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Annual Energy Outlook Retrospective Review: Evaluation of 2013 and Prior Reference Case Projections

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AEO Retrospective Review: Evaluation of 2013 and Prior Reference Case Projections

The U.S. Energy Information Administration (EIA) produces projections of energy production, consumption and prices each year in the *Annual Energy Outlook (AEO)*. Each year, EIA also produces an *AEO Retrospective Review* document, which presents a comparison between realized energy outcomes and the Reference case projections included in previous editions of the *AEO*. The purpose of the Retrospective is to show the relationship between past AEO projections and actual energy indicators, enable trend analysis, and inform discussions of potential improvements to the *AEO*.

The projections in the *AEO* are not statements of what will happen but of what might happen, given assumptions and methodologies. The *AEO* Reference case projection assumes trends that are consistent with historical and current market behavior, technological and demographic changes, and current laws and regulations. The potential impacts of pending or proposed legislation, regulations, and standards are not reflected in the Reference case projections¹.

The discussion and analysis in each year's *AEO* primarily focuses on a Reference case, lower and higher economic growth cases, and lower and higher oil price cases. In addition to these standard cases, numerous alternative cases have been included in recent *AEOs*. Readers are encouraged to review the full range of cases, which address many of the uncertainties inherent in long-term projections.

The *AEO Retrospective* comparison, by contrast, summarizes the differences between actual energy indicators and past *AEO* Reference case projections, by calculating the average absolute differences and the average absolute percent differences for several of the major variables for *AEO1994* through *AEO2013*². The average absolute percent difference is the simple mean of the absolute values of the percentage difference between the Reference case projection and the actual value. The historical data are primarily from the *Monthly Energy Review (MER)*³. This edition includes tables for prices in constant dollars in addition to nominal-dollar tables. Projections for consumption concepts depend on real prices, so constant-dollar price comparisons give a clearer picture of the linkage between consumption projection differences and price projection differences.

The annual projection process begins with the development of assumptions for two key drivers—the world oil price and the macroeconomic growth baseline—that are determined exogenously to the National Energy Modeling System (NEMS) used to prepare the *AEO*. While the integrated nature of NEMS results in some dynamic feedback that slightly modifies the initial assumptions about the world oil price and the macroeconomic growth baseline, these feedbacks tend to be relatively small, so the initial assumptions for these drivers largely determine the overall projection environment. To the extent that

¹ Each Annual Energy Outlook includes a variety of other cases with different assumptions – for AEO2013, 26 alternative cases exploring different assumptions and different policies were presented in addition to the Reference case.

² The National Energy Modeling System (NEMS) has been used to prepare the *Annual Energy Outlook* since *AEO1994*, and this publication covers only these *AEOs*. The *AEO2009* results are from “An Updated *Annual Energy Outlook 2009* Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook” (passed after the official publication of the *AEO2009*). This version is only available on the EIA website at: <http://www.eia.gov/oiarf/servicecpt/stimulus/index.html>. Finally, projections from *AEOs* for 1994 and 1995 ended in 2010, so beyond 2010, entries for these two publications are now blank in Tables 2 through 22.

³ GDP and the GDP price deflators historical data are from the U.S. Department of Commerce, Bureau of Economic Analysis.

the initial assumptions used to drive the NEMS projections deviate from the realized environment, the NEMS projection results for energy markets will also generally deviate from realized energy outcomes.

Table 1 provides a summary of 25 comparisons based on 21 primary concepts (four concepts are energy price projections presented in both real-dollar and nominal-dollar valuations). The detailed results that underlie Table 1 are presented in Tables 2 through 22. These tables show the Reference case projections, historical values and percent differences between projected and actual for all years available. They also provide the average absolute difference across all AEOs for each year of history. The tabulated results can change from one year's evaluation to the next due to data revisions for prior years that can occur in the *Monthly Energy Review (MER)*, and, occasionally, in gross domestic product (GDP).

The first column in Table 1 is the simple average of the absolute value of percent differences for each concept across all AEOs since the 1994 edition and across all available historical years. In general, energy consumption quantities tend to be more stable and thus projected with greater accuracy than the relatively volatile concepts of net imports and energy prices. This is because energy consumption trends reflect underlying sources of inertia in the energy-consuming capital stock, substantial lead times for capital purchase decisions, locked-in contract periods, and consumer perceptions of and responses to price changes. The average absolute percent differences for energy consumption, production, and carbon dioxide emissions range roughly between 5 and 11 percent. The absolute percent differences for energy prices range between 10 and 37 percent. Net imports tend to exhibit even larger average absolute differences, ranging between 18 and 41 percent.

The second column of Table 1 provides a summary of the percentage of cases in which a particular concept is overestimated relative to its actual value out of the total number of annual projections made for which actual values are available across all AEOs since the 1994 edition. A zero would represent a concept that was always underestimated and 100 percent would represent a concept always overestimated. In an "unbiased" projection, one would expect the percentage of overestimates to be close to 50 percent when the sample size is large enough.

The underlying reasons for deviations between the AEO Reference case projections and actual outcomes are numerous and varied. Changes in economic, market, and technological trends and in policies affecting energy choices are often important drivers of these deviations. EIA monitors these developments and uses the best available data to continuously update NEMS and the AEO projections. EIA makes extensive use of scenarios in the AEO to explore the implications of major breaks from historical trends. Even though the precise timing and magnitude of a change in trend cannot be predicted, the likelihood that there will be some changes in trend is virtually certain, and the impact of such changes is estimated using the AEO scenarios. Thus, the full range of potential outcomes cannot be evaluated with the AEO Reference case alone, but only in conjunction with the relevant AEO scenarios and other analysis as applicable to a specific situation.

Table 1. Comparison of AEO Reference Case Projections with Realized Outcomes, 1994-2013

Variable	Average Absolute Percent Differences	Percent of Projections Over-Estimated
Gross Domestic Product		
Real Gross Domestic Product (Average Cumulative Growth)* (Table 2)	0.9	46.1
Petroleum		
Imported Refiner Acquisition Cost of Crude Oil (Constant \$) (Table 3a)	36.6	18.0
Imported Refiner Acquisition Cost of Crude Oil (Nominal \$) (Table 3b)	35.9	18.9
Total Petroleum Consumption (Table 4)	7.1	68.9
Crude Oil Production (Table 5)	6.7	55.3
Petroleum Net Imports (Table 6)	18.0	71.4
Natural Gas		
Natural Gas Wellhead Prices (Constant \$) (Table 7a)	33.6	32.5
Natural Gas Wellhead Prices (Nominal \$) (Table 7b)	33.0	33.5
Total Natural Gas Consumption (Table 8)	7.9	68.4
Natural Gas Production (Table 9)	7.3	63.6
Natural Gas Net Imports (Table 10)	41.0	72.3
Coal		
Coal Prices to Electric Generating Plants (Constant \$)** (Table 11a)	19.4	37.9
Coal Prices to Electric Generating Plants (Nominal \$)** (Table 11b)	21.1	41.3
Total Coal Consumption (Table 12)	9.4	63.6
Coal Production (Table 13)	6.6	66.5
Electricity		
Average Electricity Prices (Constant \$) (Table 14a)	10.0	35.9
Average Electricity Prices (Nominal \$) (Table 14b)	12.4	40.8
Total Electricity Sales (Table 15)	4.5	50.5
Total Energy, Carbon and Intensity		
Total Energy Consumption (Table 16)	6.3	80.6
Delivered Residential Energy Consumption (Table 17)	5.1	71.8
Delivered Commercial Energy Consumption (Table 18)	6.4	48.1
Delivered Industrial Energy Consumption (Table 19)	11.1	87.9
Delivered Transportation Energy Consumption (Table 20)	7.2	80.1
Total Energy Related Carbon Dioxide Emissions (Table 21)	7.5	65.0
Energy Intensity (Energy Consumption / Real \$ GDP) (Table 22)	10.1	94.2

AEO - Annual Energy Outlook

Source: These statistics summarize the calculations in Tables 2 through 22. The data in Tables 2 through 22 are based on the 1994 through 2013 AEO Reference case projections. Historical data are taken from the *Monthly Energy Review August 27, 2013*, DOE/EIA-0035(2013/08) (Washington, DC, August 2013), except for GDP data which are from the Bureau of Economic Analysis, U.S. Dept. of Commerce, July 2013, <http://www.bea.gov/national/xls/gdplev.xls>.

* The basis for GDP comparison is the projection differences in the cumulative average growth rate of real GDP from the first year shown for each AEO. The summary information for projection differences given for GDP growth rates is absolute percentage point differences; for all other AEO concepts, the comparison basis is absolute percent differences.

** Beginning in AEO2003, EIA electric generating projections incorporated combined heat and power (CHP) electricity generation in electricity generating plants. Prior to AEO2003, coal price projections reflected data collected, estimated, and reported to electric utilities and excluded CHP power generation.

Some notable factors contributing to deviations between actual outcomes and *AEO* projections are:

- Macroeconomic factors play a very important role in determining energy usage. The financial crisis and resulting economic weakness starting in 2007 was not anticipated in *AEO* modeling as NEMS does not project future business cycles. *AEO2001* through *AEO2009* over-projected macroeconomic growth (Table 2). Earlier *AEOs* systematically underestimated cumulative growth, even through 2007-2009, due in part to the robust 3.9% average growth in real GDP from 1993 through 2000. Post-2000 real GDP growth has decreased to an average of 1.6%, and *AEOs* produced during this period have tended to over-project, even before the impacts of the latest recession. In general, the *AEO* tends to lag behind macroeconomic trends as a result of an analytic framework which returns economic factors to long-run trends, rather than attempting to predict business cycles or other economic phenomena.
- The imported refiner acquisition cost of crude oil in 2012 remained over \$100 per barrel, down slightly from its peak in 2011 (Tables 3a, 3b). Many of the *AEOs* prior to *AEO2006* projected nominal prices less than \$30 per barrel. Underestimation of crude oil prices since 2000, and higher vehicle efficiency standards that were not included in the Reference Case assumptions, contributed to overestimation of petroleum consumption. This coupled with the effects of the 2007-2009 recession has generally resulted in overestimates of petroleum consumption for the years 2008 through 2012 (Table 4).
- Petroleum net imports peaked in 2005, falling successively in each year since. Before *AEO2006*, with few exceptions, *AEOs* had projected rising net imports for this period. From *AEO2006* on, projections for net imports have included years of decline (Table 6). This effect was caused primarily by the economic situation, with a lesser contribution from increasing vehicle fuel efficiency. More recently, rising domestic oil production has also played an important roll. Going forward, the phased increase in light-duty vehicle fuel economy standards through 2025 will continue to reduce projected petroleum consumption.
- Natural gas production has increased each year after 2005 after a long period of relatively flat production, and achieved a record high level in 2012 (Table 9). Natural gas net imports peaked in 2007, falling successively in each year since, with 2012 at the lowest level shown (Table 10). *AEOs* since *AEO2006* have tended to underestimate production growth and consequently overestimate net imports.
- Prior to 2009, the fuel with the largest absolute percent difference between the projections and historical consumption has generally been natural gas. This can be partially traced to the performance of natural gas price projections. In earlier projections, the natural gas price was influenced by the changes in the world oil price, but this relationship has decoupled since 2000. Through *AEO2005*, the Reference case has generally overestimated natural gas consumption (Table 8), in part due to the tendency for significant underestimates of the natural gas wellhead price (Tables 7a, 7b). In addition, industrial natural gas usage is highly sensitive to business cycles, leading to greater volatility in overall natural gas consumption.
- Coal prices to electric generating plants have been increasing since 2000 and set a new high in 2012 (Tables 11a, 11b). This coupled with the continued increases in natural gas production and low and declining natural gas prices, has resulted in consumption for 2012 falling to its lowest level shown (Table 12).

- Electricity prices were almost always underestimated in the Reference case projections from *AEO2000* on (Tables 14a, 14b). In deregulated markets, natural gas tends to determine marginal electricity prices, and with part of the United States remaining regulated, this presents a complex pricing environment for a national projection; but overall, the underestimation of natural gas and coal prices noted above also results in underestimated electricity prices.
- Total energy consumption fell from 2011 and is lower in 2012 than it was in 1999. Nearly all AEOs projected rising consumption over the historical period, with *AEO2008*, *AEO2009* and *AEO2011* being exceptions. This is the result of earlier AEOs not anticipating the strong effects of the recent recession as well as underestimation of reductions in the energy intensity of the economy, as discussed below. Projection differences tend to be relatively small; however, some pattern of overestimation is evident (Tables 16 to 20).
- Projected energy intensity has been the concept most often overestimated (Table 22). Energy intensity for the retrospective comparisons is defined as the ratio of two other projected concepts: total energy consumption and real GDP. As a ratio, the projection differences are dependent upon relative differences in energy consumption and real GDP. The overestimates of energy intensity are the result of two “reinforcing” features of past projections. During the period through *AEO2000*, GDP tended to be underestimated, which imparts a tendency to overestimate energy intensity. Post-*AEO2000*, energy consumption has tended to be overestimated, once again imparting a tendency to overestimate intensity. The combination of these two occurrences has resulted in energy intensity being overestimated for nearly all years.

Appendix (Tables 2 through 22)

Table 2 through 22

NOTE: Shading in the following tables indicates the degree of overestimation (blue shades) or underestimation (green shades).

Table 2. Real Gross Domestic Product Growth Trends, Projected vs. Actual (Continued)

Historical Real GDP Growth Trend

cumulative average percent growth in historical real GDP from first year shown for each AEO

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	2.85	3.46	3.14	3.29	3.52	3.66	3.83	3.87	3.55	3.38	3.30	3.32	3.30	3.25	3.16	2.94	2.58	2.57	2.53	2.51
AEO 1995		4.07	3.29	3.44	3.69	3.83	3.99	4.01	3.64	3.44	3.35	3.36	3.33	3.28	3.18	2.94	2.56	2.55	2.51	2.49
AEO 1996			2.51	3.13	3.57	3.76	3.98	4.00	3.58	3.36	3.27	3.29	3.27	3.22	3.12	2.86	2.46	2.45	2.42	2.40
AEO 1997				3.74	4.10	4.18	4.34	4.30	3.76	3.48	3.36	3.37	3.34	3.28	3.17	2.89	2.45	2.45	2.41	2.40
AEO 1998					4.46	4.41	4.55	4.44	3.76	3.43	3.31	3.33	3.30	3.23	3.11	2.82	2.36	2.36	2.32	2.31
AEO 1999						4.36	4.59	4.44	3.59	3.23	3.12	3.17	3.15	3.10	2.98	2.67	2.18	2.20	2.17	2.17
AEO 2000							4.83	4.48	3.34	2.95	2.87	2.97	2.98	2.94	2.83	2.51	1.99	2.02	2.00	2.02
AEO 2001								4.14	2.60	2.34	2.39	2.60	2.68	2.68	2.58	2.25	1.71	1.77	1.77	1.81
AEO 2002									1.08	1.45	1.81	2.22	2.39	2.44	2.36	2.02	1.44	1.54	1.56	1.61
AEO 2003										1.81	2.18	2.61	2.72	2.71	2.58	2.15	1.49	1.59	1.61	1.66
AEO 2004											2.54	3.00	3.03	2.93	2.73	2.21	1.44	1.56	1.59	1.65
AEO 2005												3.47	3.27	3.07	2.78	2.15	1.26	1.42	1.47	1.55
AEO 2006													3.07	2.86	2.55	1.82	0.82	1.08	1.18	1.31
AEO 2007														2.66	2.28	1.40	0.27	0.69	0.87	1.06
AEO 2008															1.91	0.78	-0.52	0.20	0.52	0.80
AEO 2009																-0.34	-1.71	-0.36	0.18	0.58
AEO 2010																	-3.07	-0.38	0.35	0.81
AEO 2011																		2.39	2.10	2.14
AEO 2012																			1.81	2.01
AEO 2013																				2.21
Growth Rate, Real GDP*	2.85	4.07	2.51	3.74	4.46	4.36	4.83	4.14	1.08	1.81	2.54	3.47	3.07	2.66	1.91	-0.34	-3.07	2.39	1.81	2.21

* These are historical annual growth rates in real GDP (2005 chained dollars). The annual changes are compounded and averaged in the table above beginning with the first year for each AEO.

Table 3a. Imported Refiner Acquisition Cost of Crude Oil, Projected vs. Actual

Projected Price in Constant Dollars

constant dollars per barrel in "dollar year" specific to each AEO

AEO Dollar Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	1992	16.69	16.43	16.99	17.66	18.28	19.06	19.89	20.72	21.65	22.61	23.51	24.29	24.90	25.60	26.30	27.00	27.64	28.16		
AEO 1995	1993		14.90	16.41	16.90	17.45	18.00	18.53	19.13	19.65	20.16	20.63	21.08	21.50	21.98	22.44	22.94	23.50	24.12		
AEO 1996	1994			16.81	16.98	17.37	17.98	18.61	19.27	19.92	20.47	20.97	21.41	21.86	22.25	22.61	22.97	23.34	23.70	24.08	24.45
AEO 1997	1995				19.52	18.54	18.21	18.22	18.20	18.64	18.99	19.28	19.50	19.72	19.89	20.03	20.16	20.29	20.41	20.54	20.68
AEO 1998	1996					18.16	17.99	18.57	19.11	19.36	19.51	19.79	19.99	20.19	20.22	20.37	20.52	20.66	20.81	20.95	21.10
AEO 1999	1997						12.37	13.25	13.97	15.21	16.24	17.47	18.40	19.25	20.15	20.90	21.04	21.17	21.30	21.43	21.57
AEO 2000	1998							17.13	21.19	20.06	20.28	20.39	20.49	20.59	20.70	20.79	20.90	21.00	21.10	21.21	
AEO 2001	1999								27.59	23.81	21.44	20.56	20.74	20.83	20.94	21.05	21.14	21.26	21.37	21.47	21.57
AEO 2002	2000									22.48	21.11	22.39	22.59	22.73	22.85	22.99	23.11	23.24	23.36	23.49	23.62
AEO 2003	2001										23.33	25.83	24.05	23.27	23.43	23.57	23.71	23.85	23.99	24.14	24.28
AEO 2004	2002											27.25	23.84	23.30	23.47	23.65	23.83	24.00	24.17	24.37	24.53
AEO 2005	2003												35.00	33.99	30.00	27.35	26.15	25.30	25.00	25.35	25.69
AEO 2006	2004													49.70	53.95	51.46	48.98	46.49	43.99	43.78	43.59
AEO 2007	2005														61.75	59.49	57.23	54.21	51.20	48.48	46.22
AEO 2008	2006															62.10	72.77	68.32	65.18	62.67	60.06
AEO 2009	2007																96.46	38.75	48.99	61.99	72.15
AEO 2010	2008																	56.49	67.40	66.63	72.94
AEO 2011	2009																		74.86	80.32	80.65
AEO 2012	2010																			99.99	99.08
AEO 2013	2011																				101.31
Actual in Nominal\$		16.14	15.51	17.14	20.64	18.53	12.04	17.26	27.70	22.00	23.71	27.71	35.90	48.86	59.02	67.04	92.77	59.17	75.86	102.63	101.09
Average Absolute Difference		0.90	0.93	0.32	1.87	0.53	5.92	2.58	5.85	1.77	1.68	3.40	9.01	17.69	22.80	25.97	42.70	18.62	27.59	44.73	44.77

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	5.7	10.6	5.6	-7.1	9.0	76.9	30.6	-13.4	16.6	14.8	4.3	-14.5	-33.5	-41.5	-45.6	-58.7	-33.2	-46.2		
AEO 1995		-1.9	-0.2	-13.0	1.8	63.4	19.1	-21.7	3.5	0.1	-10.5	-27.4	-43.8	-50.9	-54.6	-65.7	-44.4	-54.9		
AEO 1996			0.1	-14.4	-0.7	59.9	17.1	-22.8	2.8	-0.4	-10.9	-27.8	-44.0	-51.3	-55.2	-66.4	-46.0	-56.6	-66.7	-65.1
AEO 1997				-3.6	3.8	58.6	12.4	-28.6	-5.8	-9.5	-19.7	-35.6	-50.5	-57.4	-61.1	-71.1	-54.0	-63.4	-72.2	-71.1
AEO 1998					-0.3	53.8	12.4	-26.4	-4.0	-8.8	-19.2	-35.2	-50.3	-57.5	-61.2	-71.1	-54.0	-63.4	-72.2	-71.0
AEO 1999						3.9	-21.2	-47.1	-25.9	-25.4	-29.9	-41.4	-53.5	-58.4	-60.9	-70.9	-53.7	-63.2	-72.0	-70.9
AEO 2000							0.7	-20.7	-3.3	-8.3	-19.5	-35.8	-51.0	-57.9	-61.7	-71.6	-54.8	-64.1	-72.8	-71.7
AEO 2001								1.8	13.1	-4.0	-19.6	-35.6	-50.9	-57.8	-61.6	-71.5	-54.7	-64.0	-72.7	-71.6
AEO 2002									4.5	-7.5	-14.3	-31.3	-47.6	-55.0	-58.9	-69.5	-51.5	-61.5	-70.8	-69.6
AEO 2003										0.0	-3.3	-28.5	-47.5	-54.8	-58.8	-69.4	-51.3	-61.3	-70.6	-69.5
AEO 2004											0.4	-30.3	-48.3	-55.5	-59.4	-69.8	-51.8	-61.6	-70.8	-69.6
AEO 2005												0.2	-26.1	-44.3	-54.0	-67.5	-50.3	-61.1	-70.3	-68.8
AEO 2006													5.1	-2.5	-15.8	-40.8	-11.1	-33.5	-50.0	-48.6
AEO 2007														8.0	-5.7	-33.0	0.4	-25.1	-46.5	-47.2
AEO 2008															-4.7	-17.5	22.5	-7.6	-32.9	-33.6
AEO 2009																6.3	-32.5	-32.5	-35.5	-22.5
AEO 2010																	-3.7	-9.2	-32.2	-23.3
AEO 2011																		0.0	-19.0	-15.9
AEO 2012																			-0.5	1.9
AEO 2013																				2.0
Average Absolute Percent Difference	5.7	6.2	2.0	9.5	3.1	52.7	16.2	22.8	8.8	7.9	13.8	28.6	42.5	46.6	47.9	57.5	39.4	46.1	54.6	52.5

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions, "Imported Crude Oil Price" (average imported refiners' acquisition cost for crude oil, "IRAC").

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.1. Bureau of Economic Analysis, US Dept. of Commerce, July 2013.

Table 3b. Imported Refiner Acquisition Cost of Crude Oil, Projected vs. Actual

Projected Price in Nominal Dollars

	nominal dollars per barrel																			
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	17.06	17.21	18.24	19.43	20.64	22.12	23.76	25.52	27.51	29.67	31.86	34.00	36.05	38.36	40.78	43.29	45.88	48.37		
AEO 1995		15.24	17.27	18.23	19.26	20.39	21.59	22.97	24.33	25.79	27.27	28.82	30.38	32.14	33.89	35.85	37.97	40.28		
AEO 1996			17.16	17.74	18.59	19.72	20.97	22.34	23.81	25.26	26.72	28.22	29.87	31.51	33.13	34.82	36.61	38.48	40.48	42.55
AEO 1997				19.99	19.42	19.55	20.07	20.59	21.68	22.71	23.75	24.78	25.87	26.94	28.06	29.19	30.38	31.60	32.94	34.32
AEO 1998					18.54	18.79	19.87	20.95	21.79	22.53	23.46	24.34	25.27	26.04	27.00	28.02	29.09	30.22	31.43	32.72
AEO 1999						12.50	13.64	14.67	16.35	17.87	19.64	21.14	22.59	24.20	25.72	26.54	27.42	28.38	29.41	30.52
AEO 2000							17.35	21.80	20.99	21.52	22.05	22.62	23.23	23.85	24.51	25.17	25.85	26.52	27.22	27.93
AEO 2001								28.21	24.86	22.82	22.36	23.04	23.65	24.25	24.85	25.43	26.05	26.66	27.28	27.93
AEO 2002									22.99	21.99	24.00	24.86	25.66	26.50	27.36	28.18	29.03	29.89	30.79	31.80
AEO 2003										23.65	26.92	25.70	25.40	26.10	26.75	27.39	28.07	28.79	29.61	30.51
AEO 2004											27.65	24.54	24.45	25.14	25.87	26.65	27.50	28.40	29.42	30.45
AEO 2005												35.74	35.40	31.78	29.52	28.78	28.43	28.73	29.84	31.01
AEO 2006													50.97	56.42	54.75	53.19	51.54	49.79	50.73	51.79
AEO 2007														63.64	62.68	61.40	59.20	56.89	54.85	53.24
AEO 2008															63.72	75.98	72.58	70.43	68.90	67.16
AEO 2009																98.58	39.99	50.84	65.08	76.70
AEO 2010																	57.35	69.43	69.54	77.21
AEO 2011																		75.52	82.10	83.37
AEO 2012																			102.10	102.50
AEO 2013																				103.10
Actual in Nominal\$	16.14	15.51	17.14	20.64	18.53	12.04	17.26	27.70	22.00	23.71	27.71	35.90	48.86	59.02	67.04	92.77	59.17	75.86	102.63	101.09
Average Absolute Difference	0.92	0.98	0.42	1.79	0.76	6.81	3.38	5.70	2.30	2.25	3.40	9.42	20.05	27.05	31.80	52.97	22.34	33.68	55.47	49.54

Projected vs. Actual

	percent difference																			
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	5.7	10.9	6.4	-5.9	11.4	83.7	37.7	-7.9	25.0	25.1	15.0	-5.3	-26.2	-35.0	-39.2	-53.3	-22.5	-36.2		
AEO 1995		-1.8	0.8	-11.7	4.0	69.4	25.1	-17.1	10.6	8.8	-1.6	-19.7	-37.8	-45.5	-49.4	-61.4	-35.8	-46.9		
AEO 1996			0.1	-14.0	0.3	63.8	21.5	-19.3	8.2	6.5	-3.6	-21.4	-38.9	-46.6	-50.6	-62.5	-38.1	-49.3	-60.6	-57.9
AEO 1997				-3.1	4.8	62.4	16.3	-25.7	-1.5	-4.2	-14.3	-31.0	-47.1	-54.3	-58.1	-68.5	-48.7	-58.3	-67.9	-66.1
AEO 1998					0.0	56.1	15.1	-24.4	-1.0	-5.0	-15.3	-32.2	-48.3	-55.9	-59.7	-69.8	-50.8	-60.2	-69.4	-67.6
AEO 1999						3.8	-21.0	-47.0	-25.7	-24.6	-29.1	-41.1	-53.8	-59.0	-61.6	-71.4	-53.7	-62.6	-71.3	-69.8
AEO 2000							0.5	-21.3	-4.6	-9.2	-20.4	-37.0	-52.5	-59.6	-63.4	-72.9	-56.3	-65.0	-73.5	-72.4
AEO 2001								1.8	13.0	-3.7	-19.3	-35.8	-51.6	-58.9	-62.9	-72.6	-56.0	-64.9	-73.4	-72.4
AEO 2002									4.5	-7.3	-13.4	-30.8	-47.5	-55.1	-59.2	-69.6	-50.9	-60.6	-70.0	-68.5
AEO 2003										-0.3	-2.9	-28.4	-48.0	-55.8	-60.1	-70.5	-52.6	-62.0	-71.1	-69.8
AEO 2004											-0.2	-31.7	-50.0	-57.4	-61.4	-71.3	-53.5	-62.6	-71.3	-69.9
AEO 2005												-0.4	-27.6	-46.2	-56.0	-69.0	-52.0	-62.1	-70.9	-69.3
AEO 2006													4.3	-4.4	-18.3	-42.7	-12.9	-34.4	-50.6	-48.8
AEO 2007														7.8	-6.5	-33.8	0.1	-25.0	-46.6	-47.3
AEO 2008															-5.0	-18.1	22.7	-7.2	-32.9	-33.6
AEO 2009																6.3	-32.4	-33.0	-36.6	-24.1
AEO 2010																	-3.1	-8.5	-32.2	-23.6
AEO 2011																		-0.5	-20.0	-17.5
AEO 2012																			-0.5	1.4
AEO 2013																				2.0
Average Absolute Percent Difference	5.7	6.3	2.4	8.7	4.1	56.5	19.6	20.6	10.5	9.5	12.3	26.2	41.0	45.8	47.4	57.1	37.8	44.4	54.0	49.0

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.1.

Table 4. Total Petroleum Consumption, Projected vs. Actual

Projected																				
million barrels																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	6450	6566	6643	6723	6811	6880	6957	7059	7125	7205	7296	7377	7446	7523	7596	7665	7712	7775		
AEO 1995		6398	6544	6555	6676	6745	6822	6888	6964	7048	7147	7245	7337	7406	7472	7537	7581	7621		
AEO 1996			6490	6526	6607	6709	6782	6855	6942	7008	7085	7176	7260	7329	7384	7450	7501	7545	7581	7632
AEO 1997				6636	6694	6826	6953	7074	7183	7267	7369	7461	7548	7643	7731	7793	7833	7884	7924	7961
AEO 1998					6895	6906	7066	7161	7278	7400	7488	7597	7719	7859	7959	8074	8190	8286	8361	8455
AEO 1999						6884	7007	7269	7383	7472	7539	7620	7725	7841	7949	8069	8174	8283	8351	8422
AEO 2000							7056	7141	7266	7363	7452	7578	7694	7815	7926	8028	8113	8217	8288	8381
AEO 2001								7119	7314	7431	7528	7634	7740	7853	7963	8074	8179	8285	8385	8482
AEO 2002									7170	7243	7485	7628	7765	7879	8013	8155	8311	8472	8646	8779
AEO 2003										7143	7237	7364	7477	7634	7812	7998	8186	8390	8575	8755
AEO 2004											7259	7359	7608	7772	7916	8063	8168	8290	8433	8602
AEO 2005												7484	7630	7775	7928	8097	8268	8389	8510	8625
AEO 2006													7601	7723	7742	7842	7956	8094	8220	8329
AEO 2007														7546	7644	7721	7805	7880	7991	8077
AEO 2008															7540	7628	7558	7660	7737	7796
AEO 2009																7071	6851	7229	7333	7380
AEO 2010																	6830	7026	7214	7312
AEO 2011																		6926	6973	7293
AEO 2012																			6909	6951
AEO 2013																				6806
Actual	6291	6467	6469	6701	6796	6905	7125	7211	7172	7213	7312	7588	7593	7551	7548	7136	6852	7001	6917	6791
Average Absolute Difference	158	84	90	102	105	80	176	154	117	135	139	149	126	192	257	701	987	910	1051	1211

Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	2.5	1.5	2.7	0.3	0.2	-0.4	-2.4	-2.1	-0.7	-0.1	-0.2	-2.8	-1.9	-0.4	0.6	7.4	12.6	11.1		
AEO 1995		-1.1	1.2	-2.2	-1.8	-2.3	-4.2	-4.5	-2.9	-2.3	-2.3	-4.5	-3.4	-1.9	-1.0	5.6	10.6	8.9		
AEO 1996			0.3	-2.6	-2.8	-2.8	-4.8	-4.9	-3.2	-2.8	-3.1	-5.4	-4.4	-2.9	-2.2	4.4	9.5	7.8	9.6	12.4
AEO 1997				-1.0	-1.5	-1.1	-2.4	-1.9	0.2	0.8	0.8	-1.7	-0.6	1.2	2.4	9.2	14.3	12.6	14.6	17.2
AEO 1998					1.4	0.0	-0.8	-0.7	1.5	2.6	2.4	0.1	1.7	4.1	5.4	13.1	19.5	18.4	20.9	24.5
AEO 1999						-0.3	-1.6	0.8	2.9	3.6	3.1	0.4	1.7	3.8	5.3	13.1	19.3	18.3	20.7	24.0
AEO 2000							-1.0	-1.0	1.3	2.1	1.9	-0.1	1.3	3.5	5.0	12.5	18.4	17.4	19.8	23.4
AEO 2001								-1.3	2.0	3.0	2.9	0.6	1.9	4.0	5.5	13.1	19.4	18.3	21.2	24.9
AEO 2002									0.0	0.4	2.4	0.5	2.3	4.4	6.2	14.3	21.3	21.0	25.0	29.3
AEO 2003										-1.0	-1.0	-2.9	-1.5	1.1	3.5	12.1	19.5	19.8	24.0	28.9
AEO 2004											-0.7	-3.0	0.2	2.9	4.9	13.0	19.2	18.4	21.9	26.7
AEO 2005												-1.4	0.5	3.0	5.0	13.5	20.7	19.8	23.0	27.0
AEO 2006													0.1	2.3	2.6	9.9	16.1	15.6	18.8	22.7
AEO 2007														-0.1	1.3	8.2	13.9	12.6	15.5	18.9
AEO 2008															-0.1	6.9	10.3	9.4	11.9	14.8
AEO 2009																-0.9	0.0	3.3	6.0	8.7
AEO 2010																	-0.3	0.4	4.3	7.7
AEO 2011																		-1.1	0.8	7.4
AEO 2012																			-0.1	2.4
AEO 2013																				0.2
Average Absolute Percent Difference	2.5	1.3	1.4	1.5	1.5	1.2	2.5	2.1	1.6	1.9	1.9	2.0	1.7	2.5	3.4	9.8	14.4	13.0	15.2	17.8

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 3.1.

Table 5. Domestic Crude Oil Production, Projected vs. Actual

Projected																				
million barrels																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	2508	2373	2256	2161	2088	2022	1953	1891	1851	1825	1799	1781	1767	1759	1778	1789	1807	1862		
AEO 1995		2402	2307	2205	2095	2037	1967	1953	1924	1916	1905	1894	1883	1887	1887	1920	1945	1967		
AEO 1996			2387	2310	2248	2172	2113	2062	2011	1978	1953	1938	1916	1920	1927	1949	1971	1986	2000	2018
AEO 1997				2362	2307	2245	2197	2143	2091	2055	2033	2015	2004	1997	1989	1982	1975	1967	1949	1942
AEO 1998				2340	2332	2291	2252	2220	2192	2169	2145	2125	2104	2087	2068	2050	2033	2016	1995	
AEO 1999					2340	2309	2296	2265	2207	2171	2141	2122	2114	2092	2074	2057	2040	2025	2010	
AEO 2000						2193	2181	2122	2063	2016	1980	1957	1939	1920	1904	1894	1889	1889	1890	
AEO 2001							2152	2161	2204	2193	2111	2062	1995	1957	1934	1901	1879	1848	1850	
AEO 2002								2133	2135	2074	2008	1962	1944	1943	1913	1880	1855	1842	1848	
AEO 2003									2149	2121	2065	2038	2193	2210	2170	2119	2054	2020	1990	
AEO 2004										2076	2116	2139	2166	2222	2231	2209	2166	2124	2085	
AEO 2005											2059	2124	2200	2221	2243	2257	2198	2152	2123	
AEO 2006												1944	2008	2023	2061	2133	2146	2132	2140	
AEO 2007													1861	2001	2058	2074	2068	2086	2104	
AEO 2008															1862	1876	2064	2165	2166	2168
AEO 2009																1809	1955	2015	2024	2039
AEO 2010																	1913	1936	1980	1999
AEO 2011																		2011	1993	1962
AEO 2012																			2033	2094
AEO 2013																				2312
Actual	2499	2431	2394	2366	2355	2282	2147	2131	2118	2097	2060	1989	1893	1857	1853	1830	1954	2000	2063	2376
Average Absolute Difference	9	44	78	107	139	127	116	107	101	105	94	92	131	163	165	176	103	86	87	344
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	0.3	-2.4	-5.8	-8.7	-11.3	-11.4	-9.0	-11.3	-12.6	-13.0	-12.7	-10.5	-6.7	-5.3	-4.1	-2.3	-7.5	-6.9		
AEO 1995		-1.2	-3.7	-6.8	-11.0	-10.7	-8.4	-8.4	-9.2	-8.6	-7.5	-4.8	-0.5	1.6	1.8	4.9	-0.4	-1.6		
AEO 1996			-0.3	-2.3	-4.5	-4.8	-1.6	-3.2	-5.0	-5.6	-5.2	-2.6	1.2	3.4	4.0	6.5	0.9	-0.7	-3.0	-15.0
AEO 1997				-0.2	-2.0	-1.6	2.4	0.6	-1.2	-2.0	-1.3	1.3	5.9	7.5	7.3	8.3	1.1	-1.6	-5.5	-18.3
AEO 1998					-0.6	2.2	6.7	5.7	4.8	4.5	5.3	7.8	12.2	13.3	12.6	13.0	4.9	1.6	-2.3	-16.0
AEO 1999						2.5	7.6	7.8	7.0	5.3	5.4	7.6	12.1	13.8	12.9	13.3	5.3	2.0	-1.8	-15.4
AEO 2000							2.1	2.4	0.2	-1.6	-2.2	-0.4	3.4	4.4	3.6	4.0	-3.1	-5.5	-8.4	-20.4
AEO 2001								1.0	2.1	5.1	6.5	6.1	9.0	7.4	5.6	5.7	-2.7	-6.0	-10.4	-22.1
AEO 2002									0.7	1.9	0.7	1.0	3.7	4.6	4.9	4.5	-3.8	-7.2	-10.7	-22.2
AEO 2003										2.5	3.0	3.8	7.7	18.1	19.3	18.6	8.5	2.7	-2.1	-16.3
AEO 2004											0.8	6.4	13.0	16.6	19.9	21.9	13.1	8.3	2.9	-12.2
AEO 2005												3.5	12.2	18.4	19.9	22.6	15.5	9.9	4.3	-10.7
AEO 2006													2.7	8.1	9.2	12.6	9.2	7.3	3.4	-9.9
AEO 2007														0.2	8.0	12.5	6.2	3.4	1.1	-11.4
AEO 2008															0.5	2.5	5.6	8.2	5.0	-8.8
AEO 2009																-1.2	0.0	0.8	-1.9	-14.2
AEO 2010																	-2.1	-3.2	-4.0	-15.9
AEO 2011																		0.6	-3.4	-17.4
AEO 2012																			-1.4	-11.9
AEO 2013																				-2.7
Average Absolute Percent Difference	0.3	1.8	3.2	4.5	5.9	5.6	5.4	5.0	4.8	5.0	4.6	4.6	6.9	8.8	8.9	9.6	5.3	4.3	4.2	14.5

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 3.1.

Table 6. Petroleum Net Imports, Projected vs. Actual

Projected																					
million barrels																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	2935	3201	3362	3504	3657	3738	3880	3993	4099	4212	4303	4398	4475	4541	4584	4639	4668	4672			
AEO 1995		2953	3157	3281	3489	3610	3741	3818	3920	4000	4103	4208	4303	4362	4420	4442	4460	4460			
AEO 1996			3011	3106	3219	3398	3519	3679	3807	3891	3979	4070	4165	4212	4260	4289	4303	4322	4325	4347	
AEO 1997				3099	3245	3497	3665	3825	3975	4084	4190	4285	4380	4464	4552	4617	4654	4709	4760	4803	
AEO 1998					3303	3391	3654	3713	3876	4053	4137	4298	4415	4556	4639	4750	4910	4992	5087	5221	
AEO 1999						3380	3442	3888	4022	4153	4238	4336	4441	4545	4652	4780	4888	4999	5073	5144	
AEO 2000							3599	3847	4036	4187	4320	4465	4579	4690	4780	4882	4968	5055	5113	5192	
AEO 2001								3711	3996	4028	4114	4290	4435	4607	4747	4858	4974	5083	5198	5276	
AEO 2002									3850	3992	4191	4395	4561	4653	4749	4903	5068	5211	5360	5468	
AEO 2003										3778	4052	4056	4196	4187	4337	4534	4766	5024	5228	5419	
AEO 2004											4012	4164	4207	4331	4398	4521	4641	4806	4989	5181	
AEO 2005												4255	4346	4306	4420	4555	4693	4881	5038	5173	
AEO 2006													4545	4537	4366	4397	4415	4502	4577	4643	
AEO 2007														4553	4295	4224	4229	4304	4348	4403	
AEO 2008															4416	4556	4420	4158	4187	4222	
AEO 2009																4037	3628	3688	3732	3755	
AEO 2010																	3659	3659	3783	3839	
AEO 2011																		3478	3506	3695	
AEO 2012																			3136	3215	
AEO 2013																				2775	
Actual	2780	2940	2878	3110	3343	3564	3618	3813	3979	3849	4102	4427	4580	4523	4393	4068	3528	3446	3109	2713	
Average Absolute Difference	154	137	298	145	144	135	109	80	78	203	95	165	192	127	156	498	1010	1110	1446	1830	
Projected vs. Actual																					
percent difference																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	5.5	8.9	16.8	12.7	9.4	4.9	7.2	4.7	3.0	9.4	4.9	-0.7	-2.3	0.4	4.4	14.1	32.3	35.6			
AEO 1995		0.4	9.7	5.5	4.4	1.3	3.4	0.1	-1.5	3.9	0.0	-4.9	-6.0	-3.6	0.6	9.2	26.4	29.4			
AEO 1996			4.6	-0.1	-3.7	-4.6	-2.7	-3.5	-4.3	1.1	-3.0	-8.1	-9.1	-6.9	-3.0	5.4	22.0	25.4	39.1	60.2	
AEO 1997				-0.4	-2.9	-1.9	1.3	0.3	-0.1	6.1	2.2	-3.2	-4.4	-1.3	3.6	13.5	31.9	36.6	53.1	77.1	
AEO 1998					-1.2	-4.9	1.0	-2.6	-2.6	5.3	0.9	-2.9	-3.6	0.7	5.6	16.8	39.1	44.9	63.6	92.5	
AEO 1999						-5.2	-4.9	2.0	1.1	7.9	3.3	-2.1	-3.0	0.5	5.9	17.5	38.5	45.1	63.2	89.6	
AEO 2000							-0.5	0.9	1.5	8.8	5.3	0.9	0.0	3.7	8.8	20.0	40.8	46.7	64.5	91.4	
AEO 2001								-2.7	0.4	4.6	0.3	-3.1	-3.2	1.9	8.1	19.4	41.0	47.5	67.2	94.5	
AEO 2002									-3.2	3.7	2.2	-0.7	-0.4	2.9	8.1	20.5	43.6	51.2	72.4	101.6	
AEO 2003										-1.9	-1.2	-8.4	-8.4	-7.4	-1.3	11.5	35.1	45.8	68.1	99.8	
AEO 2004											-2.2	-6.0	-8.1	-4.2	0.1	11.1	31.5	39.5	60.5	91.0	
AEO 2005												-3.9	-5.1	-4.8	0.6	12.0	33.0	41.6	62.0	90.7	
AEO 2006													-0.8	0.3	-0.6	8.1	25.1	30.7	47.2	71.1	
AEO 2007															0.7	-2.2	3.9	19.9	24.9	39.9	62.3
AEO 2008																0.5	12.0	19.6	20.7	34.7	55.6
AEO 2009																	-0.7	2.8	7.0	20.0	38.4
AEO 2010																		3.7	6.2	21.7	41.5
AEO 2011																			0.9	12.8	36.2
AEO 2012																				0.9	18.5
AEO 2013																					2.3
Average Absolute Percent Difference	5.5	4.7	10.4	4.7	4.3	3.8	3.0	2.1	2.0	5.3	2.3	3.7	4.2	2.8	3.6	12.2	28.6	32.2	46.5	67.5	

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 3.1.

Table 7a. Natural Gas Wellhead Prices, Projected vs. Actual

Projected Price in Constant Dollars

constant dollars per thousand cubic feet in "dollar year" specific to each AEO

	AEO Dollar Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	1992	1.94	2.03	2.11	2.19	2.29	2.35	2.39	2.42	2.47	2.55	2.65	2.75	2.89	3.01	3.17	3.30	3.35	3.47		
AEO 1995	1993		1.85	1.90	1.81	1.87	1.90	2.06	2.14	2.34	2.47	2.69	2.83	3.02	3.12	3.21	3.30	3.35	3.39		
AEO 1996	1994			1.60	1.67	1.74	1.82	1.87	1.89	1.91	1.93	1.94	1.96	1.99	2.00	2.02	2.06	2.10	2.15	2.22	2.29
AEO 1997	1995				1.98	1.74	1.77	1.81	1.82	1.84	1.85	1.88	1.91	1.94	1.96	1.98	1.99	2.00	2.01	2.02	2.03
AEO 1998	1996					2.25	2.10	2.11	2.11	2.12	2.12	2.12	2.13	2.15	2.17	2.21	2.24	2.27	2.31	2.32	2.34
AEO 1999	1997						1.96	2.09	2.10	2.16	2.20	2.25	2.29	2.35	2.42	2.45	2.47	2.49	2.52	2.53	2.54
AEO 2000	1998							2.12	2.17	2.17	2.17	2.17	2.20	2.26	2.34	2.43	2.51	2.56	2.58	2.60	2.65
AEO 2001	1999								3.32	3.34	2.79	2.52	2.43	2.49	2.55	2.59	2.63	2.66	2.69	2.71	2.73
AEO 2002	2000									3.94	1.98	2.37	2.58	2.66	2.70	2.71	2.79	2.81	2.85	2.91	2.97
AEO 2003	2001										2.75	3.13	2.92	2.88	2.82	2.91	3.03	3.15	3.29	3.36	3.43
AEO 2004	2002											4.90	3.88	3.54	3.48	3.53	3.64	3.47	3.40	3.56	3.75
AEO 2005	2003												5.27	5.30	4.67	4.23	3.85	3.75	3.64	3.64	3.74
AEO 2006	2004													7.62	6.85	6.13	5.78	5.34	5.03	4.78	4.72
AEO 2007	2005														6.67	6.65	6.59	6.05	5.76	5.33	5.17
AEO 2008	2006															6.21	6.58	6.75	6.33	6.02	5.84
AEO 2009	2007																7.88	3.99	4.64	4.98	5.09
AEO 2010	2008																	3.33	4.05	5.16	5.61
AEO 2011	2009																		4.08	4.09	4.09
AEO 2012	2010																			3.81	3.40
AEO 2013	2011																				2.62
Actual in Nominal\$		2.04	1.85	1.55	2.17	2.32	1.96	2.19	3.68	4.00	2.95	4.88	5.46	7.33	6.39	6.25	7.97	3.67	4.48	3.95	2.66
Average Absolute Difference		0.06	0.15	0.38	0.25	0.29	0.17	0.15	1.16	1.18	0.42	1.79	2.04	3.22	2.24	1.86	2.77	0.84	0.79	0.75	1.56

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	-2.8	14.5	45.0	9.6	9.1	34.0	23.7	-23.8	-26.9	4.0	-33.3	-36.4	-48.5	-36.5	-29.7	-41.3	30.5	12.2			
AEO 1995		2.1	27.7	-11.4	-12.9	6.0	4.3	-34.1	-32.2	-1.4	-33.7	-35.9	-47.4	-35.6	-30.3	-42.6	27.7	7.3			
AEO 1996			5.2	-20.2	-20.5	-0.8	-7.4	-42.9	-45.7	-24.6	-53.1	-56.4	-65.1	-59.5	-57.0	-65.0	-21.6	-33.5	-20.4	24.5	
AEO 1997				-6.8	-22.2	-5.1	-12.3	-46.1	-49.0	-29.1	-55.5	-58.5	-67.6	-61.2	-58.9	-66.8	-26.7	-39.0	-29.0	8.1	
AEO 1998					-1.3	10.5	0.6	-38.9	-42.3	-20.5	-50.8	-54.6	-64.8	-57.8	-54.9	-63.2	-18.4	-31.3	-19.9	22.1	
AEO 1999						0.9	-2.2	-40.2	-42.2	-18.6	-48.7	-52.0	-62.1	-53.9	-50.7	-60.2	-12.0	-26.4	-14.1	30.3	
AEO 2000							-1.8	-38.8	-42.5	-20.7	-50.3	-53.1	-62.6	-54.1	-50.2	-59.2	-9.9	-24.7	-11.9	34.4	
AEO 2001								-7.9	-12.9	0.5	-44.1	-50.4	-60.8	-52.6	-49.3	-58.7	-8.7	-23.4	-10.6	36.2	
AEO 2002									0.7	-30.3	-48.6	-48.4	-59.0	-50.9	-48.0	-57.2	-5.3	-20.3	-5.8	45.2	
AEO 2003										-5.3	-33.5	-42.9	-56.7	-49.7	-45.4	-54.4	3.5	-10.1	6.3	63.9	
AEO 2004											2.5	-25.4	-47.6	-39.0	-34.9	-46.2	12.2	-8.7	10.9	76.5	
AEO 2005												-0.7	-23.2	-19.8	-23.5	-44.3	18.8	-4.2	11.0	72.1	
AEO 2006													7.3	14.3	7.7	-18.7	64.8	28.7	41.8	111.6	
AEO 2007														7.7	13.0	-10.2	80.7	42.6	53.0	124.3	
AEO 2008															2.2	-13.2	95.3	52.0	67.2	145.2	
AEO 2009																1.1	12.1	8.2	34.5	107.9	
AEO 2010																	-8.5	-7.6	36.5	124.0	
AEO 2011																		-7.7	7.3	61.9	
AEO 2012																				-1.5	33.0
AEO 2013																					0.2
Average Absolute Percent Difference		2.8	8.3	26.0	12.0	13.2	9.5	7.5	34.1	32.7	15.5	41.3	42.9	51.8	42.3	37.0	43.9	26.9	21.5	22.4	66.0

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.10. Bureau of Economic Analysis, US Dept. of Commerce, July 2013.

Table 7b. Natural Gas Wellhead Prices, Projected vs. Actual

Projected Price in Nominal Dollars

nominal dollars per thousand cubic feet

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	1.98	2.12	2.27	2.41	2.59	2.73	2.85	2.98	3.14	3.35	3.59	3.85	4.18	4.51	4.92	5.29	5.56	5.96		
AEQ 1995		1.89	2.00	1.95	2.06	2.15	2.40	2.57	2.90	3.16	3.56	3.87	4.27	4.56	4.85	5.16	5.41	5.66		
AEQ 1996			1.63	1.74	1.86	1.99	2.10	2.19	2.29	2.38	2.48	2.59	2.72	2.84	2.97	3.12	3.29	3.49	3.73	3.99
AEQ 1997				2.03	1.82	1.90	1.99	2.06	2.13	2.21	2.32	2.43	2.54	2.65	2.77	2.88	3.00	3.11	3.24	3.38
AEQ 1998					2.30	2.20	2.26	2.31	2.38	2.44	2.52	2.60	2.69	2.79	2.93	3.06	3.20	3.35	3.48	3.63
AEQ 1999						1.98	2.15	2.20	2.32	2.43	2.53	2.63	2.76	2.90	3.02	3.12	3.23	3.35	3.47	3.60
AEQ 2000							2.15	2.23	2.27	2.32	2.40	2.51	2.66	2.81	2.97	3.10	3.20	3.29	3.39	3.49
AEQ 2001								3.39	3.48	2.97	2.74	2.70	2.83	2.95	3.06	3.17	3.25	3.35	3.44	3.53
AEQ 2002									4.03	2.06	2.53	2.84	3.01	3.13	3.23	3.40	3.52	3.65	3.82	4.00
AEQ 2003										2.79	3.26	3.13	3.15	3.15	3.30	3.51	3.70	3.95	4.12	4.31
AEQ 2004											4.97	4.00	3.72	3.73	3.86	4.07	3.97	3.99	4.30	4.66
AEQ 2005												5.38	5.52	4.95	4.57	4.23	4.21	4.18	4.29	4.51
AEQ 2006													7.81	7.16	6.53	6.27	5.92	5.69	5.54	5.61
AEQ 2007														6.87	7.00	7.07	6.61	6.40	6.03	5.96
AEQ 2008															6.37	6.87	7.17	6.85	6.61	6.53
AEQ 2009																8.06	4.12	4.81	5.23	5.41
AEQ 2010																	3.38	4.17	5.39	5.94
AEQ 2011																		4.12	4.19	4.23
AEQ 2012																			3.89	3.52
AEQ 2013																				2.66
Actual in Nominal\$	2.04	1.85	1.55	2.17	2.32	1.96	2.19	3.68	4.00	2.95	4.88	5.46	7.33	6.39	6.25	7.97	3.67	4.48	3.95	2.66
Average Absolute Difference	0.06	0.16	0.41	0.26	0.30	0.22	0.19	1.19	1.24	0.47	1.91	2.25	3.72	2.64	2.25	3.46	1.00	1.01	0.78	1.73

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	-2.8	14.9	46.2	11.0	11.5	39.2	30.4	-19.0	-21.5	13.4	-26.4	-29.5	-42.9	-29.4	-21.4	-33.6	51.5	33.0		
AEQ 1995		2.3	28.9	-10.0	-11.0	9.8	9.6	-30.2	-27.6	7.1	-27.1	-29.1	-41.8	-28.6	-22.4	-35.3	47.5	26.4		
AEQ 1996			5.2	-19.8	-19.7	1.6	-3.9	-40.4	-42.8	-19.4	-49.3	-52.6	-62.9	-55.6	-52.5	-60.9	-10.2	-22.2	-5.6	50.0
AEQ 1997				-6.3	-21.4	-2.8	-9.2	-43.9	-46.6	-25.0	-52.5	-55.5	-65.3	-58.5	-55.7	-63.9	-18.3	-30.6	-18.0	26.9
AEQ 1998					-1.0	12.1	3.0	-37.2	-40.5	-17.1	-48.4	-52.5	-63.3	-56.3	-53.2	-61.6	-12.7	-25.2	-11.8	36.5
AEQ 1999						0.9	-1.9	-40.1	-42.1	-17.8	-48.1	-51.8	-62.4	-54.6	-51.7	-60.8	-11.9	-25.2	-12.0	35.2
AEQ 2000							-2.0	-39.3	-43.3	-21.4	-50.9	-54.0	-63.7	-56.0	-52.5	-61.1	-12.9	-26.6	-14.2	31.2
AEQ 2001								-7.8	-12.9	0.8	-43.9	-50.5	-61.4	-53.9	-51.0	-60.2	-11.3	-25.2	-13.0	32.6
AEQ 2002									0.6	-30.1	-48.1	-47.9	-59.0	-51.0	-48.3	-57.4	-4.2	-18.5	-3.4	50.3
AEQ 2003										-5.6	-33.2	-42.8	-57.1	-50.8	-47.1	-56.0	0.9	-11.8	4.3	61.9
AEQ 2004											1.9	-26.8	-49.3	-41.7	-38.2	-48.9	8.2	-10.9	8.9	75.0
AEQ 2005												-1.4	-24.7	-22.6	-26.9	-46.9	14.8	-6.7	8.5	69.5
AEQ 2006													6.5	12.1	4.4	-21.3	61.4	27.0	40.3	110.9
AEQ 2007														7.5	12.1	-11.3	80.2	42.8	52.7	123.9
AEQ 2008															1.9	-13.8	95.5	52.8	67.4	145.3
AEQ 2009																1.1	12.2	7.5	32.3	103.5
AEQ 2010																	-7.9	-6.9	36.4	123.1
AEQ 2011																		-8.1	6.0	58.8
AEQ 2012																			-1.5	32.3
AEQ 2013																				0.2
Average Absolute Percent Difference	2.8	8.6	26.8	11.8	12.9	11.1	8.6	32.2	30.9	15.8	39.1	41.2	50.8	41.3	36.0	43.4	27.2	22.6	19.8	64.9

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.10.

Table 8. Total Natural Gas Consumption, Projected vs. Actual

Projected																				
trillion cubic feet																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	19.87	20.21	20.64	20.99	21.20	21.42	21.60	21.99	22.37	22.63	22.95	23.22	23.58	23.82	24.09	24.13	24.02	24.14		
AEO 1995		20.82	20.66	20.85	21.21	21.65	21.95	22.12	22.25	22.43	22.62	22.87	23.08	23.36	23.61	24.08	24.23	24.59		
AEO 1996			21.32	21.64	22.11	22.21	22.26	22.34	22.46	22.74	23.14	23.63	24.08	24.25	24.63	25.11	25.56	26.00	26.63	27.21
AEO 1997				22.15	22.75	23.24	23.64	23.86	24.13	24.65	25.34	25.82	26.22	26.52	27.00	27.35	27.70	28.01	28.47	28.90
AEO 1998					21.84	23.03	23.84	24.08	24.44	24.81	25.33	25.72	26.22	26.65	27.22	27.84	28.35	28.84	29.17	29.62
AEO 1999						21.35	22.36	22.54	23.18	23.65	24.17	24.57	25.19	25.77	26.41	26.92	27.42	28.02	28.50	29.12
AEO 2000							21.46	22.36	22.19	22.42	22.92	23.27	23.91	24.53	25.25	25.84	26.22	26.95	27.47	27.98
AEO 2001								22.00	22.67	23.55	24.37	24.96	25.24	25.70	26.01	26.59	27.24	28.05	28.61	29.33
AEO 2002									22.22	23.89	24.73	25.20	25.50	26.00	26.43	26.96	27.46	28.13	28.93	29.59
AEO 2003										23.20	24.00	24.48	24.60	24.98	25.21	25.98	26.52	27.06	27.68	28.32
AEO 2004											22.09	23.17	23.53	24.04	24.50	25.12	25.43	26.15	26.71	27.18
AEO 2005												22.14	22.32	22.64	23.07	23.95	24.64	25.44	26.23	26.83
AEO 2006													22.21	22.17	22.38	22.87	23.05	23.35	23.84	24.43
AEO 2007														21.72	22.68	23.40	23.77	24.02	24.18	24.57
AEO 2008															22.90	23.12	23.31	23.25	23.37	23.54
AEO 2009																23.04	22.55	21.89	21.45	21.11
AEO 2010																	22.59	22.51	21.99	21.82
AEO 2011																		23.83	23.86	23.91
AEO 2012																			24.52	25.20
AEO 2013																				25.63
Actual	20.79	21.25	22.21	22.61	22.74	22.25	22.41	23.33	22.24	23.03	22.28	22.40	22.01	21.70	23.10	23.28	22.91	24.09	24.38	25.50
Average Absolute Difference	0.92	0.73	1.33	1.20	0.92	0.69	0.72	0.99	0.65	0.75	1.54	1.73	2.27	2.74	1.84	1.97	2.47	2.11	2.49	2.39

Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-4.4	-4.9	-7.1	-7.2	-6.8	-3.7	-3.6	-5.8	0.6	-1.7	3.0	3.6	7.1	9.8	4.3	3.7	4.8	0.2		
AEO 1995		-2.0	-7.0	-7.8	-6.7	-2.7	-2.0	-5.2	0.1	-2.6	1.5	2.1	4.8	7.7	2.2	3.4	5.8	2.1		
AEO 1996			-4.0	-4.3	-2.8	-0.2	-0.6	-4.3	1.0	-1.2	3.9	5.5	9.4	11.8	6.6	7.9	11.6	7.9	9.2	6.7
AEO 1997				-2.0	0.1	4.5	5.5	2.3	8.5	7.0	13.8	15.3	19.1	22.2	16.9	17.5	20.9	16.3	16.8	13.3
AEO 1998					-3.9	3.5	6.4	3.2	9.9	7.7	13.7	14.8	19.1	22.8	17.8	19.6	23.7	19.7	19.6	16.1
AEO 1999						-4.0	-0.2	-3.4	4.2	2.7	8.5	9.7	14.4	18.7	14.3	15.6	19.7	16.3	16.9	14.2
AEO 2000							-4.2	-4.2	-0.2	-2.6	2.9	3.9	8.6	13.1	9.3	11.0	14.4	11.9	12.7	9.7
AEO 2001								-5.7	1.9	2.3	9.4	11.4	14.7	18.4	12.6	14.2	18.9	16.4	17.3	15.0
AEO 2002									-0.1	3.7	11.0	12.5	15.8	19.8	14.4	15.8	19.9	16.8	18.6	16.0
AEO 2003										0.8	7.7	9.3	11.8	15.1	9.1	11.6	15.7	12.3	13.5	11.0
AEO 2004											-0.8	3.4	6.9	10.8	6.0	7.9	11.0	8.6	9.5	6.6
AEO 2005												-1.2	1.4	4.3	-0.1	2.9	7.5	5.6	7.6	5.2
AEO 2006													0.9	2.2	-3.1	-1.7	0.6	-3.0	-2.2	-4.2
AEO 2007														0.1	-1.8	0.5	3.7	-0.3	-0.8	-3.6
AEO 2008															-0.9	-0.7	1.8	-3.5	-4.1	-7.7
AEO 2009																-1.0	-1.6	-9.1	-12.0	-17.2
AEO 2010																	-1.4	-6.5	-9.8	-14.5
AEO 2011																		-1.1	-2.1	-6.3
AEO 2012																			0.5	-1.2
AEO 2013																				0.5
Average Absolute Percent Difference	4.4	3.4	6.0	5.3	4.0	3.1	3.2	4.2	2.9	3.2	6.9	7.7	10.3	12.6	8.0	8.5	10.8	8.8	10.2	9.4

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 4.1.

Table 9. Natural Gas Production, Projected vs. Actual

Projected																				
trillion cubic feet																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	17.71	17.68	17.84	18.12	18.25	18.43	18.58	18.93	19.28	19.51	19.80	19.92	20.13	20.18	20.38	20.35	20.16	20.19		
AEO 1995		18.28	17.98	17.92	18.21	18.63	18.92	19.08	19.20	19.36	19.52	19.75	19.94	20.17	20.28	20.60	20.59	20.88		
AEO 1996			18.90	19.15	19.52	19.59	19.59	19.65	19.73	19.97	20.36	20.82	21.25	21.37	21.68	22.11	22.47	22.83	23.36	23.81
AEO 1997				19.10	19.70	20.17	20.32	20.54	20.77	21.26	21.90	22.31	22.66	22.93	23.38	23.68	23.99	24.25	24.65	25.03
AEO 1998					18.85	19.06	20.35	20.27	20.60	20.94	21.44	21.81	22.25	22.65	23.18	23.75	24.23	24.70	24.97	25.34
AEO 1999						18.80	19.13	19.28	19.82	20.23	20.77	21.05	21.57	21.98	22.47	22.85	23.26	23.77	24.15	24.69
AEO 2000							18.36	18.89	18.47	18.50	18.88	19.15	19.70	20.27	20.90	21.42	21.74	22.46	22.92	23.35
AEO 2001								18.61	18.89	19.67	20.28	20.65	20.81	21.11	21.34	21.81	22.36	23.14	23.60	24.19
AEO 2002									19.28	19.54	20.20	20.52	20.73	21.25	21.70	22.29	22.80	23.48	24.21	24.75
AEO 2003										19.37	19.99	20.15	20.14	20.43	20.51	21.09	21.46	21.88	22.39	22.91
AEO 2004											19.57	19.51	19.58	19.66	19.95	20.21	20.25	20.50	20.80	21.11
AEO 2005												18.91	19.27	19.24	19.49	19.90	20.44	20.42	20.91	21.17
AEO 2006													18.14	18.16	18.00	18.38	18.47	18.58	18.92	19.13
AEO 2007														18.57	19.12	19.41	19.41	19.35	19.22	19.45
AEO 2008															19.00	19.18	19.28	19.29	19.26	19.40
AEO 2009																20.48	20.61	20.02	19.81	19.59
AEO 2010																	20.60	20.01	19.46	19.28
AEO 2011																		21.28	21.06	21.27
AEO 2012																			22.95	23.66
AEO 2013																				23.91
Actual	18.10	18.82	18.60	18.85	18.90	19.02	18.83	19.18	19.62	18.93	19.10	18.59	18.05	18.50	19.27	20.16	20.62	21.32	22.90	24.06
Average Absolute Difference	0.39	0.84	0.56	0.55	0.56	0.49	0.70	0.53	0.60	0.99	1.19	1.79	2.42	2.12	1.72	1.41	1.36	1.59	1.88	2.14

Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-2.1	-6.1	-4.1	-3.9	-3.5	-3.1	-1.3	-1.3	-1.7	3.1	3.7	7.1	11.5	9.1	5.8	0.9	-2.2	-5.3		
AEO 1995		-2.9	-3.3	-5.0	-3.7	-2.1	0.5	-0.5	-2.1	2.3	2.2	6.2	10.5	9.0	5.3	2.2	-0.2	-2.0		
AEO 1996			1.6	1.6	3.3	3.0	4.0	2.4	0.6	5.5	6.6	12.0	17.7	15.5	12.5	9.7	9.0	7.1	2.0	-1.1
AEO 1997				1.3	4.2	6.0	7.9	7.1	5.9	12.3	14.7	20.0	25.5	23.9	21.4	17.5	16.3	13.8	7.6	4.0
AEO 1998					-0.3	0.2	8.1	5.7	5.0	10.7	12.3	17.3	23.3	22.4	20.3	17.8	17.5	15.9	9.0	5.3
AEO 1999						-1.2	1.6	0.5	1.0	6.9	8.7	13.2	19.5	18.8	16.6	13.4	12.8	11.5	5.5	2.6
AEO 2000							-2.5	-1.5	-5.9	-2.2	-1.1	3.0	9.1	9.5	8.5	6.3	5.4	5.4	0.1	-2.9
AEO 2001								-3.0	-3.7	3.9	6.2	11.1	15.3	14.1	10.8	8.2	8.4	8.6	3.0	0.5
AEO 2002									-1.7	3.2	5.7	10.4	14.8	14.9	12.6	10.6	10.6	10.2	5.7	2.9
AEO 2003										2.3	4.7	8.4	11.6	10.4	6.5	4.6	4.1	2.6	-2.2	-4.8
AEO 2004											2.4	4.9	8.5	6.3	3.6	0.3	-1.8	-3.8	-9.2	-12.3
AEO 2005												1.7	6.8	4.0	1.2	-1.3	-0.9	-4.2	-8.7	-12.0
AEO 2006													0.5	-1.9	-6.6	-8.8	-10.4	-12.8	-17.4	-20.5
AEO 2007														0.4	-0.7	-3.7	-5.9	-9.2	-16.1	-19.2
AEO 2008															-1.4	-4.9	-6.5	-9.5	-15.9	-19.4
AEO 2009																1.6	-0.1	-6.1	-13.5	-18.6
AEO 2010																	-0.1	-6.1	-15.0	-19.9
AEO 2011																		-0.2	-8.1	-11.6
AEO 2012																			0.2	-1.7
AEO 2013																				-0.6
Average Absolute Percent Difference	2.1	4.5	3.0	2.9	3.0	2.6	3.7	2.8	3.1	5.2	6.2	9.6	13.4	11.4	8.9	7.0	6.6	7.5	8.2	8.9

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 4.1.

Table 10. Natural Gas Net Imports, Projected vs. Actual

Projected																					
trillion cubic feet																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	2.02	2.40	2.66	2.74	2.81	2.85	2.89	2.93	2.95	2.97	3.00	3.16	3.31	3.50	3.57	3.63	3.74	3.85	3.85	3.85	
AEO 1995		2.46	2.54	2.80	2.87	2.87	2.89	2.90	2.90	2.92	2.95	2.97	3.00	3.03	3.19	3.35	3.51	3.60	3.60	3.60	
AEO 1996			2.56	2.75	2.85	2.88	2.93	2.98	3.02	3.06	3.07	3.09	3.12	3.17	3.23	3.29	3.37	3.46	3.56	3.68	
AEO 1997				2.82	2.96	3.16	3.43	3.46	3.50	3.53	3.58	3.64	3.69	3.74	3.78	3.83	3.87	3.92	3.97	4.04	
AEO 1998					2.95	3.19	3.53	3.84	3.87	3.89	3.94	3.98	4.02	4.06	4.11	4.16	4.22	4.28	4.34	4.42	
AEO 1999						2.92	3.16	3.29	3.41	3.44	3.47	3.59	3.68	3.85	4.00	4.12	4.21	4.35	4.45	4.52	
AEO 2000							3.42	3.65	3.85	4.00	4.10	4.14	4.19	4.24	4.32	4.38	4.45	4.52	4.57	4.64	
AEO 2001								3.51	3.76	3.88	4.07	4.33	4.48	4.65	4.74	4.86	4.97	5.06	5.16	5.26	
AEO 2002									3.68	3.74	4.04	4.31	4.50	4.58	4.68	4.72	4.80	4.89	4.97	5.06	
AEO 2003										3.17	3.32	3.67	3.86	3.98	4.17	4.41	4.62	4.78	4.88	5.01	
AEO 2004											3.51	3.60	3.87	4.28	4.43	4.78	5.04	5.50	5.76	5.90	
AEO 2005												3.28	3.37	3.64	3.75	4.13	4.20	4.94	5.16	5.50	
AEO 2006													3.39	3.65	4.00	4.09	4.16	4.35	4.49	4.86	
AEO 2007														3.29	3.43	3.87	4.24	4.55	4.84	5.00	
AEO 2008															3.80	3.85	3.95	3.85	4.01	4.02	
AEO 2009																3.03	2.73	2.34	1.99	1.76	
AEO 2010																	2.76	2.82	2.78	2.62	
AEO 2011																		2.74	2.75	2.64	
AEO 2012																			1.90	1.64	
AEO 2013																				1.72	
Actual	2.21	2.46	2.69	2.78	2.84	2.99	3.42	3.54	3.60	3.50	3.26	3.40	3.61	3.46	3.79	3.02	2.68	2.60	1.96	1.52	
Average Absolute Difference	0.19	0.03	0.10	0.03	0.06	0.14	0.28	0.32	0.33	0.35	0.43	0.43	0.40	0.50	0.40	1.01	1.37	1.52	2.14	2.50	
Projected vs. Actual																					
percent difference																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	-8.6	-2.5	-1.0	-1.6	-1.0	-4.8	-15.5	-17.2	-18.1	-15.1	-8.1	-7.2	-8.4	1.1	-5.7	20.2	39.6	47.9			
AEO 1995		-0.1	-5.5	0.6	1.2	-4.1	-15.5	-18.0	-19.5	-16.6	-9.6	-12.8	-17.0	-12.5	-15.7	10.9	31.0	38.3			
AEO 1996			-4.7	-1.2	0.5	-3.8	-14.4	-15.8	-16.2	-12.6	-5.9	-9.2	-13.6	-8.4	-14.7	8.9	25.8	32.9	81.5	142.3	
AEO 1997				1.3	4.3	5.6	0.2	-2.2	-2.9	0.9	9.7	6.9	2.1	8.0	-0.1	26.8	44.5	50.5	102.4	166.0	
AEO 1998					4.0	6.6	3.2	8.6	7.4	11.3	20.6	16.8	11.3	17.3	8.5	37.9	57.6	64.3	121.2	190.9	
AEO 1999						-2.4	-7.5	-6.9	-5.3	-1.7	6.4	5.4	1.9	11.1	5.7	36.3	57.0	67.2	126.9	197.7	
AEO 2000							-0.1	3.0	6.7	14.4	25.5	21.6	16.0	22.5	14.0	45.1	66.0	73.4	133.1	205.3	
AEO 2001								-0.6	4.4	10.8	24.6	27.3	23.9	34.3	25.2	60.8	85.4	94.3	162.8	246.4	
AEO 2002									2.2	7.0	23.7	26.7	24.6	32.3	23.6	56.2	79.3	87.8	153.4	233.2	
AEO 2003										-9.3	1.6	7.9	6.8	15.1	10.3	46.0	72.4	83.8	148.9	229.6	
AEO 2004											7.5	5.8	7.1	23.5	17.0	58.3	88.1	111.1	193.4	288.3	
AEO 2005												-3.7	-6.7	5.2	-1.0	36.7	56.8	89.7	163.2	261.9	
AEO 2006													-6.0	5.3	5.6	35.4	55.3	66.9	128.8	219.8	
AEO 2007															-5.0	-9.4	28.3	58.2	74.7	146.5	229.3
AEO 2008																0.5	27.3	47.3	47.7	104.2	164.9
AEO 2009																	0.3	2.1	-10.2	1.6	16.0
AEO 2010																		3.0	8.3	41.5	72.6
AEO 2011																			5.3	40.3	74.0
AEO 2012																				-3.2	7.8
AEO 2013																					13.1
Average Absolute Percent Difference	8.6	1.3	3.7	1.2	2.2	4.5	8.1	9.0	9.2	10.0	13.0	12.6	11.2	14.4	10.5	33.5	51.1	58.6	109.0	164.4	

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 4.1.

Table 11a. Coal Prices to Electric Generating Plants, Projected vs. Actual

Projected Price in Constant Dollars

constant dollars per million Btu in "dollar year" specific to each AEO

AEO Dollar Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	1992	1.47	1.48	1.53	1.57	1.58	1.57	1.61	1.63	1.68	1.69	1.70	1.72	1.70	1.76	1.79	1.81	1.88	1.92	
AEO 1995	1993	1.39	1.39	1.39	1.38	1.40	1.40	1.39	1.39	1.42	1.41	1.43	1.44	1.45	1.46	1.46	1.46	1.47	1.50	
AEO 1996	1994		1.32	1.29	1.28	1.27	1.26	1.26	1.25	1.27	1.27	1.27	1.28	1.27	1.28	1.27	1.28	1.27	1.28	1.29
AEO 1997	1995			1.33	1.32	1.31	1.31	1.29	1.30	1.29	1.26	1.24	1.24	1.25	1.24	1.22	1.21	1.20	1.17	1.16
AEO 1998	1996				1.25	1.23	1.22	1.20	1.19	1.17	1.16	1.15	1.14	1.12	1.11	1.10	1.10	1.09	1.07	1.06
AEO 1999	1997					1.23	1.21	1.19	1.18	1.17	1.16	1.15	1.14	1.12	1.11	1.09	1.07	1.06	1.04	1.03
AEO 2000	1998						1.26	1.24	1.19	1.16	1.14	1.12	1.11	1.10	1.10	1.09	1.06	1.07	1.06	1.05
AEO 2001	1999							1.20	1.19	1.18	1.16	1.15	1.13	1.12	1.10	1.08	1.06	1.05	1.04	1.04
AEO 2002	2000								1.20	1.16	1.15	1.15	1.13	1.10	1.09	1.07	1.06	1.05	1.05	1.04
AEO 2003	2001									1.22	1.22	1.22	1.22	1.21	1.20	1.19	1.18	1.17	1.17	1.16
AEO 2004	2002										1.24	1.23	1.23	1.23	1.22	1.23	1.23	1.22	1.22	1.22
AEO 2005	2003											1.28	1.29	1.29	1.28	1.28	1.27	1.25	1.24	1.24
AEO 2006	2004												1.50	1.53	1.51	1.50	1.47	1.48	1.45	1.44
AEO 2007	2005													1.67	1.69	1.70	1.70	1.71	1.67	1.64
AEO 2008	2006														1.73	1.77	1.82	1.84	1.81	1.78
AEO 2009	2007															1.93	1.98	1.97	1.87	1.86
AEO 2010	2008																2.15	1.99	1.98	1.99
AEO 2011	2009																	2.26	2.22	2.16
AEO 2012	2010																		2.34	2.38
AEO 2013	2011																			2.41
Actual in Nominal\$		1.39	1.36	1.32	1.29	1.27	1.25	1.22	1.20	1.23	1.25	1.28	1.36	1.54	1.69	1.77	2.07	2.21	2.27	2.40
Average Absolute Difference		0.11	0.12	0.15	0.17	0.16	0.16	0.18	0.19	0.17	0.15	0.14	0.14	0.18	0.23	0.24	0.38	0.45	0.47	0.63

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994		14.0	23.7	32.2	37.1	40.1	50.1	57.3	61.5	62.7	63.2	59.8	44.1	40.4	40.2	24.0	21.6	22.6		
AEO 1995		4.7	9.9	13.7	18.9	22.2	26.8	31.3	33.6	32.8	34.3	30.9	20.3	13.9	11.9	-2.2	-6.9	-6.3		
AEO 1996			2.1	4.3	6.4	8.5	12.7	16.3	15.3	16.8	17.0	13.1	4.0	-2.8	-4.1	-16.7	-20.7	-22.8	-23.9	-22.1
AEO 1997				4.9	7.3	9.5	14.6	17.2	17.3	16.1	13.3	8.5	-1.7	-6.1	-8.8	-21.6	-26.5	-28.3	-32.2	-31.6
AEO 1998					-0.1	1.1	4.7	6.6	5.2	4.1	2.5	-2.0	-11.3	-17.5	-19.8	-30.5	-34.6	-36.2	-38.7	-38.8
AEO 1999						-0.6	2.3	4.4	3.1	2.2	0.9	-3.5	-12.7	-19.1	-21.3	-32.6	-37.1	-38.6	-41.5	-41.5
AEO 2000							5.1	7.1	2.0	0.1	-2.4	-6.6	-15.7	-21.3	-23.1	-33.2	-38.3	-38.8	-41.0	-40.8
AEO 2001								1.9	0.5	0.1	-1.5	-5.9	-15.1	-21.3	-24.1	-34.8	-39.4	-40.7	-43.0	-42.6
AEO 2002									-0.7	-3.8	-4.6	-7.7	-17.5	-24.2	-26.4	-36.5	-40.7	-42.0	-43.8	-43.6
AEO 2003										-1.1	-1.0	-4.7	-12.3	-18.4	-20.7	-31.3	-35.7	-36.9	-39.0	-38.5
AEO 2004											-1.1	-4.7	-13.2	-18.7	-20.4	-30.1	-34.1	-35.1	-37.0	-36.2
AEO 2005												-3.0	-11.1	-16.2	-18.4	-28.8	-33.3	-35.0	-37.3	-36.7
AEO 2006													0.3	-3.5	-6.1	-18.8	-24.6	-25.2	-28.9	-28.5
AEO 2007															2.1	1.5	-10.6	-15.7	-16.6	-20.9
AEO 2008																0.7	-10.1	-12.8	-13.0	-17.1
AEO 2009																	-4.6	-7.5	-14.3	-16.4
AEO 2010																		-1.8	-10.3	-13.5
AEO 2011																			1.0	-3.7
AEO 2012																				3.2
AEO 2013																				2.0
Average Absolute Percent Difference		8.5	9.4	11.9	13.8	14.0	13.7	16.6	17.8	15.5	14.0	12.9	12.5	13.8	16.1	16.5	22.9	25.4	25.8	28.1

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.9. Bureau of Economic Analysis, US Dept. of Commerce, July 2013.

Table 11b. Coal Prices to Electric Generating Plants, Projected vs. Actual

Projected Price in Nominal Dollars

nominal dollars per million Btu

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	1.50	1.55	1.64	1.73	1.78	1.82	1.92	2.01	2.13	2.22	2.30	2.41	2.46	2.64	2.78	2.90	3.12	3.30		
AEQ 1995		1.42	1.46	1.49	1.55	1.59	1.62	1.67	1.76	1.80	1.89	1.97	2.05	2.13	2.21	2.28	2.38	2.50		
AEQ 1996			1.35	1.35	1.37	1.39	1.42	1.46	1.50	1.56	1.62	1.67	1.75	1.80	1.87	1.92	2.01	2.05	2.16	2.25
AEQ 1997				1.36	1.38	1.40	1.44	1.46	1.51	1.54	1.55	1.58	1.62	1.70	1.74	1.77	1.81	1.85	1.87	1.93
AEQ 1998					1.28	1.28	1.30	1.32	1.34	1.36	1.37	1.39	1.42	1.45	1.47	1.51	1.55	1.58	1.61	1.64
AEQ 1999						1.24	1.25	1.25	1.27	1.29	1.31	1.32	1.33	1.35	1.36	1.37	1.39	1.42	1.43	1.46
AEQ 2000							1.28	1.27	1.24	1.24	1.24	1.25	1.26	1.28	1.30	1.32	1.32	1.35	1.37	1.39
AEQ 2001								1.22	1.24	1.25	1.26	1.28	1.29	1.30	1.30	1.30	1.30	1.31	1.33	1.34
AEQ 2002									1.22	1.21	1.23	1.27	1.27	1.28	1.29	1.31	1.33	1.35	1.38	1.40
AEQ 2003										1.23	1.27	1.30	1.34	1.35	1.36	1.37	1.39	1.40	1.43	1.46
AEQ 2004											1.26	1.27	1.29	1.31	1.34	1.37	1.41	1.44	1.48	1.52
AEQ 2005												1.31	1.34	1.37	1.38	1.41	1.42	1.44	1.46	1.49
AEQ 2006													1.53	1.60	1.61	1.63	1.63	1.68	1.68	1.71
AEQ 2007														1.72	1.78	1.83	1.86	1.89	1.89	1.89
AEQ 2008															1.78	1.85	1.93	1.99	1.99	1.99
AEQ 2009																1.97	2.05	1.93	1.97	1.97
AEQ 2010																	2.18	2.05	2.07	2.10
AEQ 2011																		2.28	2.27	2.23
AEQ 2012																			2.39	2.46
AEQ 2013																				2.45
Actual in Nominal\$	1.39	1.36	1.32	1.29	1.27	1.25	1.22	1.20	1.23	1.25	1.28	1.36	1.54	1.69	1.77	2.07	2.21	2.27	2.39	2.40
Average Absolute Difference	0.12	0.13	0.17	0.19	0.20	0.21	0.25	0.26	0.24	0.23	0.23	0.23	0.27	0.32	0.34	0.51	0.57	0.59	0.64	0.60

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	8.5	14.4	24.6	34.0	40.1	45.5	58.2	67.3	73.3	77.4	80.0	77.0	59.8	56.0	56.8	40.2	41.2	45.3		
AEQ 1995		4.9	11.0	15.5	21.4	26.7	33.2	39.1	42.7	44.3	47.7	44.8	33.0	26.3	24.6	10.2	7.5	10.3		
AEQ 1996			2.1	4.8	7.5	11.2	16.9	21.6	21.5	24.9	26.6	23.1	13.6	6.6	5.7	-7.0	-9.2	-9.7	-9.8	-6.1
AEQ 1997				5.4	8.4	12.1	18.6	21.9	22.7	22.9	21.0	16.2	5.2	0.6	-1.8	-14.6	-18.0	-18.4	-21.7	-19.7
AEQ 1998					0.2	2.6	7.2	9.6	8.5	8.5	7.4	2.6	-7.6	-14.5	-16.7	-27.3	-30.1	-30.5	-32.6	-31.6
AEQ 1999						-0.7	2.6	4.6	3.4	3.2	2.1	-3.1	-13.3	-20.3	-22.9	-33.7	-37.1	-37.7	-40.1	-39.3
AEQ 2000							5.0	6.2	0.7	-0.9	-3.5	-8.4	-18.2	-24.4	-26.6	-36.3	-40.4	-40.4	-42.5	-42.2
AEQ 2001								2.0	0.4	0.4	-1.2	-6.2	-16.3	-23.3	-26.8	-37.3	-41.2	-42.1	-44.5	-44.1
AEQ 2002									-0.8	-3.5	-3.7	-6.9	-17.3	-24.4	-26.8	-36.7	-40.0	-40.7	-42.4	-41.6
AEQ 2003										-1.3	-0.6	-4.5	-13.2	-20.2	-23.1	-33.7	-37.3	-38.1	-40.1	-39.2
AEQ 2004											-1.7	-6.6	-16.0	-22.2	-24.5	-33.7	-36.4	-36.6	-38.2	-36.8
AEQ 2005												-3.6	-12.8	-19.0	-21.9	-32.1	-35.6	-36.6	-38.7	-37.7
AEQ 2006													-0.4	-5.4	-9.0	-21.4	-26.2	-26.2	-29.7	-28.7
AEQ 2007															1.9	0.7	-11.7	-16.0	-21.1	-21.4
AEQ 2008																0.4	-10.8	-12.7	-12.5	-17.1
AEQ 2009																	-4.7	-7.4	-14.9	-17.7
AEQ 2010																		-1.2	-9.6	-13.5
AEQ 2011																			0.5	-4.8
AEQ 2012																				0.1
AEQ 2013																				2.0
Average Absolute Percent Difference	8.5	9.6	12.6	14.9	15.5	16.5	20.2	21.5	19.3	18.7	17.8	16.9	17.5	18.9	19.2	24.5	25.7	25.9	26.7	24.9

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.9.

Table 12. Total Coal Consumption, Projected vs. Actual

Projected																				
million short tons																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	920	928	933	938	943	948	953	958	962	967	978	990	987	992	1006	1035	1061	1079		
AEO 1995		935	940	941	947	948	951	954	958	963	971	984	992	996	1002	1013	1025	1039		
AEO 1996			937	942	954	962	983	990	1004	1017	1027	1033	1046	1067	1070	1071	1074	1082	1087	1094
AEO 1997				948	970	987	1003	1017	1020	1025	1034	1041	1054	1075	1086	1092	1092	1099	1104	1114
AEO 1998					1009	1051	1044	1058	1087	1084	1090	1097	1112	1130	1142	1148	1160	1162	1180	1184
AEO 1999						1040	1075	1092	1109	1113	1118	1120	1120	1133	1139	1150	1155	1156	1173	1177
AEO 2000							1053	1086	1103	1124	1142	1164	1175	1184	1189	1194	1199	1195	1200	1206
AEO 2001								1078	1112	1135	1153	1165	1183	1191	1220	1228	1228	1235	1240	1244
AEO 2002									1088	1092	1126	1147	1176	1199	1227	1235	1243	1251	1256	1265
AEO 2003										1040	1059	1082	1106	1138	1172	1185	1200	1218	1231	1239
AEO 2004											1100	1098	1126	1156	1183	1193	1216	1229	1240	1254
AEO 2005												1102	1137	1159	1189	1210	1224	1229	1237	1248
AEO 2006													1144	1150	1172	1196	1224	1233	1245	1264
AEO 2007														1135	1147	1152	1169	1195	1222	1233
AEO 2008															1127	1126	1135	1145	1181	1199
AEO 2009																1109	1077	1117	1152	1178
AEO 2010																	1015	1035	1094	1122
AEO 2011																		1055	1026	1024
AEO 2012																			1039	984
AEO 2013																				905
Actual	944	951	962	1006	1030	1037	1039	1084	1060	1066	1095	1107	1126	1112	1128	1121	997	1049	1003	890
Average Absolute Difference	24	20	25	64	65	53	46	57	55	54	52	50	50	55	57	61	150	107	168	273

Projected vs. Actual																					
percent difference																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	-2.6	-2.4	-3.0	-6.8	-8.4	-8.6	-8.2	-11.6	-9.3	-9.3	-10.7	-10.6	-12.3	-10.8	-10.8	-7.6	6.4	2.9			
AEO 1995		-1.7	-2.3	-6.5	-8.0	-8.6	-8.4	-12.0	-9.6	-9.7	-11.3	-11.1	-11.9	-10.5	-11.2	-9.6	2.8	-0.9			
AEO 1996			-2.6	-6.4	-7.3	-7.2	-5.4	-8.7	-5.3	-4.6	-6.2	-6.7	-7.1	-4.1	-5.1	-4.4	7.7	3.2	8.4	22.9	
AEO 1997				-5.8	-5.8	-4.8	-3.4	-6.2	-3.8	-3.9	-5.6	-6.0	-6.4	-3.4	-3.7	-2.5	9.5	4.8	10.1	25.1	
AEO 1998					-2.0	1.3	0.5	-2.4	2.5	1.7	-0.5	-0.9	-1.3	1.6	1.3	2.5	16.3	10.8	17.7	33.0	
AEO 1999							0.3	3.5	0.8	4.6	4.4	2.2	1.1	-0.5	1.9	1.0	15.8	10.3	17.0	32.2	
AEO 2000								1.4	0.2	4.1	5.4	4.3	5.2	4.4	6.5	5.4	20.2	14.0	19.7	35.4	
AEO 2001									-0.6	4.9	6.4	5.3	5.2	5.0	7.1	8.2	23.2	17.7	23.6	39.7	
AEO 2002										2.6	2.4	2.8	3.6	4.4	7.8	8.7	10.2	24.6	19.3	42.1	
AEO 2003											-2.5	-3.2	-2.2	-1.8	2.3	3.9	5.8	20.3	16.2	39.2	
AEO 2004												0.4	-0.9	0.0	3.9	4.9	6.5	21.9	17.2	40.8	
AEO 2005													-0.5	0.9	4.2	5.4	8.0	22.7	17.2	40.1	
AEO 2006														1.6	3.4	3.9	6.7	22.8	17.6	41.9	
AEO 2007															2.0	1.7	2.8	17.2	13.9	38.5	
AEO 2008																-0.1	0.5	13.8	9.2	34.6	
AEO 2009																	-1.0	7.9	6.5	32.3	
AEO 2010																		1.8	-1.3	26.0	
AEO 2011																			0.6	2.3	15.0
AEO 2012																				3.6	10.5
AEO 2013																					1.6
Average Absolute Percent Difference	2.6	2.1	2.6	6.4	6.3	5.1	4.4	5.3	5.2	5.0	4.8	4.5	4.4	4.9	5.0	5.4	15.0	10.2	16.8	30.6	

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 6.2.

Table 13. Coal Production, Projected vs. Actual

Projected																				
million short tons																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	999	1021	1041	1051	1056	1066	1073	1081	1087	1098	1107	1122	1121	1128	1143	1173	1201	1223		
AEO 1995		1006	1010	1011	1016	1017	1021	1027	1033	1040	1051	1066	1076	1083	1090	1108	1122	1137		
AEO 1996			1037	1044	1041	1045	1061	1070	1086	1100	1112	1121	1135	1156	1161	1167	1173	1184	1190	1203
AEO 1997				1028	1052	1072	1088	1105	1110	1115	1123	1133	1146	1171	1182	1190	1193	1201	1209	1223
AEO 1998					1088	1122	1128	1145	1176	1176	1183	1191	1207	1229	1239	1249	1261	1265	1284	1290
AEO 1999						1125	1154	1168	1187	1193	1198	1199	1200	1213	1220	1232	1236	1236	1253	1259
AEO 2000							1120	1136	1153	1174	1190	1212	1221	1231	1236	1242	1246	1242	1246	1249
AEO 2001								1111	1136	1181	1198	1209	1226	1234	1262	1269	1268	1273	1277	1282
AEO 2002									1168	1141	1162	1183	1211	1234	1262	1271	1279	1284	1292	1300
AEO 2003										1085	1099	1102	1124	1156	1188	1200	1214	1231	1239	1247
AEO 2004											1100	1121	1141	1168	1192	1199	1220	1230	1240	1250
AEO 2005												1125	1179	1179	1207	1225	1237	1238	1242	1250
AEO 2006													1145	1166	1204	1223	1252	1261	1266	1277
AEO 2007														1149	1143	1145	1159	1189	1214	1225
AEO 2008															1155	1152	1153	1166	1199	1211
AEO 2009																1159	1109	1145	1182	1206
AEO 2010																	1082	1062	1120	1149
AEO 2011																		1100	1063	1056
AEO 2012																			1093	1048
AEO 2013																				1033
Actual	954	1042	1042	1073	1098	1126	1109	1083	1138	1103	1082	1123	1145	1177	1161	1186	1089	1098	1109	1027
Average Absolute Difference	45	28	12	39	47	52	38	40	41	45	62	40	39	36	46	41	112	110	111	181
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	4.8	-2.0	-0.1	-2.0	-3.8	-5.3	-3.3	-0.2	-4.5	-0.5	2.3	-0.1	-2.1	-4.2	-1.5	-1.1	10.3	11.4		
AEO 1995		-3.4	-3.0	-5.7	-7.5	-9.7	-7.9	-5.1	-9.2	-5.7	-2.8	-5.1	-6.0	-8.0	-6.1	-6.6	3.1	3.6		
AEO 1996			-0.4	-2.7	-5.2	-7.2	-4.3	-1.2	-4.6	-0.3	2.8	-0.2	-0.9	-1.8	0.0	-1.6	7.8	7.8	7.3	17.1
AEO 1997				-4.2	-4.2	-4.8	-1.9	2.1	-2.4	1.1	3.8	0.9	0.1	-0.5	1.8	0.3	9.6	9.4	9.0	19.0
AEO 1998					-0.9	-0.4	1.7	5.7	3.3	6.6	9.3	6.0	5.4	4.4	6.7	5.3	15.8	15.2	15.8	25.6
AEO 1999						-0.1	4.0	7.9	4.3	8.1	10.8	6.7	4.8	3.1	5.1	3.9	13.5	12.5	13.0	22.6
AEO 2000							1.0	5.0	1.4	6.4	10.0	7.9	6.7	4.5	6.5	4.7	14.4	13.1	12.3	21.5
AEO 2001								2.6	-0.2	7.0	10.8	7.6	7.1	4.8	8.7	7.0	16.5	15.9	15.2	24.7
AEO 2002									2.6	3.4	7.4	5.3	5.8	4.9	8.7	7.2	17.5	17.0	16.5	26.6
AEO 2003										-1.7	1.6	-1.9	-1.8	-1.8	2.3	1.2	11.5	12.1	11.8	21.3
AEO 2004											1.7	-0.2	-0.3	-0.8	2.7	1.1	12.1	12.0	11.8	21.6
AEO 2005												0.2	2.9	0.1	4.0	3.3	13.6	12.8	12.0	21.6
AEO 2006													0.0	-1.0	3.7	3.1	15.0	14.8	14.2	24.3
AEO 2007														-2.4	-1.5	-3.5	6.4	8.3	9.5	19.3
AEO 2008															-0.5	-2.8	5.9	6.2	8.1	17.9
AEO 2009																-2.3	1.9	4.3	6.6	17.3
AEO 2010																	-0.6	-3.3	1.0	11.8
AEO 2011																		0.2	-4.1	2.8
AEO 2012																			-1.4	2.0
AEO 2013																				0.5
Average Absolute Percent Difference	4.8	2.7	1.2	3.6	4.3	4.6	3.4	3.7	3.6	4.1	5.8	3.5	3.4	3.0	4.0	3.4	10.3	10.0	10.0	17.6

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 6.1.

Table 14a. Average Electricity Prices, Projected vs. Actual

Projected Price in Constant Dollars

constant dollars, cents per kilowatt-hour in "dollar year" specific to each AEO

AEO Dollar Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	1992	6.80	6.80	6.90	6.90	6.90	7.00	7.00	7.10	7.10	7.20	7.20	7.20	7.30	7.30	7.40	7.50	7.60			
AEO 1995	1993		6.80	6.80	6.70	6.70	6.70	6.70	6.80	6.80	6.90	6.90	6.90	7.00	7.00	7.10	7.10	7.20			
AEO 1996	1994			7.09	6.99	6.94	6.93	6.96	6.96	6.97	6.98	6.97	6.98	6.95	6.95	6.94	6.96	6.95	6.91	6.87	
AEO 1997	1995				6.94	6.89	6.90	6.91	6.86	6.84	6.78	6.73	6.66	6.60	6.58	6.54	6.49	6.48	6.45	6.36	6.27
AEO 1998	1996					6.80	6.60	6.57	6.46	6.36	6.29	6.26	6.18	6.12	6.05	5.97	5.94	5.91	5.81	5.71	
AEO 1999	1997						6.70	6.67	6.58	6.48	6.38	6.41	6.41	6.35	6.32	6.26	6.20	6.17	6.14	6.05	5.96
AEO 2000	1998							6.60	6.57	6.45	6.31	6.25	6.19	6.09	6.09	6.07	6.03	5.95	5.97	5.90	5.86
AEO 2001	1999								6.80	6.75	6.53	6.44	6.38	6.19	6.12	5.99	5.91	5.87	5.87	5.84	5.82
AEO 2002	2000									7.06	6.71	6.52	6.50	6.43	6.35	6.32	6.32	6.32	6.34	6.37	6.33
AEO 2003	2001										6.90	6.62	6.56	6.50	6.37	6.33	6.32	6.38	6.36	6.39	6.38
AEO 2004	2002											7.13	6.96	6.84	6.73	6.63	6.63	6.67	6.64	6.64	6.71
AEO 2005	2003												7.41	7.39	7.12	6.81	6.65	6.64	6.61	6.60	6.68
AEO 2006	2004													8.34	8.21	7.82	7.56	7.42	7.31	7.19	7.14
AEO 2007	2005														8.32	8.30	8.29	8.20	8.07	7.88	7.78
AEO 2008	2006															8.90	9.06	9.35	9.18	8.93	8.82
AEO 2009	2007																9.49	9.58	9.57	8.56	8.55
AEO 2010	2008																	9.58	9.14	8.60	8.90
AEO 2011	2009																		9.57	9.03	9.01
AEO 2012	2010																			9.73	9.59
AEO 2013	2011																				9.41
Actual in Nominal\$		6.93	6.91	6.89	6.86	6.85	6.74	6.64	6.81	7.29	7.20	7.44	7.61	8.14	8.90	9.13	9.74	9.82	9.83	9.90	9.87
Average Absolute Difference		0.02	0.11	0.32	0.36	0.38	0.43	0.55	0.44	0.40	0.44	0.50	0.48	0.62	0.83	0.84	1.06	1.05	1.03	1.02	1.35

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994		2.7	6.7	9.2	11.3	14.4	19.5	19.1	15.4	18.7	18.9	19.5	15.5	10.5	10.9	7.7	9.2	12.0			
AEO 1995		0.5	2.9	3.7	5.7	8.7	11.9	11.5	8.1	11.2	11.5	12.1	8.3	3.7	4.0	1.1	1.2	3.8			
AEO 1996			5.0	6.0	7.3	10.1	13.8	13.4	8.4	11.7	10.5	10.9	7.3	0.8	1.1	-3.2	-2.8	-1.8	-1.0	0.4	
AEO 1997				3.1	4.4	7.3	10.8	9.5	4.3	6.4	4.4	3.7	-0.7	-6.5	-6.8	-11.3	-11.4	-10.8	-10.8	-10.2	
AEO 1998					1.0	0.8	3.3	1.2	-4.8	-3.1	-4.7	-5.4	-9.6	-15.6	-15.9	-19.9	-20.4	-19.8	-20.1	-19.7	
AEO 1999						0.5	3.1	1.3	-4.7	-3.5	-4.2	-3.7	-7.8	-13.4	-13.9	-18.3	-18.7	-18.0	-18.2	-17.6	
AEO 2000							0.8	0.0	-6.2	-5.6	-7.6	-7.9	-12.6	-17.5	-17.5	-21.5	-22.5	-21.2	-21.1	-19.9	
AEO 2001								2.0	-3.3	-3.8	-6.2	-6.5	-12.4	-18.2	-19.8	-24.2	-24.6	-23.7	-23.0	-21.7	
AEO 2002									-1.0	-3.1	-7.0	-6.8	-11.0	-17.0	-17.1	-20.5	-20.6	-19.3	-17.8	-16.6	
AEO 2003										-2.7	-7.6	-8.1	-12.0	-18.5	-18.8	-22.4	-21.6	-20.8	-19.4	-17.7	
AEO 2004											-2.1	-4.0	-8.9	-15.3	-16.3	-19.8	-19.3	-18.7	-17.6	-14.9	
AEO 2005												0.2	-3.6	-12.3	-15.9	-21.2	-21.3	-20.8	-19.7	-17.1	
AEO 2006													5.9	-1.6	-6.0	-13.0	-14.4	-14.7	-15.0	-13.8	
AEO 2007														-3.5	-3.5	-7.6	-8.6	-8.8	-9.8	-9.0	
AEO 2008															0.3	-2.1	1.0	0.4	-0.9	-0.1	
AEO 2009																-0.5	-4.4	-12.0	-7.7	-5.9	
AEO 2010																	-1.6	-5.0	-9.3	-4.1	
AEO 2011																		-1.4	-5.6	-3.9	
AEO 2012																			0.4	1.0	
AEO 2013																				-3.0	
Average Absolute Percent Difference		0.3	1.6	4.9	5.5	5.9	7.0	9.0	7.2	6.2	7.0	7.7	7.4	8.9	11.0	11.2	13.4	13.1	12.9	12.8	10.9

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.8. Bureau of Economic Analysis, US Dept. of Commerce, July 2013.

Table 14b. Average Electricity Prices, Projected vs. Actual

Projected Price in Nominal Dollars

nominal dollars, cents per kilowatt-hour

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	6.95	7.12	7.41	7.59	7.79	8.01	8.36	8.62	9.02	9.32	9.76	10.08	10.42	10.94	11.32	11.87	12.45	13.05		
AEQ 1995		6.95	7.16	7.23	7.40	7.59	7.81	8.04	8.42	8.70	9.12	9.43	9.75	10.24	10.57	11.10	11.47	12.02		
AEQ 1996			7.23	7.30	7.42	7.60	7.84	8.07	8.33	8.60	8.90	9.19	9.54	9.84	10.18	10.52	10.92	11.29	11.62	11.95
AEQ 1997				7.11	7.22	7.41	7.61	7.76	7.95	8.11	8.30	8.46	8.65	8.92	9.16	9.40	9.71	9.98	10.19	10.40
AEQ 1998					6.94	6.89	7.03	7.08	7.16	7.27	7.42	7.53	7.66	7.79	7.97	8.16	8.36	8.58	8.71	8.86
AEQ 1999						6.77	6.87	6.91	6.97	7.02	7.21	7.36	7.46	7.59	7.70	7.83	7.99	8.18	8.30	8.44
AEQ 2000							6.68	6.76	6.75	6.73	6.79	6.87	6.91	7.06	7.19	7.30	7.35	7.54	7.61	7.72
AEQ 2001								6.95	7.05	6.94	7.00	7.09	7.03	7.09	7.07	7.11	7.19	7.32	7.42	7.53
AEQ 2002									7.21	6.99	6.99	7.15	7.26	7.36	7.52	7.71	7.89	8.11	8.34	8.52
AEQ 2003										6.99	6.90	7.01	7.10	7.10	7.18	7.30	7.51	7.64	7.84	8.02
AEQ 2004											7.24	7.16	7.18	7.21	7.25	7.42	7.65	7.81	8.01	8.33
AEQ 2005												7.57	7.70	7.54	7.35	7.32	7.46	7.59	7.77	8.06
AEQ 2006													8.55	8.59	8.32	8.21	8.23	8.28	8.33	8.48
AEQ 2007														8.57	8.74	8.89	8.95	8.97	8.91	8.96
AEQ 2008															9.13	9.46	9.93	9.92	9.82	9.86
AEQ 2009																9.69	9.40	8.60	8.99	9.09
AEQ 2010																	9.72	9.41	8.97	9.43
AEQ 2011																		9.65	9.23	9.31
AEQ 2012																			9.93	9.92
AEQ 2013																				9.58
Actual in Nominal\$	6.93	6.91	6.89	6.86	6.85	6.74	6.64	6.81	7.29	7.20	7.44	7.61	8.14	8.90	9.13	9.74	9.82	9.83	9.90	9.87
Average Absolute Difference	0.02	0.13	0.38	0.45	0.51	0.64	0.82	0.73	0.65	0.73	0.80	0.82	1.00	1.24	1.31	1.57	1.51	1.51	1.32	1.14

Projected vs. Actual

percent difference

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEQ 1994	0.3	3.1	7.5	10.7	13.7	18.8	25.9	26.6	23.8	29.4	31.1	32.4	28.1	22.9	24.0	21.8	26.8	32.8		
AEQ 1995		0.6	3.9	5.4	8.0	12.6	17.6	18.1	15.5	20.8	22.6	24.0	19.8	15.0	15.8	13.9	16.8	22.3		
AEQ 1996			5.0	6.4	8.4	12.8	18.1	18.4	14.2	19.5	19.6	20.8	17.2	10.6	11.5	8.1	11.2	14.8	17.4	21.0
AEQ 1997				3.6	5.4	9.9	14.7	13.9	9.1	12.6	11.5	11.2	6.3	0.2	0.3	-3.5	-1.1	1.6	3.0	5.4
AEQ 1998					1.3	2.3	5.9	4.0	-1.8	0.9	-0.2	-1.1	-5.9	-12.5	-12.7	-16.3	-14.9	-12.7	-12.0	-10.2
AEQ 1999						0.5	3.4	1.4	-4.4	-2.6	-3.2	-3.2	-8.4	-14.7	-15.6	-19.6	-18.6	-16.8	-16.2	-14.5
AEQ 2000							0.7	-0.8	-7.3	-6.5	-8.7	-9.7	-15.2	-20.7	-21.3	-25.1	-25.1	-23.3	-23.1	-21.8
AEQ 2001								2.1	-3.3	-3.5	-5.9	-6.8	-13.6	-20.3	-22.6	-27.0	-26.7	-25.5	-25.0	-23.7
AEQ 2002									-1.0	-2.9	-6.1	-6.0	-10.9	-17.3	-17.6	-20.8	-19.6	-17.5	-15.7	-13.6
AEQ 2003										-2.9	-7.2	-7.9	-12.8	-20.3	-21.3	-25.1	-23.5	-22.3	-20.8	-18.7
AEQ 2004											-2.7			-19.0	-20.6	-23.9	-22.1	-20.6	-19.1	-15.6
AEQ 2005												-0.5	-5.5	-15.3	-19.5	-24.8	-24.0	-22.8	-21.5	-18.4
AEQ 2006													5.1	-3.5	-8.9	-15.8	-16.2	-15.8	-15.9	-14.1
AEQ 2007														-3.7	-4.3	-8.7	-8.8	-8.7	-10.0	-9.2
AEQ 2008															0.0	-2.8	1.1	0.9	-0.8	-0.1
AEQ 2009																-0.5	-4.3	-12.6	-9.2	-7.9
AEQ 2010																	-1.0	-4.3	-9.4	-4.5
AEQ 2011																		-1.8	-6.8	-5.7
AEQ 2012																			0.3	0.5
AEQ 2013																				-3.0
Average Absolute Percent Difference	0.3	1.8	5.5	6.5	7.4	9.5	12.3	10.7	8.9	10.2	10.8	10.8	12.3	14.0	14.4	16.1	15.4	15.4	13.3	11.5

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 9.8.

Table 15. Total Electricity Sales, Projected vs. Actual

Projected																				
billion kilowatt-hours																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	2843	2891	2928	2962	3004	3039	3071	3112	3148	3185	3228	3263	3298	3332	3371	3405	3433	3469		
AEO 1995		2951	2967	2983	3026	3058	3085	3108	3134	3166	3204	3248	3285	3321	3357	3396	3433	3475		
AEO 1996			2973	2998	3039	3074	3106	3137	3173	3215	3262	3317	3363	3409	3454	3505	3553	3604	3660	3722
AEO 1997				3075	3115	3168	3229	3290	3328	3379	3437	3497	3545	3596	3649	3697	3736	3784	3838	3899
AEO 1998				3106	3204	3255	3318	3388	3438	3488	3546	3601	3658	3716	3775	3825	3877	3939	3996	
AEO 1999					3205	3262	3333	3402	3454	3492	3534	3585	3639	3691	3745	3793	3843	3900	3958	
AEO 2000						3288	3360	3402	3461	3523	3585	3647	3699	3753	3812	3861	3909	3958	4012	
AEO 2001							3364	3440	3530	3608	3681	3761	3838	3918	3998	4068	4147	4212	4286	
AEO 2002								3443	3502	3619	3711	3793	3869	3948	4022	4090	4170	4252	4332	
AEO 2003									3414	3527	3617	3684	3762	3848	3940	4014	4101	4183	4266	
AEO 2004										3495	3582	3669	3750	3830	3909	3977	4055	4133	4212	
AEO 2005											3547	3649	3722	3813	3912	3997	4070	4145	4220	
AEO 2006												3675	3700	3767	3847	3911	3978	4047	4116	
AEO 2007													3694	3757	3836	3891	3953	4014	4082	
AEO 2008														3744	3773	3807	3869	3927	3978	
AEO 2009															3725	3658	3737	3796	3847	
AEO 2010																3589	3617	3728	3800	
AEO 2011																	3749	3692	3734	
AEO 2012																		3763	3729	
AEO 2013																			3712	
Actual	2861	2935	3013	3101	3146	3264	3312	3421	3394	3465	3494	3547	3661	3670	3765	3733	3597	3754	3750	3687
Average Absolute Difference	18	30	57	97	88	140	127	169	101	111	105	110	122	124	128	153	250	199	222	308

Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-0.6	-1.5	-2.8	-4.5	-4.5	-6.9	-7.3	-9.0	-7.3	-8.1	-7.6	-8.0	-9.9	-9.2	-10.5	-8.8	-4.6	-7.6		
AEO 1995		0.6	-1.5	-3.8	-3.8	-6.3	-6.9	-9.2	-7.7	-8.6	-8.3	-8.4	-10.3	-9.5	-10.8	-9.0	-4.6	-7.4		
AEO 1996			-1.3	-3.3	-3.4	-5.8	-6.2	-8.3	-6.5	-7.2	-6.6	-6.5	-8.1	-7.1	-8.2	-6.1	-1.2	-4.0	-2.4	1.0
AEO 1997				-0.8	-1.0	-2.9	-2.5	-3.8	-2.0	-2.5	-1.6	-1.4	-3.2	-2.0	-3.1	-1.0	3.9	0.8	2.4	5.8
AEO 1998					-1.3	-1.8	-1.7	-3.0	-0.2	-0.8	-0.2	0.0	-1.6	-0.3	-1.3	1.1	6.4	3.3	5.0	8.4
AEO 1999						-1.8	-1.5	-2.6	0.2	-0.3	-0.1	-0.4	-2.1	-0.8	-2.0	0.3	5.4	2.4	4.0	7.4
AEO 2000							-0.7	-1.8	0.2	-0.1	0.8	1.1	-0.4	0.8	-0.3	2.1	7.3	4.1	5.5	8.8
AEO 2001								-1.7	1.3	1.9	3.3	3.8	2.7	4.6	4.1	7.1	13.1	10.5	12.3	16.2
AEO 2002									1.4	1.1	3.6	4.6	3.6	5.4	4.9	7.7	13.7	11.1	13.4	17.5
AEO 2003										-1.5	1.0	2.0	0.6	2.5	2.2	5.6	11.6	9.2	11.5	15.7
AEO 2004											0.0	1.0	0.2	2.2	1.7	4.7	10.6	8.0	10.2	14.2
AEO 2005												0.0	-0.3	1.4	1.3	4.8	11.1	8.4	10.5	14.5
AEO 2006													0.4	0.8	0.1	3.1	8.7	5.9	7.9	11.6
AEO 2007														0.6	-0.2	2.8	8.2	5.3	7.1	10.7
AEO 2008															-0.6	1.1	5.8	3.0	4.7	7.9
AEO 2009																-0.2	1.7	-0.5	1.2	4.4
AEO 2010																	-0.2	-3.7	-0.6	3.1
AEO 2011																		-0.2	-1.5	1.3
AEO 2012																			0.4	1.2
AEO 2013																				0.7
Average Absolute Percent Difference	0.6	1.0	1.9	3.1	2.8	4.3	3.8	4.9	3.0	3.2	3.0	3.1	3.3	3.4	3.4	4.1	6.9	5.3	5.9	8.3

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 7.1.

Table 16. Total Energy Consumption, Projected vs. Actual

Projected quadrillion Btu																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	88.0	89.5	90.7	91.7	92.7	93.6	94.6	95.7	96.7	97.7	98.9	100.0	100.8	101.7	102.7	103.6	104.3	105.2	106.1	107.0	
AEO 1995		89.2	90.0	90.6	91.9	93.0	93.8	94.6	95.3	96.2	97.2	98.4	99.4	100.3	101.2	102.1	102.9	103.9	104.8	105.7	
AEO 1996			90.6	91.3	92.5	93.5	94.3	95.1	95.9	96.9	98.0	99.2	100.4	101.4	102.1	103.1	103.8	104.7	105.5	106.5	
AEO 1997				92.6	93.6	95.1	96.6	97.9	98.8	99.9	101.2	102.4	103.4	104.7	105.8	106.6	107.2	107.9	108.6	109.4	
AEO 1998					94.7	96.7	98.6	99.8	101.3	102.4	103.4	104.5	105.8	107.3	108.6	109.9	111.1	112.2	113.1	114.1	
AEO 1999						94.6	97.0	99.2	100.9	102.0	102.8	103.6	104.7	106.0	107.2	108.5	109.7	110.8	111.8	112.8	
AEO 2000							96.4	98.1	99.4	100.9	102.4	103.8	105.3	106.6	107.9	109.2	110.2	111.3	112.2	113.2	
AEO 2001								97.6	99.9	102.2	104.1	105.6	107.0	108.5	110.0	111.4	112.7	114.1	115.4	116.6	
AEO 2002									98.3	101.0	104.1	105.8	107.6	109.3	110.8	112.2	113.8	115.6	117.5	119.2	
AEO 2003										97.5	99.9	101.7	103.2	105.1	107.2	109.3	111.1	113.3	115.2	117.1	
AEO 2004											98.1	100.2	102.8	104.9	106.8	108.6	109.9	111.8	113.5	115.3	
AEO 2005												99.8	101.8	103.6	105.6	107.8	109.7	111.3	112.9	114.3	
AEO 2006													100.5	101.3	103.3	104.9	106.4	107.9	109.2	110.7	
AEO 2007														100.7	102.4	103.7	105.1	106.5	107.7	109.0	
AEO 2008															101.4	102.3	102.2	103.3	104.6	105.5	
AEO 2009																100.5	98.1	99.1	100.6	101.6	
AEO 2010																	95.6	96.6	98.6	100.1	
AEO 2011																		97.8	98.3	99.5	
AEO 2012																			98.3	97.9	
AEO 2013																				96.1	
Actual	87.4	89.1	91.0	94.0	94.6	95.0	96.7	98.8	96.2	97.6	97.9	100.2	100.3	99.6	101.3	99.3	94.6	98.0	97.5	95.1	
Average Absolute Difference	0.6	0.3	0.6	2.5	1.5	1.2	1.4	1.9	2.6	2.5	3.1	2.5	3.1	4.7	4.2	7.2	12.1	9.6	10.9	13.7	
Projected vs. Actual percent difference																					
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
AEO 1994	0.7	0.5	-0.3	-2.4	-2.0	-1.5	-2.2	-3.1	0.5	0.0	1.0	-0.2	0.5	2.1	1.4	4.3	10.3	7.4			
AEO 1995		0.1	-1.2	-3.7	-2.8	-2.1	-2.9	-4.3	-0.9	-1.5	-0.8	-1.8	-0.9	0.7	-0.1	2.8	8.8	6.0			
AEO 1996			-0.5	-2.9	-2.2	-1.6	-2.5	-3.8	-0.2	-0.7	0.0	-1.0	0.1	1.8	0.8	3.8	9.7	6.9	8.2	12.0	
AEO 1997				-1.5	-1.1	0.1	-0.1	-1.0	2.7	2.3	3.3	2.2	3.1	5.1	4.4	7.4	13.3	10.1	11.4	15.0	
AEO 1998					0.1	1.8	2.0	1.0	5.3	4.9	5.6	4.3	5.5	7.7	7.2	10.7	17.4	14.5	16.0	20.0	
AEO 1999						-0.4	0.3	0.4	4.9	4.5	5.0	3.4	4.4	6.4	5.8	9.3	16.0	13.1	14.7	18.6	
AEO 2000							-0.3	-0.7	3.3	3.3	4.6	3.6	5.0	7.0	6.5	9.9	16.5	13.6	15.1	19.1	
AEO 2001								-1.2	3.9	4.6	6.3	5.4	6.7	8.9	8.6	12.2	19.2	16.5	18.4	22.6	
AEO 2002									2.2	3.4	6.2	5.6	7.3	9.7	9.3	13.0	20.3	18.0	20.6	25.3	
AEO 2003										-0.1	2.0	1.5	2.9	5.5	5.8	10.0	17.5	15.6	18.2	23.1	
AEO 2004											0.1	0.0	2.5	5.3	5.4	9.3	16.2	14.1	16.5	21.2	
AEO 2005												-0.3	1.6	4.0	4.2	8.6	15.9	13.6	15.8	20.2	
AEO 2006													0.2	1.6	2.0	5.7	12.4	10.1	12.0	16.4	
AEO 2007															1.1	1.0	4.5	11.1	8.7	10.5	14.6
AEO 2008																0.1	3.1	8.0	5.5	7.3	11.0
AEO 2009																	1.2	3.6	1.1	3.2	6.9
AEO 2010																		1.1	-1.4	1.1	5.2
AEO 2011																			-0.2	0.8	4.6
AEO 2012																				0.9	3.0
AEO 2013																					1.0
Average Absolute Percent Difference	0.7	0.3	0.7	2.6	1.6	1.3	1.5	1.9	2.7	2.5	3.2	2.5	3.1	4.8	4.2	7.2	12.8	9.8	11.2	14.4	

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 1.1.

Table 17. Total Delivered Residential Energy Consumption, Projected vs. Actual

Projected																				
quadrillion Btu																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.6	10.6	10.6	10.6	10.6
AEO 1995		11.0	10.8	10.8	10.8	10.8	10.8	10.8	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.9	10.9	10.9
AEO 1996			10.4	10.7	10.7	10.7	10.8	10.8	10.9	10.9	11.0	11.2	11.2	11.3	11.4	11.5	11.6	11.7	11.8	12.0
AEO 1997				11.1	10.9	11.1	11.1	11.2	11.2	11.2	11.3	11.4	11.5	11.5	11.6	11.7	11.8	11.9	12.0	12.1
AEO 1998					10.7	11.1	11.2	11.4	11.5	11.5	11.6	11.7	11.8	11.9	11.9	12.1	12.1	12.2	12.3	12.5
AEO 1999						10.5	11.1	11.3	11.3	11.4	11.5	11.5	11.6	11.6	11.7	11.8	11.9	12.0	12.1	12.3
AEO 2000							10.7	10.9	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	12.0	12.1
AEO 2001								10.8	11.2	11.4	11.6	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.7
AEO 2002									11.3	11.5	11.8	12.0	12.0	12.1	12.1	12.3	12.3	12.4	12.5	12.6
AEO 2003										11.1	11.6	11.8	11.9	12.0	12.2	12.3	12.4	12.5	12.6	12.7
AEO 2004											11.5	11.8	11.9	12.0	12.2	12.3	12.4	12.6	12.7	12.8
AEO 2005												11.5	11.7	11.8	12.0	12.3	12.5	12.7	12.8	13.0
AEO 2006													11.7	11.7	11.8	12.0	12.1	12.2	12.4	12.5
AEO 2007														11.3	11.8	12.0	12.1	12.2	12.3	12.5
AEO 2008															11.5	11.7	11.7	11.7	11.8	11.9
AEO 2009																11.6	11.6	11.6	11.4	11.4
AEO 2010																	11.2	11.3	11.1	11.1
AEO 2011																		11.4	11.1	11.1
AEO 2012																			11.6	11.6
AEO 2013																				10.7
Actual	10.5	10.4	10.5	11.2	10.7	10.3	10.7	11.2	11.0	11.2	11.6	11.4	11.5	10.8	11.4	11.6	11.3	11.5	11.4	10.6
Average Absolute Difference	0.2	0.3	0.2	0.4	0.1	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.8	0.5	0.4	0.7	0.6	0.8	1.5
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-2.2	-0.6	-1.3	-7.1	-3.0	1.3	-2.6	-7.3	-4.9	-7.1	-9.9	-8.3	-9.4	-2.7	-7.5	-9.4	-6.7	-8.0		
AEO 1995		5.2	2.9	-3.1	1.0	5.1	0.8	-4.3	-2.2	-4.5	-7.7	-6.2	-7.4	-0.7	-5.6	-7.5	-4.6	-5.9		
AEO 1996			-0.9	-4.5	-0.1	4.3	0.8	-3.5	-0.9	-2.5	-4.8	-2.2	-3.0	4.8	0.3	-0.8	2.4	1.6	4.2	12.8
AEO 1997				-0.9	2.3	7.7	3.8	-0.6	1.9	0.1	-2.4	0.1	-0.7	7.0	2.3	1.0	4.2	3.1	5.6	14.2
AEO 1998					0.1	8.1	4.8	1.2	4.5	2.7	0.2	2.8	1.9	10.0	5.2	3.9	7.2	6.2	8.8	17.7
AEO 1999						2.6	4.2	0.3	3.5	1.7	-1.1	1.3	0.2	7.9	3.1	1.9	5.1	4.1	6.8	15.6
AEO 2000							0.3	-2.5	0.5	-1.0	-3.3	-0.6	-1.3	6.6	2.0	0.8	4.2	3.3	5.6	14.0
AEO 2001								-3.9	1.8	1.5	-0.1	3.1	2.7	11.0	6.3	5.1	8.7	7.8	10.5	19.7
AEO 2002									2.6	2.7	1.8	4.8	3.9	12.0	7.0	5.5	8.7	7.5	10.1	19.0
AEO 2003										-0.9	0.3	3.6	3.1	11.8	7.1	5.9	9.3	8.2	10.6	19.4
AEO 2004											-0.6	3.2	2.7	11.5	7.1	6.0	9.8	9.1	11.8	20.8
AEO 2005												0.5	0.9	9.5	5.9	5.8	10.2	9.9	13.1	22.5
AEO 2006													1.2	8.9	3.9	3.1	6.9	6.3	9.0	17.9
AEO 2007														4.7	3.7	2.9	6.6	5.9	8.7	17.5
AEO 2008															0.8	0.4	3.6	1.2	3.6	11.9
AEO 2009																0.2	2.7	0.8	0.5	7.5
AEO 2010																	-0.9	-2.2	-2.2	4.7
AEO 2011																		-0.8	-2.2	4.5
AEO 2012																			2.2	9.4
AEO 2013																				1.2
Average Absolute Percent Difference	2.2	2.9	1.7	3.9	1.3	4.8	2.5	2.9	2.5	2.5	2.9	3.0	3.0	7.8	4.5	3.8	6.0	5.1	6.8	13.9

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 2.2.

Table 18. Total Delivered Commercial Energy Consumption, Projected vs. Actual

Projected																				
quadrillion Btu																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	6.8	6.9	6.9	7.0	7.1	7.1	7.2	7.2	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.6
AEO 1995		6.9	6.9	7.0	7.0	7.0	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.3	7.3	7.3	7.3	7.3
AEO 1996			7.1	7.2	7.2	7.3	7.3	7.4	7.4	7.5	7.6	7.6	7.7	7.7	7.8	7.9	8.0	8.0	8.1	8.2
AEO 1997				7.4	7.4	7.4	7.5	7.5	7.6	7.7	7.7	7.8	7.8	7.9	7.9	8.0	8.1	8.1	8.2	8.3
AEO 1998					7.5	7.6	7.7	7.8	7.9	8.0	8.0	8.1	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.8
AEO 1999						7.4	7.8	7.9	8.0	8.1	8.2	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	9.0
AEO 2000							7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4	8.5	8.5	8.7	8.7	8.8	8.9
AEO 2001								7.8	8.1	8.3	8.6	8.7	8.9	9.0	9.2	9.3	9.5	9.6	9.7	9.9
AEO 2002									8.2	8.4	8.7	8.9	9.0	9.2	9.4	9.6	9.7	9.9	10.1	10.3
AEO 2003										8.4	8.6	8.8	9.0	9.1	9.3	9.4	9.5	9.7	9.8	10.0
AEO 2004											8.4	8.5	8.8	9.0	9.2	9.4	9.5	9.7	9.9	10.1
AEO 2005												8.3	8.4	8.6	8.9	9.1	9.3	9.5	9.7	9.9
AEO 2006													8.4	8.3	8.5	8.7	8.8	9.0	9.2	9.4
AEO 2007														8.3	8.5	8.7	8.9	9.1	9.2	9.4
AEO 2008															8.6	8.7	8.5	8.6	8.8	8.9
AEO 2009																8.6	8.9	8.9	8.9	9.0
AEO 2010																	8.4	8.6	8.8	8.9
AEO 2011																		8.5	8.7	8.7
AEO 2012																			8.7	8.7
AEO 2013																				8.3
Actual	7.0	7.1	7.4	7.6	7.8	7.7	7.8	8.2	8.1	8.2	8.4	8.4	8.4	8.2	8.5	8.7	8.5	8.5	8.6	8.3
Average Absolute Difference	0.2	0.2	0.4	0.5	0.6	0.4	0.4	0.7	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.9
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-2.5	-3.7	-5.6	-8.1	-9.5	-7.2	-8.4	-12.3	-10.8	-11.2	-12.3	-12.5	-11.8	-8.9	-11.9	-13.3	-11.8	-11.7		
AEO 1995		-2.7	-6.2	-8.8	-10.4	-8.6	-9.8	-14.0	-13.0	-13.7	-15.0	-15.2	-14.7	-12.1	-14.9	-16.1	-14.2	-14.1		
AEO 1996			-4.0	-5.8	-7.3	-5.2	-6.2	-10.3	-8.6	-9.0	-9.9	-9.6	-8.5	-5.3	-7.9	-8.9	-6.6	-6.2	-6.0	-1.5
AEO 1997				-2.8	-5.7	-3.4	-4.3	-8.4	-6.7	-7.0	-7.9	-7.7	-6.7	-3.5	-6.3	-7.4	-5.2	-4.9	-4.7	-0.2
AEO 1998					-4.2	-0.7	-1.2	-5.2	-3.3	-3.4	-4.2	-3.6	-2.3	1.3	-1.4	-2.4	0.1	0.5	0.8	5.6
AEO 1999						-3.1	0.0	-3.8	-1.7	-1.8	-2.6	-2.2	-0.9	2.6	0.0	-0.8	1.9	2.6	3.1	8.2
AEO 2000							-1.4	-5.1	-2.7	-2.6	-3.4	-2.9	-1.4	2.2	-0.4	-1.2	1.7	2.2	2.7	7.7
AEO 2001								-5.4	-1.0	1.2	2.0	3.4	5.5	10.2	8.1	7.6	11.1	12.2	13.1	19.1
AEO 2002									0.4	1.8	3.3	5.4	7.7	12.7	10.8	10.5	14.4	15.9	17.2	23.9
AEO 2003										1.5	2.0	4.2	6.6	11.5	9.3	8.8	12.2	13.3	14.4	20.7
AEO 2004											0.6	1.1	4.2	9.7	8.2	8.1	12.1	13.9	15.3	21.6
AEO 2005												-1.2	-0.1	5.2	4.4	5.2	9.5	11.4	13.0	19.4
AEO 2006													0.4	1.6	-0.1	0.0	3.7	5.3	6.7	13.0
AEO 2007														1.9	0.3	1.0	4.6	5.9	7.5	13.8
AEO 2008															1.0	0.1	0.4	0.8	1.8	7.5
AEO 2009																-1.1	4.1	3.9	3.9	8.7
AEO 2010																	-1.1	0.6	1.9	7.1
AEO 2011																		-0.5	0.6	5.2
AEO 2012																			1.2	5.3
AEO 2013																				0.8
Average Absolute Percent Difference	2.5	3.2	5.2	6.4	7.4	4.7	4.5	8.1	5.3	5.3	5.7	5.7	5.5	6.3	5.7	5.8	6.8	7.0	6.7	10.5

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 2.3.

Table 19. Total Delivered Industrial Energy Consumption, Projected vs. Actual

Projected quadrillion Btu																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	25.4	25.9	26.3	26.7	27.0	27.1	26.8	26.6	26.9	27.2	27.7	28.1	28.3	28.7	29.1	29.4	29.7	30.0		
AEO 1995		26.2	26.3	26.5	27.0	27.3	26.9	26.6	26.8	27.1	27.5	27.9	28.2	28.4	28.7	29.0	29.3	29.6		
AEO 1996			26.5	26.6	27.3	27.5	26.9	26.5	26.7	26.9	27.2	27.6	27.9	28.2	28.3	28.5	28.7	28.9	29.2	29.4
AEO 1997				26.2	26.5	26.9	26.7	26.6	26.8	27.1	27.4	27.8	28.0	28.4	28.7	28.9	29.0	29.2	29.4	29.5
AEO 1998					27.2	27.5	27.2	26.9	27.1	27.5	27.7	27.9	28.3	28.7	29.0	29.3	29.7	29.9	30.1	30.4
AEO 1999						26.7	26.4	26.4	26.8	27.1	27.3	27.5	27.9	28.3	28.6	28.9	29.2	29.5	29.7	30.0
AEO 2000							25.8	25.5	25.7	26.0	26.5	26.9	27.4	27.8	28.1	28.3	28.5	28.8	29.0	29.2
AEO 2001								25.8	26.2	26.6	27.0	27.3	27.7	28.1	28.5	28.8	29.1	29.4	29.7	30.0
AEO 2002									24.5	25.8	26.6	27.0	27.5	28.0	28.5	28.8	29.2	29.7	30.2	30.6
AEO 2003										25.5	25.9	26.2	26.4	26.7	27.2	27.6	28.1	28.8	29.3	29.8
AEO 2004											24.5	24.9	25.7	26.1	26.5	26.9	27.1	27.5	27.9	28.3
AEO 2005												25.5	25.9	26.2	26.4	26.9	27.2	27.3	27.6	27.8
AEO 2006													25.2	25.4	26.1	26.3	26.5	26.7	27.0	27.2
AEO 2007														25.3	25.5	25.8	26.1	26.3	26.5	26.6
AEO 2008															25.2	25.8	25.3	25.8	26.2	26.2
AEO 2009																25.1	23.3	22.8	23.5	23.9
AEO 2010																	22.2	22.3	23.0	23.8
AEO 2011																		23.1	24.2	25.0
AEO 2012																			23.8	23.8
AEO 2013																				24.3
Actual	25.1	25.8	26.2	26.9	27.2	26.8	26.6	26.5	25.2	25.2	25.0	25.9	24.9	25.0	24.9	24.0	21.9	23.6	23.8	23.9
Average Absolute Difference	0.3	0.2	0.2	0.4	0.3	0.4	0.4	0.3	1.3	1.5	2.0	1.4	2.4	2.5	2.7	3.8	5.6	4.3	3.7	3.7
Projected vs. Actual percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	1.4	0.3	0.5	-1.0	-0.9	1.1	0.7	0.5	6.8	8.1	10.7	8.4	13.9	14.7	16.8	22.5	35.5	27.3		
AEO 1995		1.3	0.5	-1.6	-0.7	1.8	1.1	0.5	6.4	7.6	9.9	7.7	13.1	13.9	15.4	21.0	33.7	25.6		
AEO 1996			1.4	-1.2	0.3	2.7	1.3	0.1	5.9	7.0	9.0	6.6	12.1	12.7	13.7	18.8	31.2	22.8	22.3	23.3
AEO 1997				-2.7	-2.8	0.5	0.4	0.4	6.3	7.5	9.8	7.2	12.6	13.6	15.3	20.3	32.4	23.9	23.2	23.8
AEO 1998					0.1	2.6	2.5	1.7	7.7	9.1	10.6	7.9	13.7	14.8	16.6	22.3	35.3	26.9	26.4	27.2
AEO 1999						-0.1	-0.6	0.0	6.5	7.8	9.3	6.3	12.0	13.1	15.0	20.4	33.3	25.2	24.7	25.7
AEO 2000							-2.8	-3.5	2.0	3.3	6.0	4.0	10.0	11.1	12.9	18.1	30.2	22.2	21.5	22.5
AEO 2001								-2.5	3.9	5.6	8.2	5.5	11.1	12.3	14.4	20.0	32.8	24.9	24.6	25.6
AEO 2002									-2.6	2.6	6.5	4.4	10.5	11.9	14.4	19.9	33.3	25.9	26.9	28.1
AEO 2003										1.1	3.8	1.4	5.9	7.0	9.3	15.2	28.4	22.1	23.1	24.9
AEO 2004											-1.9	-3.7	3.3	4.7	6.6	11.9	23.8	16.8	17.1	18.5
AEO 2005												-1.5	4.1	5.0	6.2	11.9	24.1	16.0	15.7	16.4
AEO 2006													1.1	1.5	4.8	9.6	20.9	13.2	13.1	13.8
AEO 2007														1.4	2.7	7.6	19.0	11.7	11.2	11.6
AEO 2008															1.3	7.6	15.6	9.5	9.9	9.9
AEO 2009																4.6	6.5	-3.3	-1.5	0.2
AEO 2010																	1.5	-5.4	-3.5	-0.2
AEO 2011																		-2.0	1.5	4.9
AEO 2012																			-0.3	-0.3
AEO 2013																				1.7
Average Absolute Percent Difference	1.4	0.8	0.8	1.6	1.0	1.5	1.4	1.1	5.3	6.0	7.8	5.4	9.5	9.8	11.0	15.7	25.7	18.0	15.7	15.5

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 2.4. Comparisons through AEO 2002 have been adjusted for the AER 2001 revision to industrial energy consumption that was not incorporated in the earlier projections.

Table 20. Total Delivered Transportation Energy Consumption, Projected vs. Actual

Projected																				
quadrillion Btu																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	23.6	24.1	24.5	24.7	25.1	25.4	25.7	26.2	26.5	26.9	27.2	27.6	27.9	28.3	28.6	28.9	29.2	29.5		
AEO 1995		23.3	24.0	24.2	24.7	25.1	25.5	25.9	26.2	26.5	26.9	27.3	27.7	28.0	28.3	28.5	28.7	28.9		
AEO 1996			23.9	24.1	24.5	24.8	25.3	25.7	26.0	26.4	26.7	27.1	27.5	27.8	28.1	28.4	28.6	28.9	29.1	29.3
AEO 1997				24.7	25.3	25.9	26.4	27.0	27.5	28.0	28.5	28.9	29.4	29.8	30.3	30.6	30.9	31.1	31.3	31.5
AEO 1998					25.3	25.9	26.7	27.1	27.7	28.3	28.8	29.4	30.0	30.6	31.2	31.7	32.3	32.8	33.1	33.5
AEO 1999						25.4	26.0	27.0	27.6	28.2	28.8	29.4	30.0	30.6	31.2	31.7	32.2	32.8	33.1	33.5
AEO 2000							26.2	26.8	27.4	28.0	28.5	29.1	29.7	30.3	30.9	31.4	31.9	32.5	32.9	33.4
AEO 2001								26.8	27.5	28.3	28.8	29.4	30.0	30.6	31.2	31.8	32.3	32.9	33.4	33.9
AEO 2002									27.5	28.0	28.9	29.5	30.2	30.7	31.3	32.0	32.8	33.5	34.3	34.9
AEO 2003										27.2	27.7	28.3	28.9	29.7	30.5	31.4	32.3	33.2	34.0	34.8
AEO 2004											27.2	28.1	28.9	29.6	30.2	30.9	31.5	32.2	32.8	33.5
AEO 2005												27.8	28.4	29.0	29.7	30.4	31.2	31.8	32.5	33.1
AEO 2006													28.1	28.4	29.0	29.5	30.1	30.7	31.3	31.8
AEO 2007														28.4	28.7	29.0	29.4	29.9	30.3	30.8
AEO 2008															28.5	28.5	28.7	29.0	29.3	29.7
AEO 2009																27.9	27.5	28.0	28.5	28.7
AEO 2010																	27.0	27.3	27.9	28.1
AEO 2011																		27.4	27.6	27.9
AEO 2012																			27.1	27.3
AEO 2013																				26.7
Actual	22.7	23.3	23.8	24.4	24.7	25.2	25.9	26.5	26.2	26.8	26.9	27.8	28.3	28.8	29.1	27.8	27.1	27.5	27.2	26.7
Average Absolute Difference	0.9	0.4	0.3	0.3	0.4	0.4	0.4	0.5	0.9	0.9	1.2	0.9	1.0	1.1	1.2	2.4	3.3	3.2	3.9	4.6
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	3.9	3.2	2.7	1.3	1.4	0.6	-0.7	-1.3	1.0	0.2	1.3	-1.0	-1.4	-1.8	-1.5	4.1	7.9	7.3		
AEO 1995		-0.3	0.8	-0.9	-0.1	-0.4	-1.6	-2.4	-0.3	-1.1	0.0	-2.0	-2.3	-2.7	-2.8	2.6	6.2	5.2		
AEO 1996			0.4	-1.3	-1.0	-1.5	-2.5	-3.2	-0.7	-1.5	-0.5	-2.8	-2.9	-3.4	-3.2	2.2	5.8	4.9	7.1	9.9
AEO 1997				1.2	2.6	2.6	2.0	2.0	4.9	4.3	5.9	3.9	3.8	3.7	4.1	10.2	14.1	13.1	15.3	18.2
AEO 1998					2.6	2.5	2.9	2.4	5.7	5.6	7.4	5.6	5.9	6.4	7.2	14.2	19.3	19.1	21.9	25.8
AEO 1999						0.8	0.2	1.9	5.4	5.3	7.2	5.4	5.9	6.3	7.2	14.2	19.2	19.1	22.0	25.7
AEO 2000							1.3	1.2	4.4	4.3	6.0	4.6	5.0	5.3	6.3	13.1	18.0	18.1	21.2	25.2
AEO 2001								1.2	5.0	5.4	7.3	5.6	6.0	6.4	7.4	14.4	19.5	19.6	22.9	27.1
AEO 2002									4.8	4.6	7.6	6.1	6.7	6.8	7.9	15.4	21.2	21.8	26.1	31.0
AEO 2003										1.3	3.3	1.6	2.2	3.2	5.1	13.0	19.3	20.6	25.2	30.6
AEO 2004											1.2	0.8	2.2	3.0	4.1	11.2	16.5	17.0	20.8	25.6
AEO 2005												-0.2	0.5	0.9	2.3	9.6	15.2	15.8	19.6	24.1
AEO 2006													-0.8	-1.2	-0.1	6.4	11.3	11.6	15.2	19.2
AEO 2007														-1.5	-1.4	4.3	8.6	8.6	11.6	15.4
AEO 2008															-1.8	2.6	5.9	5.4	7.9	11.3
AEO 2009																0.6	1.6	1.8	5.0	7.6
AEO 2010																	-0.4	-0.8	2.6	5.6
AEO 2011																		-0.3	1.7	4.7
AEO 2012																			-0.2	2.5
AEO 2013																				0.3
Average Absolute Percent Difference	3.9	1.8	1.3	1.2	1.5	1.4	1.6	2.0	3.6	3.4	4.3	3.3	3.5	3.8	4.2	8.6	12.3	11.7	14.5	17.2

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 2.5.

Table 21. Total Energy Related Carbon Dioxide Emissions, Projected vs. Actual

Projected																				
million metric tons																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	5060	5130	5185	5240	5287	5335	5379	5438	5482	5529	5599	5658	5694	5738	5797	5874	5925	5984		
AEO 1995		5137	5174	5188	5262	5309	5361	5394	5441	5489	5551	5621	5680	5727	5775	5841	5889	5944		
AEO 1996			5182	5224	5295	5355	5417	5464	5525	5589	5660	5735	5812	5879	5925	5981	6030	6087	6142	6203
AEO 1997				5295	5381	5491	5586	5658	5715	5781	5863	5934	6009	6106	6184	6236	6268	6316	6365	6417
AEO 1998					5474	5621	5711	5784	5893	5957	6026	6098	6192	6292	6379	6465	6542	6612	6683	6752
AEO 1999						5522	5689	5810	5913	5976	6036	6084	6152	6244	6325	6418	6493	6563	6641	6703
AEO 2000							5573	5692	5777	5865	5971	6078	6172	6262	6345	6420	6480	6551	6610	6678
AEO 2001								5630	5781	5909	6023	6114	6197	6281	6387	6470	6541	6633	6709	6788
AEO 2002									5723	5808	5981	6095	6210	6323	6438	6530	6624	6727	6839	6937
AEO 2003										5633	5749	5856	5954	6095	6232	6360	6475	6602	6719	6828
AEO 2004											5743	5826	5986	6124	6251	6357	6453	6559	6657	6763
AEO 2005												5905	6023	6138	6274	6415	6533	6627	6721	6812
AEO 2006													5967	5978	6080	6182	6281	6365	6440	6536
AEO 2007														5940	5999	6059	6124	6214	6296	6369
AEO 2008															5977	5983	5978	6011	6087	6144
AEO 2009																5849	5699	5746	5803	5842
AEO 2010																	5507	5521	5643	5706
AEO 2011																		5643	5601	5622
AEO 2012																			5632	5570
AEO 2013																				5361
Actual	5189	5262	5323	5510	5584	5635	5688	5868	5761	5804	5855	5975	5999	5920	6023	5841	5424	5623	5498	5290
Average Absolute Difference	129	128	143	273	244	197	164	259	138	149	159	157	143	220	220	374	801	650	831	1045
Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	-2.5	-2.5	-2.6	-4.9	-5.3	-5.3	-5.4	-7.3	-4.8	-4.7	-4.4	-5.3	-5.1	-3.1	-3.8	0.6	9.2	6.4		
AEO 1995		-2.4	-2.8	-5.8	-5.8	-5.8	-5.8	-8.1	-5.5	-5.4	-5.2	-5.9	-5.3	-3.3	-4.1	0.0	8.6	5.7		
AEO 1996			-2.6	-5.2	-5.2	-5.0	-4.8	-6.9	-4.1	-3.7	-3.3	-4.0	-3.1	-0.7	-1.6	2.4	11.2	8.2	11.7	17.3
AEO 1997				-3.9	-3.6	-2.6	-1.8	-3.6	-0.8	-0.4	0.1	-0.7	0.2	3.2	2.7	6.8	15.5	12.3	15.8	21.3
AEO 1998					-2.0	-0.3	0.4	-1.4	2.3	2.6	2.9	2.1	3.2	6.3	5.9	10.7	20.6	17.6	21.6	27.6
AEO 1999						-2.0	0.0	-1.0	2.6	3.0	3.1	1.8	2.5	5.5	5.0	9.9	19.7	16.7	20.8	26.7
AEO 2000							-2.0	-3.0	0.3	1.0	2.0	1.7	2.9	5.8	5.3	9.9	19.5	16.5	20.2	26.2
AEO 2001								-4.1	0.3	1.8	2.9	2.3	3.3	6.1	6.0	10.8	20.6	18.0	22.0	28.3
AEO 2002								-0.7	0.1	2.2	2.0	3.5	6.8	6.9	11.8	22.1	19.6	24.4	31.1	
AEO 2003									-3.0	-1.8	-2.0	-0.8	3.0	3.5	8.9	19.4	17.4	22.2	29.1	
AEO 2004										-1.9	-2.5	-0.2	3.5	3.8	8.8	19.0	16.6	21.1	27.8	
AEO 2005											-1.2	0.4	3.7	4.2	9.8	20.4	17.8	22.2	28.8	
AEO 2006												-0.5	1.0	0.9	5.8	15.8	13.2	17.1	23.6	
AEO 2007														0.3	-0.4	3.7	12.9	10.5	14.5	20.4
AEO 2008															-0.8	2.4	10.2	6.9	10.7	16.2
AEO 2009																0.1	5.1	2.2	5.5	10.4
AEO 2010																	1.5	-1.8	2.6	7.9
AEO 2011																		0.4	1.9	6.3
AEO 2012																			2.4	5.3
AEO 2013																				1.3
Average Absolute Percent Difference	2.5	2.4	2.7	5.0	4.4	3.5	2.9	4.4	2.4	2.6	2.7	2.6	2.4	3.7	3.7	6.4	14.8	11.6	15.1	19.8

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 12.1.

Table 22. Energy Intensity, Projected vs. Actual

Projected																				
quadrillion Btu / \$Billion 2005 Chained GDP																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	11.2	11.1	11.0	10.8	10.7	10.5	10.4	10.3	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0
AEO 1995		10.9	10.8	10.6	10.4	10.3	10.1	10.0	9.9	9.8	9.6	9.5	9.4	9.3	9.2	9.1	9.1	9.0	8.9	8.9
AEO 1996			10.7	10.6	10.4	10.3	10.1	10.0	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.2	9.1	9.0	8.9	8.9
AEO 1997				10.3	10.3	10.2	10.1	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.2	9.1	9.0	8.9	8.9
AEO 1998					10.1	10.1	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.5	9.4	9.3	9.2	9.1	9.0	8.9
AEO 1999						9.6	9.7	9.7	9.7	9.6	9.4	9.3	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4
AEO 2000							9.4	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.7	8.6	8.5	8.4	8.3
AEO 2001								8.7	8.6	8.5	8.4	8.3	8.1	8.0	7.9	7.8	7.6	7.5	7.4	7.2
AEO 2002									8.8	8.8	8.8	8.7	8.6	8.5	8.3	8.2	8.0	7.8	7.7	7.5
AEO 2003										8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.8	7.7	7.6	7.4
AEO 2004											8.4	8.3	8.2	8.1	8.0	7.9	7.7	7.6	7.5	7.4
AEO 2005												8.2	8.1	8.0	7.8	7.8	7.7	7.5	7.4	7.3
AEO 2006													8.0	7.8	7.7	7.6	7.4	7.3	7.2	7.1
AEO 2007														7.8	7.8	7.6	7.5	7.4	7.3	7.1
AEO 2008															7.8	7.7	7.5	7.4	7.2	7.1
AEO 2009																7.6	7.7	7.6	7.4	7.3
AEO 2010																	7.5	7.5	7.4	7.2
AEO 2011																		7.4	7.3	7.1
AEO 2012																			7.4	7.3
AEO 2013																				7.1
Actual	10.3	10.1	10.0	10.0	9.6	9.2	9.0	8.8	8.5	8.5	8.3	8.2	7.9	7.7	7.7	7.5	7.4	7.5	7.3	7.0
Average Absolute Difference	1.0	0.9	0.8	0.6	0.8	0.9	1.0	1.0	1.1	0.9	0.9	0.8	0.9	1.0	0.8	0.8	0.8	0.6	0.5	0.7

Projected vs. Actual																				
percent difference																				
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AEO 1994	9.6	10.3	9.6	8.6	11.1	14.0	15.8	16.6	19.6	18.5	19.8	20.0	22.1	24.9	23.7	24.5	25.5	22.9		
AEO 1995		8.1	7.3	6.3	8.5	11.2	13.0	13.6	16.5	15.4	16.3	16.3	18.3	21.1	20.3	21.3	22.3	19.9		
AEO 1996			6.9	6.3	8.6	11.1	12.9	13.2	15.8	14.8	16.3	16.6	18.7	21.3	20.3	21.6	22.5	20.3	22.1	27.1
AEO 1997				3.4	6.7	10.1	12.2	12.8	15.7	15.0	16.5	16.7	18.8	21.6	20.5	21.4	22.4	20.0	21.7	26.6
AEO 1998					5.4	9.3	12.4	13.4	17.0	16.3	17.7	17.7	20.0	22.9	22.1	23.0	24.0	21.5	23.1	27.8
AEO 1999						4.3	8.4	10.2	13.9	13.0	13.9	13.5	15.1	17.4	16.1	16.7	17.2	14.4	16.0	20.5
AEO 2000							5.0	6.8	9.6	9.0	10.3	10.2	12.1	14.9	14.0	14.9	15.7	13.0	14.7	19.0
AEO 2001								-1.3	1.0	0.1	1.1	0.9	2.2	4.1	2.8	2.8	2.8	-0.1	0.4	3.3
AEO 2002									3.4	4.3	6.4	6.5	8.1	10.3	8.7	8.1	7.6	4.1	4.4	7.6
AEO 2003										1.5	3.1	2.6	4.2	6.6	5.5	5.6	5.5	2.4	3.2	6.4
AEO 2004											2.1	1.7	3.4	5.4	4.0	4.1	4.1	1.7	2.7	6.2
AEO 2005												-0.1	1.4	3.4	2.2	3.1	3.5	0.6	1.4	4.6
AEO 2006												0.7	1.5	0.6	0.4	0.4	0.4	-2.2	-1.5	1.7
AEO 2007														1.8	1.2	1.2	1.2	-1.5	-1.0	2.1
AEO 2008															1.4	2.5	1.4	-1.8	-1.5	1.4
AEO 2009																1.3	3.5	1.0	1.2	3.7
AEO 2010																	1.0	-0.1	0.7	3.4
AEO 2011																		-1.4	-0.7	1.3
AEO 2012																			0.8	3.8
AEO 2013																				1.1
Average Absolute Percent Difference	9.6	9.2	7.9	6.1	8.0	10.0	11.4	11.0	12.5	10.8	11.2	10.2	11.2	12.7	10.9	10.8	10.6	8.3	6.9	9.3

Sources: Projections: *Annual Energy Outlook*, Reference Case Projections, Various Editions.

Historical Data: U.S. Energy Information Administration, August 2013 Monthly Energy Review, DOE/EIA-0035(2013/08) (Washington, DC, August 27, 2013), Table 1.1, and Bureau of Economic Analysis, US Dept. of Commerce, July 2013.