (TWh)	753	788	626	688	941	997	Gas (TWh)	0.00	0.11	3.31	3.44	1.87	1.96	1.96	1.96	1.96			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	0.00	0.06	0.06	-0.04	-0.04	-0.04	-0.04			
Nuclear (TWh)	782	809	831	946	962	1,113	Nuclear (TWh)	0.00	0.00	0.00	-1.25	-1.39	-3.18	-3.18	-3.18	-3.18			
Renewables (TWh)	357	473	733	789	863	906	Renewables (TWh)	0.00	-0.10	-3.76	-3.49	-3.85	-3.70	-3.70	-3.70	-3.70			
Total (TWh)	4,029	4,151	4,413	4,718	5,077	5,410	Total (TWh)	0.00	0.01	-0.92	-2.92	-4.84	-6.25	-6.25	-6.25	-6.25			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.8	337.4	338.1	348.0	Coal (GW)	0.00	0.00	-0.20	-0.20	-0.16	-0.13	-0.13	-0.13	-0.13			
Other Fossil (GW)	438.9	470.0	445.4	456.7	520.2	566.4	Other Fossil (GW)	0.00	0.00	0.18	0.38	0.33	0.38	0.38	0.38	0.38			
Nuclear (GW)	100.1	101.2	104.1	120.4	120.4	139.3	Nuclear (GW)	0.00	0.00	0.00	-0.17	-0.18	-0.40	-0.40	-0.40	-0.40			
Renewables (GW)	99.5	134.3	196.7	204.7	212.3	222.2	Renewables (GW)	0.00	-0.02	-1.09	-1.08	-1.06	-1.09	-1.09	-1.09	-1.09			
Total (GW)	952.3	1,030.5	1,081.0	1,119.2	1,191.1	1,275.9	Total (GW)	0.00	-0.02	-1.11	-1.07	-1.07	-1.25	-1.25	-1.25	-1.25			

**Table 13-A.4.6 Water Heaters Trial Standard Level 4 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,426	1,511	1,629	1,760	Electricity Sales (TWh)	0.00	0.00	-0.51	-3.07	-5.23	-6.27	-6.62	-6.76	-6.85			
Natural Gas (EJ)	5.23	5.34	5.25	5.35	5.44	5.47	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.98	5.07	5.15	5.19	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,175	2,247	2,262	2,343	Coal (TWh)	0.00	0.00	-0.52	-1.84	-1.68	-1.41	-1.41	-1.41	-1.41			
Gas (TWh)	753	788	627	689	941	997	Gas (TWh)	0.00	0.13	3.62	3.78	2.05	2.15	2.15	2.15	2.15			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	0.00	0.06	0.06	-0.04	-0.04	-0.04	-0.04			
Nuclear (TWh)	782	809	831	946	961	1,113	Nuclear (TWh)	0.00	0.00	0.00	-1.37	-1.52	-3.49	-3.49	-3.49	-3.49			
Renewables (TWh)	357	473	733	788	863	906	Renewables (TWh)	0.00	-0.11	-4.11	-3.83	-4.23	-4.06	-4.06	-4.06	-4.06			
Total (TWh)	4,029	4,151	4,413	4,718	5,077	5,409	Total (TWh)	0.00	0.01	-1.01	-3.21	-5.32	-6.86	-6.86	-6.86	-6.86			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.8	337.4	338.1	348.0	Coal (GW)	0.00	0.00	-0.22	-0.22	-0.18	-0.15	-0.15	-0.15	-0.15			
Other Fossil (GW)	438.9	470.0	445.4	456.7	520.3	566.4	Other Fossil (GW)	0.00	0.00	0.19	0.42	0.37	0.42	0.42	0.42	0.42			
Nuclear (GW)	100.1	101.2	104.1	120.4	120.4	139.3	Nuclear (GW)	0.00	0.00	0.00	-0.19	-0.19	-0.44	-0.44	-0.44	-0.44			
Renewables (GW)	99.5	134.3	196.6	204.6	212.2	222.1	Renewables (GW)	0.00	-0.03	-1.19	-1.18	-1.17	-1.20	-1.20	-1.20	-1.20			
Total (GW)	952.3	1,030.5	1,080.9	1,119.1	1,191.0	1,275.7	Total (GW)	0.00	-0.03	-1.22	-1.18	-1.17	-1.37	-1.37	-1.37	-1.37			

**Table 13-A.4.7 Water Heaters Trial Standard Level 5 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,426	1,509	1,626	1,756	Electricity Sales (TWh)	0.00	0.00	-0.81	-4.90	-8.34	-10.00	-10.55	-10.79	-10.94			
Natural Gas (EJ)	5.23	5.34	5.25	5.35	5.45	5.49	Natural Gas (EJ)	0.000	0.000	-0.003	-0.016	-0.027	-0.032	-0.034	-0.036	-0.037			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003			
Natural Gas (Quads)	4.96	5.06	4.98	5.07	5.16	5.20	Natural Gas (Quads)	0.000	0.000	-0.003	-0.015	-0.025	-0.031	-0.033	-0.034	-0.035			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,175	2,247	2,262	2,343	Coal (TWh)	0.00	0.02	-0.50	-2.19	-1.79	-0.74	-0.74	-0.74	-0.74			
Gas (TWh)	753	788	627	688	939	996	Gas (TWh)	0.00	0.04	3.57	3.43	0.40	1.24	1.24	1.24	1.24			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	-0.12	0.00	0.06	0.04	0.00	0.00	0.00	0.00			
Nuclear (TWh)	782	809	831	944	960	1,109	Nuclear (TWh)	0.00	0.00	0.00	-2.66	-2.95	-6.81	-6.81	-6.81	-6.81			
Renewables (TWh)	357	473	733	788	863	906	Renewables (TWh)	0.00	-0.26	-4.47	-3.70	-4.08	-4.05	-4.05	-4.05	-4.05			
Total (TWh)	4,029	4,151	4,413	4,716	5,074	5,406	Total (TWh)	0.00	-0.32	-1.40	-5.06	-8.39	-10.37	-10.37	-10.37	-10.37			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.8	337.4	338.1	348.0	Coal (GW)	0.00	0.00	-0.23	-0.23	-0.17	-0.05	-0.05	-0.05	-0.05			
Other Fossil (GW)	438.9	470.0	445.6	456.8	520.3	566.7	Other Fossil (GW)	0.00	-0.01	0.37	0.50	0.40	0.65	0.65	0.65	0.65			
Nuclear (GW)	100.1	101.2	104.1	120.2	120.2	138.8	Nuclear (GW)	0.00	0.00	0.00	-0.38	-0.38	-0.88	-0.88	-0.88	-0.88			
Renewables (GW)	99.5	134.3	196.6	204.6	212.2	222.1	Renewables (GW)	0.00	-0.04	-1.25	-1.23	-1.18	-1.19	-1.19	-1.19	-1.19			
Total (GW)	952.3	1,030.5	1,081.0	1,119.0	1,190.9	1,275.6	Total (GW)	0.00	-0.05	-1.10	-1.34	-1.32	-1.46	-1.46	-1.46	-1.46			

**Table 13-A.4.8 Water Heaters Trial Standard Level 6 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,426	1,509	1,626	1,756	Electricity Sales (TWh)	0.00	0.00	-0.79	-4.78	-8.13	-9.75	-10.29	-10.51	-10.66			
Natural Gas (EJ)	5.23	5.34	5.25	5.34	5.43	5.47	Natural Gas (EJ)	0.000	0.000	-0.004	-0.025	-0.043	-0.051	-0.054	-0.056	-0.058			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.005			
Natural Gas (Quads)	4.96	5.06	4.98	5.07	5.15	5.18	Natural Gas (Quads)	0.000	0.000	-0.004	-0.024	-0.041	-0.049	-0.052	-0.053	-0.055			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,175	2,246	2,262	2,343	Coal (TWh)	0.00	0.02	-0.64	-2.79	-2.28	-0.95	-0.95	-0.95	-0.95			
Gas (TWh)	753	788	628	689	940	997	Gas (TWh)	0.00	0.06	4.59	4.38	0.50	1.58	1.58	1.58	1.58			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	-0.15	0.00	0.08	0.05	0.00	0.00	0.00	0.00			
Nuclear (TWh)	782	809	831	944	959	1,107	Nuclear (TWh)	0.00	0.00	0.00	-3.39	-3.76	-8.67	-8.67	-8.67	-8.67			
Renewables (TWh)	357	473	731	787	862	905	Renewables (TWh)	0.00	-0.33	-5.74	-4.73	-5.20	-5.15	-5.15	-5.15	-5.15			
Total (TWh)	4,029	4,151	4,412	4,715	5,071	5,403	Total (TWh)	0.00	-0.41	-1.80	-6.46	-10.69	-13.20	-13.20	-13.20	-13.20			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.7	337.3	338.1	348.0	Coal (GW)	0.00	0.00	-0.29	-0.29	-0.21	-0.07	-0.07	-0.07	-0.07			
Other Fossil (GW)	438.9	470.0	445.7	456.9	520.4	566.8	Other Fossil (GW)	0.00	-0.01	0.48	0.64	0.51	0.83	0.83	0.83	0.83			
Nuclear (GW)	100.1	101.2	104.1	120.1	120.1	138.6	Nuclear (GW)	0.00	0.00	0.00	-0.48	-0.48	-1.11	-1.11	-1.11	-1.11			
Renewables (GW)	99.5	134.2	196.2	204.2	211.9	221.8	Renewables (GW)	0.00	-0.05	-1.60	-1.58	-1.51	-1.51	-1.51	-1.51	-1.51			
Total (GW)	952.3	1,030.4	1,080.7	1,118.6	1,190.5	1,275.2	Total (GW)	0.00	-0.06	-1.42	-1.71	-1.69	-1.86	-1.86	-1.86	-1.86			

**Table 13-A.4.9 Water Heaters Trial Standard Level 7 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,423	1,489	1,591	1,715	Electricity Sales (TWh)	0.00	0.00	-4.15	-25.11	-42.61	-50.93	-53.46	-54.38	-54.95			
Natural Gas (EJ)	5.23	5.34	5.25	5.32	5.39	5.41	Natural Gas (EJ)	0.000	0.000	-0.009	-0.052	-0.088	-0.108	-0.117	-0.123	-0.128			
Other (EJ)	1.98	1.87	1.75	1.75	1.72	1.73	Other (EJ)	0.000	0.000	-0.001	-0.004	-0.007	-0.008	-0.009	-0.009	-0.009			
Natural Gas (Quads)	4.96	5.06	4.97	5.04	5.11	5.13	Natural Gas (Quads)	0.000	0.000	-0.008	-0.049	-0.084	-0.103	-0.111	-0.117	-0.121			
Other (Quads)	1.88	1.77	1.66	1.66	1.63	1.64	Other (Quads)	0.000	0.000	-0.001	-0.004	-0.006	-0.008	-0.008	-0.009	-0.009			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,174	2,240	2,256	2,341	Coal (TWh)	0.00	0.07	-2.08	-9.14	-7.51	-3.13	-3.13	-3.13	-3.13			
Gas (TWh)	753	788	638	699	941	1,000	Gas (TWh)	0.00	0.18	14.79	14.31	1.66	5.22	5.22	5.22	5.22			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	-0.50	0.00	0.25	0.17	0.00	0.00	0.00	0.00			
Nuclear (TWh)	782	809	831	936	951	1,087	Nuclear (TWh)	0.00	0.00	0.00	-11.10	-12.40	-28.72	-28.72	-28.72	-28.72			
Renewables (TWh)	357	472	718	777	850	893	Renewables (TWh)	0.00	-1.06	-18.51	-15.47	-17.13	-17.07	-17.07	-17.07	-17.07			
Total (TWh)	4,029	4,150	4,408	4,700	5,047	5,372	Total (TWh)	0.00	-1.31	-5.80	-21.14	-35.21	-43.70	-43.70	-43.70	-43.70			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	334.1	336.6	337.6	347.9	Coal (GW)	0.00	0.00	-0.94	-0.95	-0.70	-0.22	-0.22	-0.22	-0.22			
Other Fossil (GW)	438.9	470.0	446.7	458.4	521.6	568.7	Other Fossil (GW)	0.00	-0.02	1.54	2.10	1.68	2.74	2.74	2.74	2.74			
Nuclear (GW)	100.1	101.2	104.1	119.0	119.0	136.0	Nuclear (GW)	0.00	0.00	0.00	-1.57	-1.58	-3.69	-3.69	-3.69	-3.69			
Renewables (GW)	99.5	134.1	192.6	200.6	208.4	218.3	Renewables (GW)	0.00	-0.17	-5.16	-5.16	-4.96	-5.00	-5.00	-5.00	-5.00			
Total (GW)	952.3	1,030.3	1,077.5	1,114.7	1,186.6	1,270.9	Total (GW)	0.00	-0.20	-4.56	-5.58	-5.56	-6.17	-6.17	-6.17	-6.17			

**Table 13-A.4.10 Water Heaters Trial Standard Level 8 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,406	1,422	1,482	1,580	1,701	Electricity Sales (TWh)	0.00	0.00	-5.22	-31.74	-54.12	-65.11	-68.91	-70.68	-71.86			
Natural Gas (EJ)	5.23	5.34	5.24	5.27	5.30	5.31	Natural Gas (EJ)	0.000	0.000	-0.018	-0.104	-0.176	-0.212	-0.226	-0.234	-0.240			
Other (EJ)	1.98	1.87	1.75	1.74	1.72	1.73	Other (EJ)	0.000	0.000	-0.001	-0.008	-0.013	-0.016	-0.017	-0.017	-0.018			
Natural Gas (Quads)	4.96	5.06	4.96	4.99	5.02	5.03	Natural Gas (Quads)	0.000	0.000	-0.017	-0.099	-0.167	-0.201	-0.214	-0.222	-0.228			
Other (Quads)	1.88	1.77	1.66	1.65	1.63	1.64	Other (Quads)	0.000	0.000	-0.001	-0.007	-0.012	-0.015	-0.016	-0.016	-0.017			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,023	2,173	2,235	2,252	2,339	Coal (TWh)	0.00	0.10	-3.25	-14.18	-11.61	-4.83	-4.83	-4.83	-4.83			
Gas (TWh)	753	788	646	707	942	1,003	Gas (TWh)	0.00	0.29	23.12	22.21	2.57	8.05	8.05	8.05	8.05			
Petroleum (TWh)	123	57	47	48	49	51	Petroleum (TWh)	0.00	-0.78	0.00	0.39	0.26	0.00	0.00	0.00	0.00			
Nuclear (TWh)	782	809	831	930	944	1,072	Nuclear (TWh)	0.00	0.00	0.00	-17.22	-19.17	-44.31	-44.31	-44.31	-44.31			
Renewables (TWh)	357	471	708	768	841	884	Renewables (TWh)	0.00	-1.66	-28.94	-24.00	-26.49	-26.34	-26.34	-26.34	-26.34			
Total (TWh)	4,029	4,149	4,405	4,688	5,028	5,349	Total (TWh)	0.00	-2.05	-9.06	-32.81	-54.44	-67.43	-67.43	-67.43	-67.43			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	333.5	336.1	337.2	347.8	Coal (GW)	0.00	0.00	-1.47	-1.48	-1.08	-0.34	-0.34	-0.34	-0.34			
Other Fossil (GW)	438.9	470.0	447.6	459.6	522.5	570.2	Other Fossil (GW)	0.00	-0.04	2.41	3.26	2.60	4.23	4.23	4.23	4.23			
Nuclear (GW)	100.1	101.2	104.1	118.2	118.2	134.0	Nuclear (GW)	0.00	0.00	0.00	-2.44	-2.44	-5.70	-5.70	-5.70	-5.70			
Renewables (GW)	99.5	134.0	189.7	197.8	205.7	215.6	Renewables (GW)	0.00	-0.27	-8.07	-8.00	-7.67	-7.72	-7.72	-7.72	-7.72			
Total (GW)	952.3	1,030.2	1,075.0	1,111.6	1,183.6	1,267.6	Total (GW)	0.00	-0.31	-7.13	-8.65	-8.59	-9.52	-9.52	-9.52	-9.52			

**Table 13-A.4.11 Direct Heating Equipment Trial Standard Level 1 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.058	0.063	0.059	0.057	0.056			
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.51	Natural Gas (EJ)	0.000	0.000	-0.002	-0.004	-0.007	-0.007	-0.007	-0.007	-0.007			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.18	5.22	Natural Gas (Quads)	0.000	0.000	-0.002	-0.004	-0.006	-0.007	-0.006	-0.006	-0.006			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.002	0.017	0.074	0.048	0.094	0.094	0.094	0.094			
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.010	0.050	0.140	0.238	0.307	0.307	0.307	0.307			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	0.004	-0.008	0.000	0.000	-0.008	-0.008	-0.008	-0.008			
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.058	-0.059	-0.279	-0.279	-0.279	-0.279			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.012	-0.025	-0.026	-0.045	-0.037	-0.037	-0.037	-0.037			
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	0.008	0.034	0.130	0.181	0.077	0.077	0.077	0.077			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.008	0.011	0.011	0.009	0.009	0.009	0.009			
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	-0.003	0.009	0.028	0.047	0.047	0.047	0.047			
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.008	-0.008	-0.035	-0.035	-0.035	-0.035			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.007	-0.007	-0.006	-0.012	-0.012	-0.012	-0.012			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	-0.003	0.006	0.026	0.009	0.009	0.009	0.009			

**Table 13-A.4.12 Direct Heating Equipment Trial Standard Level 2 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.057	0.062	0.059	0.057	0.056			
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.51	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.007	-0.008	-0.007	-0.007	-0.007			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.18	5.22	Natural Gas (Quads)	0.000	0.000	-0.002	-0.004	-0.007	-0.007	-0.007	-0.007	-0.007			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.002	0.018	0.079	0.051	0.101	0.101	0.101	0.101			
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.011	0.053	0.151	0.255	0.330	0.330	0.330	0.330			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	0.004	-0.008	0.000	0.000	-0.008	-0.008	-0.008	-0.008			
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.062	-0.064	-0.300	-0.300	-0.300	-0.300			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.013	-0.027	-0.028	-0.049	-0.040	-0.040	-0.040	-0.040			
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	0.008	0.036	0.140	0.194	0.083	0.083	0.083	0.083			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.008	0.012	0.012	0.010	0.010	0.010	0.010			
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.1	Other Fossil (GW)	0.000	0.000	-0.003	0.010	0.030	0.050	0.050	0.050	0.050			
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.008	-0.008	-0.038	-0.038	-0.038	-0.038			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.008	-0.007	-0.006	-0.013	-0.013	-0.013	-0.013			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	-0.003	0.006	0.028	0.010	0.010	0.010	0.010			

**Table 13-A.4.13 Direct Heating Equipment Trial Standard Level 3 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.057	0.062	0.059	0.056	0.056			
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.51	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.008	-0.008	-0.008	-0.008	-0.007			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.18	5.22	Natural Gas (Quads)	0.000	0.000	-0.002	-0.005	-0.007	-0.008	-0.007	-0.007	-0.007			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.002	0.020	0.083	0.054	0.107	0.107	0.107	0.107			
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.012	0.056	0.159	0.269	0.349	0.349	0.349	0.349			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	0.004	-0.009	0.000	0.000	-0.009	-0.009	-0.009	-0.009			
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.065	-0.067	-0.317	-0.317	-0.317	-0.317			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.014	-0.029	-0.030	-0.051	-0.042	-0.042	-0.042	-0.042			
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	0.009	0.038	0.147	0.205	0.088	0.088	0.088	0.088			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.009	0.013	0.012	0.011	0.011	0.011	0.011			
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.1	Other Fossil (GW)	0.000	0.000	-0.004	0.010	0.032	0.053	0.053	0.053	0.053			
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.009	-0.009	-0.040	-0.040	-0.040	-0.040			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.008	-0.008	-0.006	-0.013	-0.013	-0.013	-0.013			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	-0.003	0.006	0.029	0.011	0.011	0.011	0.011			

**Table 13-A.4.14 Direct Heating Equipment Trial Standard Level 4 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.00	0.00	0.06	0.15	0.23	0.25	0.24	0.23	0.23			
Natural Gas (EJ)	5.23	5.34	5.25	5.36	5.46	5.50	Natural Gas (EJ)	0.000	0.000	-0.004	-0.010	-0.015	-0.016	-0.015	-0.015	-0.015			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	-0.001	-0.002	-0.004	-0.004	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.98	5.08	5.18	5.21	Natural Gas (Quads)	0.000	0.000	-0.003	-0.009	-0.014	-0.015	-0.014	-0.014	-0.014			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.003			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.00	0.00	0.04	0.14	0.10	0.04	0.04	0.04	0.04			
Gas (TWh)	753	788	623	685	939	996	Gas (TWh)	0.00	-0.11	0.07	0.31	0.48	0.58	0.58	0.58	0.58			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	-0.02	0.00	0.00	-0.02	-0.02	-0.02	-0.02			
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.00	0.00	0.00	-0.13	-0.15	-0.42	-0.42	-0.42	-0.42			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.00	0.02	-0.04	-0.09	-0.13	-0.09	-0.09	-0.09	-0.09			
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.00	-0.10	0.05	0.23	0.30	0.10	0.10	0.10	0.10			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.016	0.024	0.024	0.004	0.004	0.004	0.004			
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.1	Other Fossil (GW)	0.000	0.000	-0.012	0.015	0.049	0.074	0.074	0.074	0.074			
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.6	Nuclear (GW)	0.000	0.000	0.000	-0.019	-0.019	-0.052	-0.052	-0.052	-0.052			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	-0.002	-0.012	-0.009	-0.012	-0.024	-0.024	-0.024	-0.024			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	-0.002	-0.008	0.010	0.041	0.002	0.002	0.002	0.002			

**Table 13-A.4.15 Direct Heating Equipment Trial Standard Level 5 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.00	0.00	0.06	0.17	0.26	0.29	0.27	0.26	0.25			
Natural Gas (EJ)	5.23	5.34	5.25	5.36	5.46	5.50	Natural Gas (EJ)	0.000	0.000	-0.004	-0.011	-0.017	-0.018	-0.017	-0.016	-0.016			
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	-0.001	-0.003	-0.004	-0.005	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.98	5.08	5.17	5.21	Natural Gas (Quads)	0.000	0.000	-0.004	-0.010	-0.016	-0.017	-0.016	-0.015	-0.015			
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	-0.001	-0.003	-0.004	-0.004	-0.004	-0.004	-0.004			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.00	0.00	0.05	0.16	0.11	0.04	0.04	0.04	0.04			
Gas (TWh)	753	788	623	685	940	996	Gas (TWh)	0.00	-0.12	0.08	0.35	0.54	0.65	0.65	0.65	0.65			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	0.00	-0.02	0.00	0.00	-0.02	-0.02	-0.02	-0.02			
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.00	0.00	0.00	-0.15	-0.16	-0.47	-0.47	-0.47	-0.47			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.00	0.02	-0.04	-0.10	-0.15	-0.10	-0.10	-0.10	-0.10			
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.00	-0.11	0.06	0.26	0.34	0.11	0.11	0.11	0.11			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.018	0.027	0.027	0.004	0.004	0.004	0.004			
Other Fossil (GW)	438.9	470.0	445.2	456.3	520.0	566.1	Other Fossil (GW)	0.000	0.000	-0.014	0.017	0.055	0.083	0.083	0.083	0.083			
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.6	Nuclear (GW)	0.000	0.000	0.000	-0.022	-0.022	-0.059	-0.059	-0.059	-0.059			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	-0.002	-0.014	-0.011	-0.014	-0.027	-0.027	-0.027	-0.027			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	-0.002	-0.009	0.011	0.047	0.003	0.003	0.003	0.003			

**Table 13-A.4.16 Direct Heating Equipment Trial Standard Level 6 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.00	0.00	0.09	0.23	0.35	0.38	0.36	0.35	0.34			
Natural Gas (EJ)	5.23	5.34	5.24	5.34	5.43	5.47	Natural Gas (EJ)	0.000	0.000	-0.010	-0.027	-0.041	-0.045	-0.042	-0.040	-0.040			
Other (EJ)	1.98	1.87	1.75	1.74	1.72	1.73	Other (EJ)	0.000	0.000	-0.003	-0.007	-0.011	-0.012	-0.011	-0.010	-0.010			
Natural Gas (Quads)	4.96	5.06	4.97	5.06	5.15	5.19	Natural Gas (Quads)	0.000	0.000	-0.010	-0.025	-0.039	-0.042	-0.040	-0.038	-0.038			
Other (Quads)	1.88	1.77	1.66	1.65	1.63	1.64	Other (Quads)	0.000	0.000	-0.002	-0.007	-0.010	-0.011	-0.010	-0.010	-0.010			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.00	0.00	0.12	0.41	0.28	0.11	0.11	0.11	0.11			
Gas (TWh)	753	788	623	686	940	997	Gas (TWh)	0.00	-0.31	0.20	0.88	1.37	1.66	1.66	1.66	1.66			
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.00	-0.01	-0.05	0.00	0.00	-0.05	-0.05	-0.05	-0.05			
Nuclear (TWh)	782	809	831	947	963	1,115	Nuclear (TWh)	0.00	0.00	0.00	-0.38	-0.42	-1.20	-1.20	-1.20	-1.20			
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.00	0.05	-0.11	-0.25	-0.37	-0.25	-0.25	-0.25	-0.25			
Total (TWh)	4,029	4,151	4,414	4,722	5,083	5,416	Total (TWh)	0.00	-0.28	0.16	0.66	0.86	0.28	0.28	0.28	0.28			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	335.0	337.7	338.4	348.1	Coal (GW)	0.000	0.000	0.046	0.068	0.068	0.011	0.011	0.011	0.011			
Other Fossil (GW)	438.9	470.0	445.2	456.3	520.0	566.2	Other Fossil (GW)	0.000	0.000	-0.035	0.042	0.140	0.212	0.212	0.212	0.212			
Nuclear (GW)	100.1	101.2	104.1	120.5	120.5	139.6	Nuclear (GW)	0.000	0.000	0.000	-0.055	-0.055	-0.150	-0.150	-0.150	-0.150			
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.2	Renewables (GW)	0.000	-0.005	-0.035	-0.027	-0.035	-0.068	-0.068	-0.068	-0.068			
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.3	1,277.1	Total (GW)	0.000	-0.005	-0.024	0.029	0.118	0.006	0.006	0.006	0.006			

**Table 13-A.4.17 Pool Heaters Trial Standard Level 1 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.48	5.52	Natural Gas (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23	Natural Gas (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.000	0.002	0.002	0.001	-0.002	-0.002	-0.002	-0.002
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.002	0.001	0.006	0.008	0.012	0.012	0.012	0.012
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.002	-0.003	-0.008	-0.008	-0.008	-0.008
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.002	0.002	0.006	0.006	0.000	0.000	0.000	0.000
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.000	0.001	0.002	0.002	0.002	0.002
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000

**Table 13-A.4.18 Pool Heaters Trial Standard Level 2 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.48	5.52	Natural Gas (EJ)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23	Natural Gas (Quads)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.000	0.003	0.004	0.001	-0.003	-0.003	-0.003	-0.003
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.004	0.001	0.011	0.015	0.021	0.021	0.021	0.021
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.004	-0.005	-0.014	-0.014	-0.014	-0.014
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.001	-0.001	0.000	-0.001	-0.003	-0.003	-0.003	-0.003
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.004	0.003	0.010	0.010	0.001	0.001	0.001	0.001
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.000
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.001	0.002	0.004	0.004	0.004	0.004
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.000	0.001	0.002	0.001	0.001	0.001	0.001



**Table 13-A.4.19 Pool Heaters Trial Standard Level 3 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.003	0.007	0.009	0.009	0.009	0.009	0.009
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.52	Natural Gas (EJ)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23	Natural Gas (Quads)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.001	0.006	0.009	0.003	-0.007	-0.007	-0.007	-0.007
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.009	0.003	0.024	0.034	0.048	0.048	0.048	0.048
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	-0.001	-0.001	0.001	0.001	-0.001	-0.001	-0.001	-0.001
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.010	-0.011	-0.032	-0.032	-0.032	-0.032
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.001	-0.002	-0.001	-0.003	-0.006	-0.006	-0.006	-0.006
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.008	0.007	0.023	0.023	0.002	0.002	0.002	0.002
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.001	0.002	0.002	-0.001	-0.001	-0.001	-0.001
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.002	0.005	0.008	0.008	0.008	0.008
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.002	-0.002	-0.004	-0.004	-0.004	-0.004
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.001	0.001	0.004	0.001	0.001	0.001	0.001

**Table 13-A.4.20 Pool Heaters Trial Standard Level 4 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.003	0.007	0.009	0.009	0.009	0.009	0.009
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.52	Natural Gas (EJ)	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23	Natural Gas (Quads)	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.001	0.008	0.012	0.004	-0.010	-0.010	-0.010	-0.010
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.012	0.004	0.032	0.045	0.063	0.063	0.063	0.063
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	-0.001	-0.001	0.001	0.001	-0.001	-0.001	-0.001	-0.001
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.013	-0.015	-0.041	-0.041	-0.041	-0.041
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.002	-0.002	-0.001	-0.004	-0.008	-0.008	-0.008	-0.008
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.011	0.009	0.030	0.030	0.002	0.002	0.002	0.002
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.001	0.002	0.002	-0.001	-0.001	-0.001	-0.001
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.002	0.006	0.011	0.011	0.011	0.011
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.002	-0.002	-0.005	-0.005	-0.005	-0.005
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003	-0.003
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.001	0.002	0.005	0.002	0.002	0.002	0.002

**Table 13-A.4.21 Pool Heaters Trial Standard Level 5 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.002	0.006	0.008	0.009	0.009	0.009	0.009
Natural Gas (EJ)	5.23	5.34	5.25	5.37	5.47	5.52	Natural Gas (EJ)	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001
Natural Gas (Quads)	4.96	5.06	4.98	5.09	5.19	5.23	Natural Gas (Quads)	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.001	0.013	0.018	0.005	-0.015	-0.015	-0.015	-0.015
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.019	0.006	0.048	0.068	0.095	0.095	0.095	0.095
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	-0.002	-0.001	0.001	0.001	-0.002	-0.002	-0.002	-0.002
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.020	-0.023	-0.063	-0.063	-0.063	-0.063
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.003	-0.004	-0.002	-0.006	-0.012	-0.012	-0.012	-0.012
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.016	0.014	0.046	0.046	0.004	0.004	0.004	0.004
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.002	0.003	0.003	-0.001	-0.001	-0.001	-0.001
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.004	0.009	0.016	0.016	0.016	0.016
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.003	-0.003	-0.008	-0.008	-0.008	-0.008
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.005	-0.005	-0.005	-0.005
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.001	0.002	0.008	0.003	0.003	0.003	0.003

**Table 13-A.4.22 Pool Heaters Trial Standard Level 6 Forecast High Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 High Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,406	1,427	1,514	1,634	1,766	Electricity Sales (TWh)	0.000	0.000	0.002	0.006	0.007	0.008	0.008	0.008	0.008
Natural Gas (EJ)	5.23	5.34	5.25	5.36	5.47	5.51	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.007	-0.007	-0.007	-0.007	-0.007
Other (EJ)	1.98	1.87	1.75	1.75	1.73	1.74	Other (EJ)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Natural Gas (Quads)	4.96	5.06	4.98	5.08	5.18	5.22	Natural Gas (Quads)	0.000	0.000	-0.002	-0.005	-0.006	-0.007	-0.007	-0.007	-0.007
Other (Quads)	1.88	1.77	1.66	1.66	1.64	1.65	Other (Quads)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,023	2,176	2,249	2,264	2,344	Coal (TWh)	0.000	0.003	0.031	0.045	0.014	-0.037	-0.037	-0.037	-0.037
Gas (TWh)	753	788	623	685	939	995	Gas (TWh)	0.000	-0.047	0.015	0.119	0.169	0.237	0.237	0.237	0.237
Petroleum (TWh)	123	58	47	48	49	51	Petroleum (TWh)	0.000	-0.004	-0.003	0.003	0.003	-0.005	-0.005	-0.005	-0.005
Nuclear (TWh)	782	809	831	947	963	1,116	Nuclear (TWh)	0.000	0.000	0.000	-0.049	-0.056	-0.156	-0.156	-0.156	-0.156
Renewables (TWh)	357	473	737	792	867	910	Renewables (TWh)	0.000	0.007	-0.009	-0.005	-0.015	-0.030	-0.030	-0.030	-0.030
Total (TWh)	4,029	4,151	4,414	4,721	5,082	5,416	Total (TWh)	0.000	-0.041	0.034	0.113	0.114	0.009	0.009	0.009	0.009
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	335.0	337.6	338.3	348.1	Coal (GW)	0.000	0.000	0.006	0.008	0.009	-0.003	-0.003	-0.003	-0.003
Other Fossil (GW)	438.9	470.0	445.2	456.3	519.9	566.0	Other Fossil (GW)	0.000	0.000	0.000	0.009	0.023	0.041	0.041	0.041	0.041
Nuclear (GW)	100.1	101.2	104.1	120.6	120.6	139.7	Nuclear (GW)	0.000	0.000	0.000	-0.008	-0.008	-0.019	-0.019	-0.019	-0.019
Renewables (GW)	99.5	134.3	197.8	205.8	213.4	223.3	Renewables (GW)	0.000	0.000	-0.003	-0.003	-0.003	-0.012	-0.012	-0.012	-0.012
Total (GW)	952.3	1,030.5	1,082.1	1,120.3	1,192.2	1,277.1	Total (GW)	0.000	0.000	0.003	0.006	0.021	0.007	0.007	0.007	0.007

**Table 13-A.4.23 Water Heaters Trial Standard Level 1 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case										
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation			
Residential Sector Energy Consumption							Residential Sector Energy Consumption										
Electricity Sales (TWh)	1,359	1,396	1,387	1,438	1,504	1,564	Electricity Sales (TWh)	0.00	0.00	-0.14	-0.84	-1.43	-1.71	-1.80	-1.84	-1.87	
Natural Gas (EJ)	5.23	5.34	5.17	5.16	5.15	5.05	Natural Gas (EJ)	0.000	0.000	-0.002	-0.014	-0.023	-0.028	-0.030	-0.031	-0.032	
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	
Natural Gas (Quads)	4.96	5.06	4.90	4.89	4.88	4.78	Natural Gas (Quads)	0.000	0.000	-0.002	-0.013	-0.022	-0.027	-0.028	-0.029	-0.030	
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	
Total U.S. Electric Generation							Total U.S. Electric Generation										
Coal (TWh)	2,014	2,009	2,098	2,135	2,116	2,187	Coal (TWh)	0.00	0.09	-0.12	-0.62	-0.86	-1.07	-1.07	-1.07	-1.07	
Gas (TWh)	753	757	682	711	851	910	Gas (TWh)	0.00	0.02	-0.15	-0.72	-1.39	-1.63	-1.63	-1.63	-1.63	
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.03	-0.03	0.00	0.00	0.00	0.00	0.00	
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.00	-0.08	-0.04	-0.08	-0.23	-0.11	-0.11	-0.11	-0.11	
Total (TWh)	4,029	4,073	4,191	4,367	4,543	4,663	Total (TWh)	0.00	0.02	-0.28	-1.46	-2.49	-2.81	-2.81	-2.81	-2.81	
Installed Generating Capacity							Installed Generating Capacity										
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.5	Coal (GW)	0.000	-0.002	-0.032	-0.033	-0.033	-0.075	-0.075	-0.075	-0.075	
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.7	503.1	Other Fossil (GW)	0.000	0.000	-0.003	-0.004	-0.050	-0.035	-0.035	-0.035	-0.035	
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	-0.021	-0.017	-0.019	-0.029	-0.028	-0.028	-0.028	-0.028	
Total (GW)	952.3	1,022.4	1,002.2	1,017.5	1,054.2	1,093.7	Total (GW)	0.000	-0.023	-0.052	-0.056	-0.112	-0.138	-0.138	-0.138	-0.138	

**Table 13-A.4.24 Water Heaters Trial Standard Level 2 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case										
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation			
Residential Sector Energy Consumption							Residential Sector Energy Consumption										
Electricity Sales (TWh)	1,359	1,396	1,387	1,438	1,503	1,564	Electricity Sales (TWh)	0.00	0.00	-0.17	-1.06	-1.80	-2.16	-2.28	-2.33	-2.36	
Natural Gas (EJ)	5.23	5.34	5.17	5.15	5.13	5.03	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053	
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004	
Natural Gas (Quads)	4.96	5.06	4.90	4.88	4.86	4.77	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050	
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.003	-0.004	-0.004	-0.004	
Total U.S. Electric Generation							Total U.S. Electric Generation										
Coal (TWh)	2,014	2,009	2,098	2,135	2,116	2,186	Coal (TWh)	0.00	0.14	-0.19	-1.01	-1.39	-1.72	-1.72	-1.72	-1.72	
Gas (TWh)	753	757	682	711	850	909	Gas (TWh)	0.00	0.03	-0.25	-1.16	-2.24	-2.60	-2.60	-2.60	-2.60	
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.05	-0.05	0.00	0.00	0.00	0.00	0.00	
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.00	-0.13	-0.07	-0.13	-0.37	-0.17	-0.17	-0.17	-0.17	
Total (TWh)	4,029	4,073	4,191	4,366	4,541	4,662	Total (TWh)	0.00	0.04	-0.45	-2.35	-3.99	-4.49	-4.49	-4.49	-4.49	
Installed Generating Capacity							Installed Generating Capacity										
Coal (GW)	313.8	325.0	326.8	329.2	329.8	333.5	Coal (GW)	0.000	-0.004	-0.052	-0.053	-0.053	-0.120	-0.120	-0.120	-0.120	
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.7	503.0	Other Fossil (GW)	0.000	0.000	-0.004	-0.006	-0.080	-0.056	-0.056	-0.056	-0.056	
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	-0.034	-0.028	-0.031	-0.046	-0.045	-0.045	-0.045	-0.045	
Total (GW)	952.3	1,022.4	1,002.2	1,017.5	1,054.1	1,093.6	Total (GW)	0.000	-0.037	-0.084	-0.089	-0.179	-0.221	-0.221	-0.221	-0.221	

**Table 13-A.4.25 Water Heaters Trial Standard Level 3 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,396	1,387	1,437	1,501	1,562	Electricity Sales (TWh)	0.00	0.00	-0.36	-2.18	-3.71	-4.45	-4.69	-4.80	-4.86
Natural Gas (EJ)	5.23	5.34	5.17	5.15	5.13	5.03	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004
Natural Gas (Quads)	4.96	5.06	4.90	4.88	4.86	4.77	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,009	2,098	2,135	2,115	2,186	Coal (TWh)	0.00	0.16	-0.22	-1.15	-1.59	-1.97	-1.97	-1.97	-1.97
Gas (TWh)	753	757	682	711	849	909	Gas (TWh)	0.00	0.03	-0.28	-1.33	-2.56	-2.98	-2.98	-2.98	-2.98
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.06	-0.06	0.00	0.00	0.00	0.00	0.00
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.00	-0.15	-0.08	-0.15	-0.42	-0.20	-0.20	-0.20	-0.20
Total (TWh)	4,029	4,073	4,190	4,365	4,540	4,661	Total (TWh)	0.00	0.05	-0.52	-2.69	-4.56	-5.14	-5.14	-5.14	-5.14
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	326.8	329.2	329.8	333.5	Coal (GW)	0.000	-0.004	-0.059	-0.060	-0.061	-0.138	-0.138	-0.138	-0.138
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.7	503.0	Other Fossil (GW)	0.000	0.000	-0.005	-0.007	-0.092	-0.064	-0.064	-0.064	-0.064
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (GW)	99.5	126.3	138.2	141.4	148.4	152.3	Renewables (GW)	0.000	-0.038	-0.032	-0.036	-0.052	-0.052	-0.052	-0.052	-0.052
Total (GW)	952.3	1,022.4	1,002.2	1,017.5	1,054.1	1,093.5	Total (GW)	0.000	-0.043	-0.096	-0.102	-0.205	-0.253	-0.253	-0.253	-0.253

**Table 13-A.4.26 Water Heaters Trial Standard Level 4 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case									
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation		
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>									
Electricity Sales (TWh)	1,359	1,396	1,386	1,436	1,500	1,560	Electricity Sales (TWh)	0.00	0.00	-0.51	-3.07	-5.23	-6.27	-6.62	-6.76	-6.85
Natural Gas (EJ)	5.23	5.34	5.17	5.15	5.13	5.03	Natural Gas (EJ)	0.000	0.000	-0.004	-0.023	-0.039	-0.047	-0.050	-0.051	-0.053
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004
Natural Gas (Quads)	4.96	5.06	4.90	4.88	4.86	4.77	Natural Gas (Quads)	0.000	0.000	-0.004	-0.022	-0.037	-0.044	-0.047	-0.049	-0.050
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>									
Coal (TWh)	2,014	2,009	2,098	2,135	2,115	2,186	Coal (TWh)	0.00	0.18	-0.24	-1.26	-1.74	-2.16	-2.16	-2.16	-2.16
Gas (TWh)	753	757	682	711	849	909	Gas (TWh)	0.00	0.03	-0.31	-1.46	-2.81	-3.27	-3.27	-3.27	-3.27
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.06	-0.06	0.00	0.00	0.00	0.00	0.00
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.00	-0.16	-0.08	-0.17	-0.46	-0.21	-0.21	-0.21	-0.21
Total (TWh)	4,029	4,073	4,190	4,365	4,540	4,660	Total (TWh)	0.00	0.05	-0.57	-2.95	-5.01	-5.65	-5.65	-5.65	-5.65
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>									
Coal (GW)	313.8	325.0	326.8	329.2	329.8	333.4	Coal (GW)	0.000	-0.005	-0.065	-0.066	-0.067	-0.151	-0.151	-0.151	-0.151
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.7	503.0	Other Fossil (GW)	0.000	0.000	-0.005	-0.007	-0.101	-0.070	-0.070	-0.070	-0.070
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (GW)	99.5	126.3	138.2	141.4	148.4	152.3	Renewables (GW)	0.000	-0.042	-0.035	-0.039	-0.058	-0.057	-0.057	-0.057	-0.057
Total (GW)	952.3	1,022.4	1,002.2	1,017.5	1,054.1	1,093.5	Total (GW)	0.000	-0.047	-0.105	-0.112	-0.225	-0.278	-0.278	-0.278	-0.278

**Table 13-A.4.27 Water Heaters Trial Standard Level 5 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,386	1,434	1,497	1,556	Electricity Sales (TWh)	0.00	0.00	-0.81	-4.90	-8.34	-10.00	-10.55	-10.79	-10.94			
Natural Gas (EJ)	5.23	5.34	5.17	5.15	5.14	5.04	Natural Gas (EJ)	0.000	0.000	-0.003	-0.016	-0.027	-0.032	-0.034	-0.036	-0.037			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003			
Natural Gas (Quads)	4.96	5.06	4.90	4.88	4.87	4.78	Natural Gas (Quads)	0.000	0.000	-0.003	-0.015	-0.025	-0.031	-0.033	-0.034	-0.035			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,134	2,114	2,185	Coal (TWh)	0.00	0.08	-0.35	-2.11	-2.53	-3.04	-3.04	-3.04	-3.04			
Gas (TWh)	753	757	682	710	847	906	Gas (TWh)	0.00	0.23	-0.39	-2.36	-4.90	-5.69	-5.69	-5.69	-5.69			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.06	-0.12	-0.02	-0.02	-0.02	-0.02	-0.02			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Renewables (TWh)	357	443	534	602	655	667	Renewables (TWh)	0.00	-0.33	-0.17	-0.32	-0.75	-0.53	-0.53	-0.53	-0.53			
Total (TWh)	4,029	4,073	4,190	4,363	4,537	4,657	Total (TWh)	0.00	-0.02	-0.85	-4.91	-8.21	-9.28	-9.28	-9.28	-9.28			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.8	329.2	329.8	333.4	Coal (GW)	0.000	-0.006	-0.087	-0.090	-0.090	-0.182	-0.182	-0.182	-0.182			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.6	502.9	Other Fossil (GW)	0.000	0.004	0.032	0.010	-0.187	-0.175	-0.175	-0.175	-0.175			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.2	138.1	141.3	148.4	152.3	Renewables (GW)	0.000	-0.109	-0.063	-0.063	-0.086	-0.115	-0.115	-0.115	-0.115			
Total (GW)	952.3	1,022.3	1,002.2	1,017.5	1,053.9	1,093.3	Total (GW)	0.000	-0.110	-0.118	-0.143	-0.363	-0.472	-0.472	-0.472	-0.472			

**Table 13-A.4.28 Water Heaters Trial Standard Level 6 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,386	1,434	1,497	1,556	Electricity Sales (TWh)	0.00	0.00	-0.79	-4.78	-8.13	-9.75	-10.29	-10.51	-10.66			
Natural Gas (EJ)	5.23	5.34	5.17	5.14	5.13	5.02	Natural Gas (EJ)	0.000	0.000	-0.004	-0.025	-0.043	-0.051	-0.054	-0.056	-0.058			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.005			
Natural Gas (Quads)	4.96	5.06	4.90	4.88	4.86	4.76	Natural Gas (Quads)	0.000	0.000	-0.004	-0.024	-0.041	-0.049	-0.052	-0.053	-0.055			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.002	-0.003	-0.004	-0.004	-0.004	-0.004			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,133	2,114	2,184	Coal (TWh)	0.00	0.10	-0.45	-2.70	-3.23	-3.87	-3.87	-3.87	-3.87			
Gas (TWh)	753	757	682	709	846	905	Gas (TWh)	0.00	0.30	-0.49	-3.01	-6.25	-7.24	-7.24	-7.24	-7.24			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.00	0.00	0.08	-0.15	-0.03	-0.03	-0.03	-0.03	-0.03			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Renewables (TWh)	357	443	534	602	655	667	Renewables (TWh)	0.00	-0.43	-0.22	-0.41	-0.96	-0.68	-0.68	-0.68	-0.68			
Total (TWh)	4,029	4,073	4,190	4,362	4,535	4,654	Total (TWh)	0.00	-0.03	-1.09	-6.28	-10.46	-11.81	-11.81	-11.81	-11.81			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.8	329.2	329.8	333.4	Coal (GW)	0.000	-0.008	-0.112	-0.115	-0.114	-0.232	-0.232	-0.232	-0.232			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.6	502.9	Other Fossil (GW)	0.000	0.006	0.041	0.013	-0.239	-0.222	-0.222	-0.222	-0.222			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.2	138.1	141.3	148.4	152.3	Renewables (GW)	0.000	-0.140	-0.081	-0.080	-0.109	-0.146	-0.146	-0.146	-0.146			
Total (GW)	952.3	1,022.3	1,002.1	1,017.4	1,053.8	1,093.2	Total (GW)	0.000	-0.142	-0.152	-0.182	-0.462	-0.600	-0.600	-0.600	-0.600			

**Table 13-A.4.29 Water Heaters Trial Standard Level 7 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,383	1,414	1,462	1,515	Electricity Sales (TWh)	0.00	0.00	-4.15	-25.11	-42.61	-50.93	-53.46	-54.38	-54.95			
Natural Gas (EJ)	5.23	5.34	5.16	5.12	5.08	4.97	Natural Gas (EJ)	0.000	0.000	-0.009	-0.052	-0.088	-0.108	-0.117	-0.123	-0.128			
Other (EJ)	1.98	1.88	1.73	1.68	1.65	1.63	Other (EJ)	0.000	0.000	-0.001	-0.004	-0.007	-0.008	-0.009	-0.009	-0.009			
Natural Gas (Quads)	4.96	5.06	4.89	4.85	4.82	4.71	Natural Gas (Quads)	0.000	0.000	-0.008	-0.049	-0.084	-0.103	-0.111	-0.117	-0.121			
Other (Quads)	1.88	1.78	1.64	1.60	1.56	1.54	Other (Quads)	0.000	0.000	-0.001	-0.004	-0.006	-0.008	-0.008	-0.009	-0.009			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,097	2,127	2,106	2,175	Coal (TWh)	0.00	0.32	-1.45	-8.82	-10.63	-12.81	-12.81	-12.81	-12.81			
Gas (TWh)	753	758	680	702	831	888	Gas (TWh)	0.00	0.96	-1.60	-9.86	-20.58	-23.97	-23.97	-23.97	-23.97			
Petroleum (TWh)	123	55	46	48	48	49	Petroleum (TWh)	0.00	0.00	0.25	-0.50	-0.10	-0.10	-0.10	-0.10	-0.10			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Renewables (TWh)	357	442	533	601	653	666	Renewables (TWh)	0.00	-1.38	-0.71	-1.34	-3.16	-2.24	-2.24	-2.24	-2.24			
Total (TWh)	4,029	4,073	4,187	4,347	4,511	4,627	Total (TWh)	0.00	-0.10	-3.51	-20.52	-34.47	-39.12	-39.12	-39.12	-39.12			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.5	328.9	329.5	332.8	Coal (GW)	0.000	-0.025	-0.362	-0.375	-0.376	-0.768	-0.768	-0.768	-0.768			
Other Fossil (GW)	438.9	469.9	433.2	437.8	466.0	502.4	Other Fossil (GW)	0.000	0.018	0.133	0.042	-0.786	-0.736	-0.736	-0.736	-0.736			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	125.8	137.9	141.1	148.1	151.9	Renewables (GW)	0.000	-0.450	-0.261	-0.263	-0.359	-0.485	-0.485	-0.485	-0.485			
Total (GW)	952.3	1,021.9	1,001.8	1,017.0	1,052.8	1,091.8	Total (GW)	0.000	-0.457	-0.490	-0.596	-1.522	-1.988	-1.988	-1.988	-1.988			

**Table 13-A.4.30 Water Heaters Trial Standard Level 8 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,382	1,407	1,451	1,501	Electricity Sales (TWh)	0.00	0.00	-5.22	-31.74	-54.12	-65.11	-68.91	-70.68	-71.86			
Natural Gas (EJ)	5.23	5.34	5.15	5.07	4.99	4.86	Natural Gas (EJ)	0.000	0.000	-0.018	-0.104	-0.176	-0.212	-0.226	-0.234	-0.240			
Other (EJ)	1.98	1.88	1.73	1.68	1.64	1.62	Other (EJ)	0.000	0.000	-0.001	-0.008	-0.013	-0.016	-0.017	-0.017	-0.018			
Natural Gas (Quads)	4.96	5.06	4.88	4.80	4.73	4.61	Natural Gas (Quads)	0.000	0.000	-0.017	-0.099	-0.167	-0.201	-0.214	-0.222	-0.228			
Other (Quads)	1.88	1.78	1.64	1.59	1.56	1.54	Other (Quads)	0.000	0.000	-0.001	-0.007	-0.012	-0.015	-0.016	-0.016	-0.017			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,096	2,122	2,101	2,168	Coal (TWh)	0.00	0.49	-2.26	-13.69	-16.44	-19.77	-19.77	-19.77	-19.77			
Gas (TWh)	753	759	680	697	820	875	Gas (TWh)	0.00	1.51	-2.49	-15.30	-31.82	-36.99	-36.99	-36.99	-36.99			
Petroleum (TWh)	123	55	46	48	48	49	Petroleum (TWh)	0.00	0.00	0.39	-0.78	-0.16	-0.16	-0.16	-0.16	-0.16			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Renewables (TWh)	357	441	533	600	651	665	Renewables (TWh)	0.00	-2.16	-1.12	-2.08	-4.88	-3.45	-3.45	-3.45	-3.45			
Total (TWh)	4,029	4,073	4,186	4,336	4,492	4,606	Total (TWh)	0.00	-0.16	-5.48	-31.84	-53.30	-60.36	-60.36	-60.36	-60.36			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.3	328.7	329.3	332.4	Coal (GW)	0.000	-0.039	-0.566	-0.582	-0.582	-1.184	-1.184	-1.184	-1.184			
Other Fossil (GW)	438.9	469.9	433.3	437.9	465.6	502.0	Other Fossil (GW)	0.000	0.029	0.208	0.065	-1.216	-1.135	-1.135	-1.135	-1.135			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	125.6	137.8	141.0	147.9	151.7	Renewables (GW)	0.000	-0.704	-0.408	-0.408	-0.556	-0.748	-0.748	-0.748	-0.748			
Total (GW)	952.3	1,021.7	1,001.5	1,016.7	1,051.9	1,090.7	Total (GW)	0.000	-0.714	-0.766	-0.925	-2.353	-3.068	-3.068	-3.068	-3.068			

**Table 13-A.4.31 Direct Heating Equipment Trial Standard Level 1 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.058	0.063	0.059	0.057	0.056			
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.16	5.07	Natural Gas (EJ)	0.000	0.000	-0.002	-0.004	-0.007	-0.007	-0.007	-0.007	-0.007			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.89	4.80	Natural Gas (Quads)	0.000	0.000	-0.002	-0.004	-0.006	-0.007	-0.006	-0.006	-0.006			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.023	-0.034	0.072	0.015	-0.065	-0.065	-0.065	-0.065			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.158	-0.237	-0.174	-0.136	0.012	0.012	0.012	0.012			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.008	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.156	0.338	0.277	0.275	0.305	0.305	0.305	0.305			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.021	0.067	0.168	0.154	0.251	0.251	0.251	0.251			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.014	-0.014	-0.014	-0.014			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.001	0.006	0.006	0.002	0.028	0.028	0.028	0.028			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.3	138.3	141.5	148.6	152.5	Renewables (GW)	0.000	0.045	0.112	0.112	0.105	0.100	0.100	0.100	0.100			
Total (GW)	952.3	1,022.4	1,002.4	1,017.7	1,054.4	1,093.9	Total (GW)	0.000	0.047	0.118	0.118	0.107	0.114	0.114	0.114	0.114			

**Table 13-A.4.32 Direct Heating Equipment Trial Standard Level 2 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.057	0.062	0.059	0.057	0.056			
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.16	5.07	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.007	-0.008	-0.007	-0.007	-0.007			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.89	4.80	Natural Gas (Quads)	0.000	0.000	-0.002	-0.004	-0.007	-0.007	-0.007	-0.007	-0.007			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.025	-0.036	0.078	0.016	-0.070	-0.070	-0.070	-0.070			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.170	-0.255	-0.187	-0.147	0.013	0.013	0.013	0.013			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.008	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.168	0.364	0.298	0.296	0.328	0.328	0.328	0.328			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.023	0.072	0.180	0.166	0.270	0.270	0.270	0.270			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.016	-0.016	-0.016	-0.016			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.001	0.007	0.006	0.002	0.030	0.030	0.030	0.030			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.3	138.3	141.5	148.6	152.5	Renewables (GW)	0.000	0.049	0.121	0.121	0.113	0.108	0.108	0.108	0.108			
Total (GW)	952.3	1,022.5	1,002.4	1,017.7	1,054.4	1,093.9	Total (GW)	0.000	0.050	0.127	0.126	0.115	0.123	0.123	0.123	0.123			

**Table 13-A.4.33 Direct Heating Equipment Trial Standard Level 3 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.014	0.037	0.057	0.062	0.059	0.056	0.056			
Natural Gas (EJ)	5.23	5.34	5.17	5.16	5.16	5.07	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.008	-0.008	-0.008	-0.008	-0.007			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.89	4.80	Natural Gas (Quads)	0.000	0.000	-0.002	-0.005	-0.007	-0.008	-0.007	-0.007	-0.007			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.026	-0.038	0.082	0.017	-0.074	-0.074	-0.074	-0.074			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.179	-0.269	-0.197	-0.155	0.014	0.014	0.014	0.014			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.009	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.177	0.384	0.314	0.312	0.346	0.346	0.346	0.346			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.024	0.076	0.190	0.175	0.285	0.285	0.285	0.285			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	-0.001	-0.001	-0.001	-0.016	-0.016	-0.016	-0.016			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.001	0.007	0.007	0.002	0.032	0.032	0.032	0.032			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.4	138.3	141.5	148.6	152.5	Renewables (GW)	0.000	0.052	0.128	0.127	0.120	0.114	0.114	0.114	0.114			
Total (GW)	952.3	1,022.5	1,002.4	1,017.7	1,054.4	1,093.9	Total (GW)	0.000	0.053	0.134	0.133	0.121	0.129	0.129	0.129	0.129			

**Table 13-A.4.34 Direct Heating Equipment Trial Standard Level 4 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.057	0.151	0.234	0.255	0.241	0.232	0.231			
Natural Gas (EJ)	5.23	5.34	5.17	5.16	5.15	5.06	Natural Gas (EJ)	0.000	0.000	-0.004	-0.010	-0.015	-0.016	-0.015	-0.015	-0.015			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	-0.001	-0.002	-0.004	-0.004	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.90	4.89	4.89	4.79	Natural Gas (Quads)	0.000	0.000	-0.003	-0.009	-0.014	-0.015	-0.014	-0.014	-0.014			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	-0.001	-0.002	-0.003	-0.004	-0.004	-0.003	-0.003			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.061	-0.131	0.035	-0.007	-0.217	-0.217	-0.217	-0.217			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.357	-0.420	-0.313	-0.277	0.041	0.041	0.041	0.041			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.029	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	535	603	657	669	Renewables (TWh)	0.000	0.298	0.664	0.587	0.559	0.628	0.628	0.628	0.628			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.003	0.114	0.280	0.275	0.452	0.452	0.452	0.452			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	-0.004	-0.005	-0.005	-0.037	-0.037	-0.037	-0.037			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.2	Other Fossil (GW)	0.000	0.002	0.003	0.005	-0.003	0.075	0.075	0.075	0.075			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.4	138.4	141.6	148.7	152.6	Renewables (GW)	0.000	0.088	0.223	0.222	0.210	0.203	0.203	0.203	0.203			
Total (GW)	952.3	1,022.5	1,002.5	1,017.8	1,054.5	1,094.0	Total (GW)	0.000	0.090	0.222	0.222	0.203	0.242	0.242	0.242	0.242			



**Table 13-A.4.35 Direct Heating Equipment Trial Standard Level 5 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.065	0.171	0.264	0.286	0.269	0.257	0.254			
Natural Gas (EJ)	5.23	5.34	5.17	5.16	5.15	5.06	Natural Gas (EJ)	0.000	0.000	-0.004	-0.011	-0.017	-0.018	-0.017	-0.016	-0.016			
Other (EJ)	1.98	1.88	1.73	1.69	1.65	1.63	Other (EJ)	0.000	0.000	-0.001	-0.003	-0.004	-0.005	-0.004	-0.004	-0.004			
Natural Gas (Quads)	4.96	5.06	4.90	4.89	4.88	4.79	Natural Gas (Quads)	0.000	0.000	-0.004	-0.010	-0.016	-0.017	-0.016	-0.015	-0.015			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	-0.001	-0.003	-0.004	-0.004	-0.004	-0.004	-0.004			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.070	-0.148	0.039	-0.008	-0.243	-0.243	-0.243	-0.243			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.406	-0.477	-0.354	-0.313	0.046	0.046	0.046	0.046			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.033	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	535	603	657	669	Renewables (TWh)	0.000	0.340	0.755	0.664	0.631	0.705	0.705	0.705	0.705			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,667	Total (TWh)	0.000	0.003	0.129	0.316	0.310	0.507	0.507	0.507	0.507			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	-0.004	-0.006	-0.006	-0.041	-0.041	-0.041	-0.041			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.2	Other Fossil (GW)	0.000	0.002	0.004	0.006	-0.003	0.084	0.084	0.084	0.084			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.4	138.5	141.7	148.7	152.6	Renewables (GW)	0.000	0.100	0.253	0.251	0.237	0.228	0.228	0.228	0.228			
Total (GW)	952.3	1,022.5	1,002.6	1,017.9	1,054.5	1,094.1	Total (GW)	0.000	0.102	0.253	0.251	0.229	0.271	0.271	0.271	0.271			

**Table 13-A.4.36 Direct Heating Equipment Trial Standard Level 6 Forecast Low  
Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
Residential Sector Energy Consumption							Residential Sector Energy Consumption												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.086	0.228	0.352	0.382	0.360	0.346	0.342			
Natural Gas (EJ)	5.23	5.34	5.16	5.14	5.13	5.03	Natural Gas (EJ)	0.000	0.000	-0.010	-0.027	-0.041	-0.045	-0.042	-0.040	-0.040			
Other (EJ)	1.98	1.88	1.73	1.68	1.65	1.62	Other (EJ)	0.000	0.000	-0.003	-0.007	-0.011	-0.012	-0.011	-0.010	-0.010			
Natural Gas (Quads)	4.96	5.06	4.89	4.87	4.86	4.77	Natural Gas (Quads)	0.000	0.000	-0.010	-0.025	-0.039	-0.042	-0.040	-0.038	-0.038			
Other (Quads)	1.88	1.78	1.64	1.59	1.56	1.54	Other (Quads)	0.000	0.000	-0.002	-0.007	-0.010	-0.011	-0.010	-0.010	-0.010			
Total U.S. Electric Generation							Total U.S. Electric Generation												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,187	Coal (TWh)	0.000	0.176	-0.376	0.100	-0.020	-0.620	-0.620	-0.620	-0.620			
Gas (TWh)	753	756	681	711	851	912	Gas (TWh)	0.000	-1.028	-1.208	-0.900	-0.796	0.116	0.116	0.116	0.116			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.084	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	444	536	604	658	670	Renewables (TWh)	0.000	0.860	1.912	1.688	1.604	1.796	1.796	1.796	1.796			
Total (TWh)	4,029	4,073	4,191	4,369	4,546	4,667	Total (TWh)	0.000	0.008	0.328	0.804	0.788	1.292	1.292	1.292	1.292			
Installed Generating Capacity							Installed Generating Capacity												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.5	Coal (GW)	0.000	0.000	-0.011	-0.014	-0.014	-0.104	-0.104	-0.104	-0.104			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.3	Other Fossil (GW)	0.000	0.005	0.010	0.014	-0.008	0.214	0.214	0.214	0.214			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.6	138.8	142.0	149.1	153.0	Renewables (GW)	0.000	0.254	0.641	0.638	0.604	0.582	0.582	0.582	0.582			
Total (GW)	952.3	1,022.7	1,002.9	1,018.2	1,054.9	1,094.5	Total (GW)	0.000	0.259	0.640	0.638	0.582	0.691	0.691	0.691	0.691			

**Table 13-A.4.37 Pool Heaters Trial Standard Level 1 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07	Natural Gas (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.64	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81	Natural Gas (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.001	-0.005	0.000	0.002	-0.005	-0.005	-0.005	-0.005			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.007	-0.007	-0.006	-0.008	0.001	0.001	0.001	0.001			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.006	0.014	0.011	0.010	0.012	0.012	0.012	0.012			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.000	0.002	0.005	0.003	0.008	0.008	0.008	0.008			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	0.002			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004			
Total (GW)	952.3	1,022.4	1,002.3	1,017.6	1,054.3	1,093.8	Total (GW)	0.000	0.002	0.005	0.005	0.004	0.005	0.005	0.005	0.005			

**Table 13-A.4.38 Pool Heaters Trial Standard Level 2 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07	Natural Gas (EJ)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001			
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.64	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81	Natural Gas (Quads)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001			
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.003	-0.010	-0.001	0.003	-0.009	-0.009	-0.009	-0.009			
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.012	-0.012	-0.010	-0.015	0.001	0.001	0.001	0.001			
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.001	0.000	0.000	0.000	0.000	0.000			
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.010	0.025	0.021	0.018	0.022	0.022	0.022	0.022			
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.000	0.003	0.009	0.006	0.014	0.014	0.014	0.014			
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001			
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.003	0.003			
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	0.003	0.008	0.008	0.007	0.007	0.007	0.007	0.007			
Total (GW)	952.3	1,022.4	1,002.3	1,017.6	1,054.3	1,093.8	Total (GW)	0.000	0.003	0.008	0.008	0.008	0.009	0.009	0.009	0.009			

**Table 13-A.4.39 Pool Heaters Trial Standard Level 3 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.003	0.007	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07	Natural Gas (EJ)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.64	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81	Natural Gas (Quads)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.006	-0.022	-0.002	0.006	-0.021	-0.021	-0.021	-0.021	-0.021	-0.021	-0.021
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.028	-0.027	-0.022	-0.034	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.023	0.055	0.047	0.041	0.049	0.049	0.049	0.049	0.049	0.049	0.049
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.001	0.007	0.019	0.013	0.031	0.031	0.031	0.031	0.031	0.031	0.031
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	0.000	0.000	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.000	0.001	0.001	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	0.006	0.018	0.018	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016
Total (GW)	952.3	1,022.4	1,002.3	1,017.6	1,054.3	1,093.8	Total (GW)	0.000	0.006	0.019	0.019	0.018	0.020	0.020	0.020	0.020	0.020	0.020	0.020

**Table 13-A.4.40 Pool Heaters Trial Standard Level 4 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case												
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation					
<i>Residential Sector Energy Consumption</i>							<i>Residential Sector Energy Consumption</i>												
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.003	0.007	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07	Natural Gas (EJ)	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.63	Other (EJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81	Natural Gas (Quads)	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Total U.S. Electric Generation</i>							<i>Total U.S. Electric Generation</i>												
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.008	-0.029	-0.002	0.008	-0.027	-0.027	-0.027	-0.027	-0.027	-0.027	-0.027
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.037	-0.035	-0.029	-0.045	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.030	0.072	0.061	0.054	0.064	0.064	0.064	0.064	0.064	0.064	0.064
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.001	0.009	0.025	0.017	0.041	0.041	0.041	0.041	0.041	0.041	0.041
<i>Installed Generating Capacity</i>							<i>Installed Generating Capacity</i>												
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	0.000	0.000	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.001	0.001	0.001	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	0.008	0.024	0.024	0.022	0.021	0.021	0.021	0.021	0.021	0.021	0.021
Total (GW)	952.3	1,022.4	1,002.3	1,017.6	1,054.3	1,093.8	Total (GW)	0.000	0.008	0.024	0.025	0.023	0.026	0.026	0.026	0.026	0.026	0.026	0.026

**Table 13-A.4.41 Pool Heaters Trial Standard Level 5 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case										
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation			
Residential Sector Energy Consumption							Residential Sector Energy Consumption										
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.002	0.006	0.008	0.009	0.009	0.009	0.009	
Natural Gas (EJ)	5.23	5.34	5.17	5.17	5.17	5.07	Natural Gas (EJ)	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003	
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.63	Other (EJ)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	
Natural Gas (Quads)	4.96	5.06	4.90	4.90	4.90	4.81	Natural Gas (Quads)	0.000	0.000	-0.001	-0.002	-0.003	-0.003	-0.003	-0.003	-0.003	
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	
Total U.S. Electric Generation							Total U.S. Electric Generation										
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.012	-0.044	-0.003	0.012	-0.041	-0.041	-0.041	-0.041	
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.056	-0.053	-0.045	-0.068	0.006	0.006	0.006	0.006	
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.006	0.000	0.000	0.000	0.000	0.000	
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.045	0.110	0.093	0.082	0.097	0.097	0.097	0.097	
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.001	0.013	0.038	0.026	0.062	0.062	0.062	0.062	
Installed Generating Capacity							Installed Generating Capacity										
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	0.000	0.000	-0.006	-0.006	-0.006	-0.006	
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.001	0.002	0.002	0.013	0.013	0.013	0.013	
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (GW)	99.5	126.3	138.2	141.4	148.5	152.4	Renewables (GW)	0.000	0.013	0.036	0.036	0.033	0.032	0.032	0.032	0.032	
Total (GW)	952.3	1,022.4	1,002.3	1,017.6	1,054.3	1,093.8	Total (GW)	0.000	0.013	0.037	0.038	0.035	0.039	0.039	0.039	0.039	

**Table 13-A.4.42 Pool Heaters Trial Standard Level 6 Forecast Low Economic Growth Forecast**

NEMS-BT Results:							Difference from AEO2009 Low Growth Reference Case										
	2005	2010	2015	2020	2025	2030		2005	2010	2015	2020	2025	2030	Extrapolation			
Residential Sector Energy Consumption							Residential Sector Energy Consumption										
Electricity Sales (TWh)	1,359	1,396	1,387	1,439	1,505	1,566	Electricity Sales (TWh)	0.000	0.000	0.002	0.006	0.007	0.008	0.008	0.008	0.008	
Natural Gas (EJ)	5.23	5.34	5.17	5.16	5.16	5.07	Natural Gas (EJ)	0.000	0.000	-0.002	-0.005	-0.007	-0.007	-0.007	-0.007	-0.007	
Other (EJ)	1.98	1.88	1.73	1.69	1.66	1.63	Other (EJ)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	
Natural Gas (Quads)	4.96	5.06	4.90	4.89	4.89	4.80	Natural Gas (Quads)	0.000	0.000	-0.002	-0.005	-0.006	-0.007	-0.007	-0.007	-0.007	
Other (Quads)	1.88	1.78	1.64	1.60	1.57	1.55	Other (Quads)	0.000	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	
Total U.S. Electric Generation							Total U.S. Electric Generation										
Coal (TWh)	2,014	2,009	2,098	2,136	2,117	2,188	Coal (TWh)	0.000	0.029	-0.108	-0.008	0.031	-0.102	-0.102	-0.102	-0.102	
Gas (TWh)	753	757	682	712	852	912	Gas (TWh)	0.000	-0.139	-0.132	-0.111	-0.169	0.016	0.016	0.016	0.016	
Petroleum (TWh)	123	55	46	49	48	49	Petroleum (TWh)	0.000	0.000	0.000	-0.016	0.000	0.000	0.000	0.000	0.000	
Nuclear (TWh)	782	809	831	869	872	849	Nuclear (TWh)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (TWh)	357	443	534	602	656	668	Renewables (TWh)	0.000	0.112	0.273	0.231	0.204	0.241	0.241	0.241	0.241	
Total (TWh)	4,029	4,073	4,191	4,368	4,545	4,666	Total (TWh)	0.000	0.003	0.033	0.096	0.065	0.155	0.155	0.155	0.155	
Installed Generating Capacity							Installed Generating Capacity										
Coal (GW)	313.8	325.0	326.9	329.3	329.9	333.6	Coal (GW)	0.000	0.000	0.000	-0.001	-0.001	-0.016	-0.016	-0.016	-0.016	
Other Fossil (GW)	438.9	469.9	433.1	437.8	466.8	503.1	Other Fossil (GW)	0.000	0.000	0.002	0.004	0.005	0.033	0.033	0.033	0.033	
Nuclear (GW)	100.1	101.2	104.1	109.1	109.1	104.7	Nuclear (GW)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Renewables (GW)	99.5	126.3	138.3	141.5	148.6	152.5	Renewables (GW)	0.000	0.032	0.090	0.090	0.083	0.080	0.080	0.080	0.080	
Total (GW)	952.3	1,022.4	1,002.4	1,017.7	1,054.4	1,093.9	Total (GW)	0.000	0.032	0.093	0.093	0.087	0.097	0.097	0.097	0.097	

## REFERENCES

1. Energy Information Administration, *Annual Energy Outlook 2009 with Projections to 2030*, 2009. Washington, DC. Report No. DOE/EIA-0383(2009).  
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