U.S. Energy Information Administration

An Updated Annual Energy Outlook 2009 Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook

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This report updates the Reference Case presented in the Annual Energy Outlook 2009 based on recently enacted legislation and the changing macroeconomic environment.

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April 2009

Energy Information Administration
Office of Integrated Analysis and Forecasting
U.S. Department of Energy
Washington, DC 20585

Preface and Contacts

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1. Introduction

This paper reviews an updated *Annual Energy Outlook 2009* (*AEO2009*) reference case that will be used as the starting point for pending and future analyses of proposed energy and environmental legislation. The development of an updated reference case is motivated primarily by the enactment of the American Recovery and Reinvestment Act (ARRA) in mid-February 2009.[1] ARRA provides significant new Federal funding, loan guarantees, and tax credits to stimulate investments in energy efficiency and renewable energy. The reference case in the recently published *AEO2009*, which reflected laws and regulations in effect as of November 2008, does not include ARRA. The potential effects of some ARRA provisions are large enough that an analysis of certain aspects of proposed energy and environmental legislation that did not include ARRA in the reference case could provide misleading results.[2] Use of an updated reference case that includes ARRA as the baseline for future analyses of proposed changes in laws and regulations will help to avoid this problem.

The need to develop an updated reference case following the passage of ARRA also provides the Energy Information Administration (EIA) with an opportunity to update the macroeconomic outlook for the United States and global economies, which has been changing at an unusually rapid rate in recent months. Ordinarily, the macroeconomic assumptions for the *Annual Energy Outlook* reference case are updated annually, in the fall, based on economic projections provided by IHS Global Insight prior to development of the modeling runs presented in the *Annual Energy Outlook*. However, in an environment where the macroeconomic expectations are changing rapidly, it is appropriate to update the macroeconomic assumptions as the energy-specific provisions of ARRA are incorporated into EIA's National Energy Modeling System (NEMS).

Both the revised macroeconomic outlook and the energy-related provisions of ARRA impact the updated reference case. Therefore, the difference between the recently published *AEO2009* reference case and the updated reference case incorporating both ARRA and the updated economic forecast reflects more than the energy-related provisions in ARRA alone. Although future analyses will focus on the difference between the updated reference case and cases using that as a baseline and incorporating proposed changes in laws and regulations, users of EIA's projections may want to understand the relative roles of ARRA and the change in the macroeconomic outlook in driving the difference between the updated reference case and the one presented in *AEO2009*.

To provide insights into this question, this paper presents, in addition to the *AEO2009* reference case and the updated reference case, a "no-stimulus" case that reflects

[1] Several other changes including updates to near-term world oil prices, reinstatement of the Clean Air Interstate Rule, and final action on Corporate Average Fuel Economy standards for model year 2011 were also incorporated.

[2] For example, ARRA provisions to spur the use of renewable energy, including a 3-year extension of the production tax credit for eligible renewables, are important enough to impact the analysis of proposals for a renewable electricity standard.

projections without ARRA. The effect of ARRA alone, including its energy-related provisions and its stimulative impact on the economy, can be roughly estimated by comparing the no-stimulus case to the updated reference case.[3]

In addition to a different macroeconomic outlook, the updated reference case also reflects changes made in the parameters and/or structure of NEMS to reflect the specific energy-related provisions of ARRA. In some cases, for example, the extension of production tax credits for eligible renewables, it is relatively straightforward to incorporate ARRA provisions. In other cases, where the provisions in ARRA fund initiatives that break new ground, such as investment in "smart grid" technologies, modeling changes to reflect ARRA are inherently more speculative. For some ARRA policies, both the nature of the investments to be made, the implementation strategy for making those investments, and the effectiveness of the program in increasing energy efficiency or promoting greater use of renewable energy are all uncertain. In all cases, the modeling changes adopted reflect the understanding of EIA analysts of the intended level and implementation of funding, and estimates of impacts based on available literature and/or expert judgment.

The energy-specific provisions of ARRA that were represented in some fashion in NEMS include:

- Weatherization and assisted housing
- Energy efficiency and conservation block grant programs
- State energy programs
- Plug-in hybrid vehicle tax credit
- Electric vehicle tax credit
- Updated tax credits for renewables
- Loan guarantees for renewables and biofuels
- Support for carbon capture and storage (CCS)
- Smart grid expenditures.

Other major changes in NEMS to reflect changes in energy markets, laws, and regulations since the development of the *AEO2009* reference case include:

- Update of macroeconomic assumptions
- Update of near-term fuel price projections
- Temporary reinstatement of the Clean Air Interstate Rule (CAIR)
- Update of Corporate Average Fuel Economy (CAFE) standards.

The next section of the paper summarizes the combined impacts of changes to the reference case. It is followed by two sections that briefly describe the changes made to implement the updated reference case relative to the version of the reference case included in the *AEO2009* as published in March 2009. The Appendix to this report provides the standard set of *Annual Energy Outlook* tables in a format that facilitates

[3] The comparison is only a rough approximation, for reasons discussed below in the section on macroeconomic assumptions.

comparisons of the updated reference case to the no-stimulus case and the *AEO2009* reference case published in March 2009.

2. Summary of Impacts

The primary factors driving the differences between the published *AEO2009* reference case and the no-stimulus case are the updated macroeconomic forecast and the adjustments to the near-term world oil prices. However, other factors including the updated CAFE standards and the reintroduction of CAIR have impacts in specific sectors.

Relative to the published *AEO2009* reference case:

- Gross domestic product (GDP) growth rates are substantially lower in the short term; although the long-run growth rate is only lower by 0.1 percentage points over the 23 years from 2007 to 2030. Both investment and exports show the largest downward revisions due to higher projected inflation and interest rates and lower expected foreign growth. Most of the differences between the updated reference with ARRA and the no-stimulus case occur within the first 6 years of the projection period, during which the ARRA provisions dampen the depth of the economic downturn. However, by 2030 real GDP is higher in the no-stimulus case as a result of higher investment, lower interest rates, and lower inflation at the end of the period in the no-stimulus case.

- Industrial output growth is lower, as exports and investment show slower projected growth. Machinery and primary metals industrial growth slows as these sectors are impacted by exports and investment demand. The reduction in industrial output is due to revisions in forecasted final demands rather than any update in recent historical output. Most of the differences in industrial output growth occur between the original and revised baselines rather than between the updated reference case with ARRA and the no-stimulus case.

When comparing the no-stimulus case to the updated reference case with ARRA, the largest impacts are seen in the renewable electricity and buildings sectors. The key differences include:

Renewable Electricity

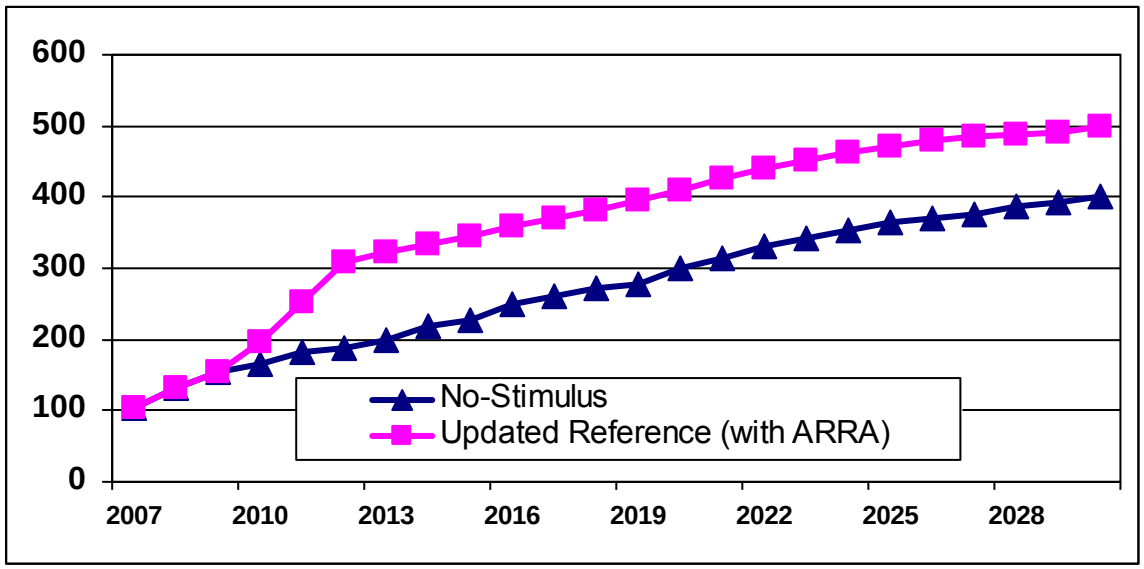
- A significant expansion in the use of renewable fuels for electricity generation, particularly in the near-term. The extension of key Federal tax credits and the new loan guarantee program in ARRA both stimulate increased renewable generation relative to the published *AEO2009* reference case and the no-stimulus case (Figure 1).

- By 2012, wind generation with the ARRA is expected to be more than twice that projected in the no-stimulus case, 201 billion kilowatthours compared to 86 billion kilowatthours and estimated generation of 53 billion kilowatthours in 2008. Although wind capacity growth is projected to slow significantly after the expiration of the Federal tax credits in 2012, by 2030 total installed wind capacity is projected to be 67 percent greater because of the ARRA-stimulated growth than in the no-stimulus case.

- Geothermal capacity is also projected to grow significantly more than in the no-stimulus case. Installed geothermal capacity in 2013 is 16 percent greater in the updated reference case with ARRA than in the no-stimulus case, 3.0 gigawatts, compared with 2.6 gigawatts.

- Projected additions of new biomass capacity are also accelerated by the renewable electricity provisions of the ARRA, and by 2030, projected installed capacity is 18 percent higher compared to the no-stimulus case.

Figure 1. Non-Hydroelectric Renewable Generation
(billion kilowatthours)



Source: National Energy Modeling System runs STIMULUS.D041409A and NOSTIMLS.D041409A.

Buildings

- Weatherization and efficiency improvements spurred by ARRA funding affect household heating and cooling energy use the most, reducing heating consumption by 1.7 percent in 2030 and cooling consumption by 3.4 percent in 2030.

- The provisions of ARRA lead to lower household energy bills. Over the 2009 to 2030 period, annual non-transportation household energy expenditures average $64 (real 2007 dollars) lower with ARRA, with a peak year difference of $98 (4.5 percent) lower in 2028.

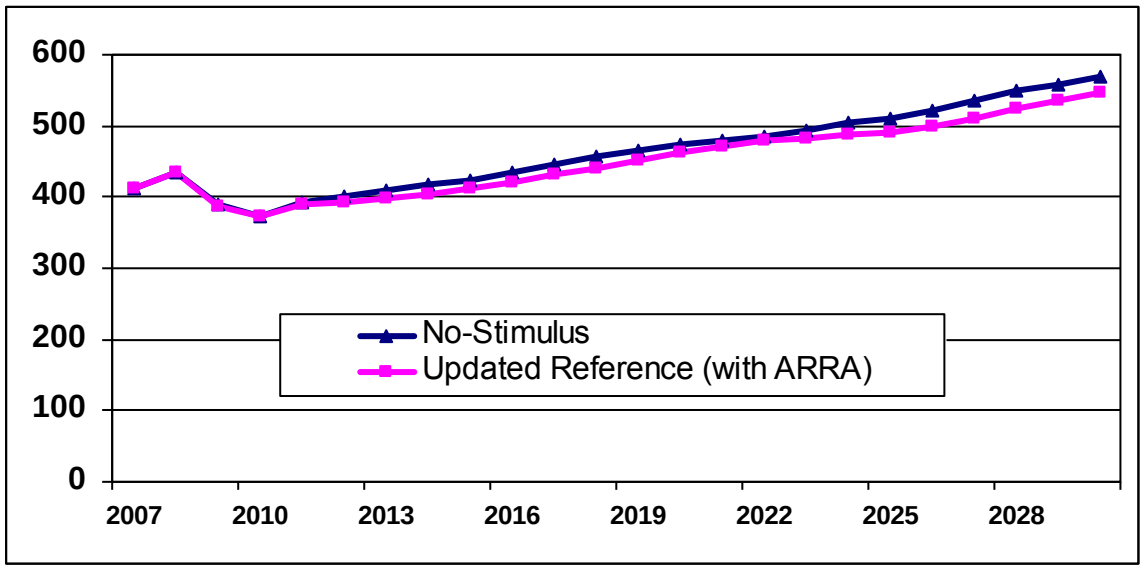
- ARRA funding for Federal buildings and the State Energy Program funds efficiency improvements for public buildings, reducing commercial fuel oil consumption by 3.0 percent in 2030.

- The ARRA funding and emphasis on renewable energy projects foster an increase in commercial sector photovoltaic capacity of 121 megawatts (15 percent) by 2011. The removal of the $4,000 cap on the investment tax credit for distributed wind turbines also provides an added boost, leading to a 120 megawatts (527 percent) increase in commercial sector wind capacity by 2016 in the updated reference case with ARRA.

- ARRA reduces commercial sector energy expenditures by an average of $5.7 billion (2.7 percent) annually (real 2007 dollars) between 2010 and 2030.

- Excluding transportation-related expenditures, total residential and commercial energy bills are $13 billion (2.6 percent) and $21 billion (3.8 percent) lower respectively in 2020 and 2030 (Figure 2).

Figure 2. Residential and Commercial Sector Energy Expenditures
(billion 2007 dollars)

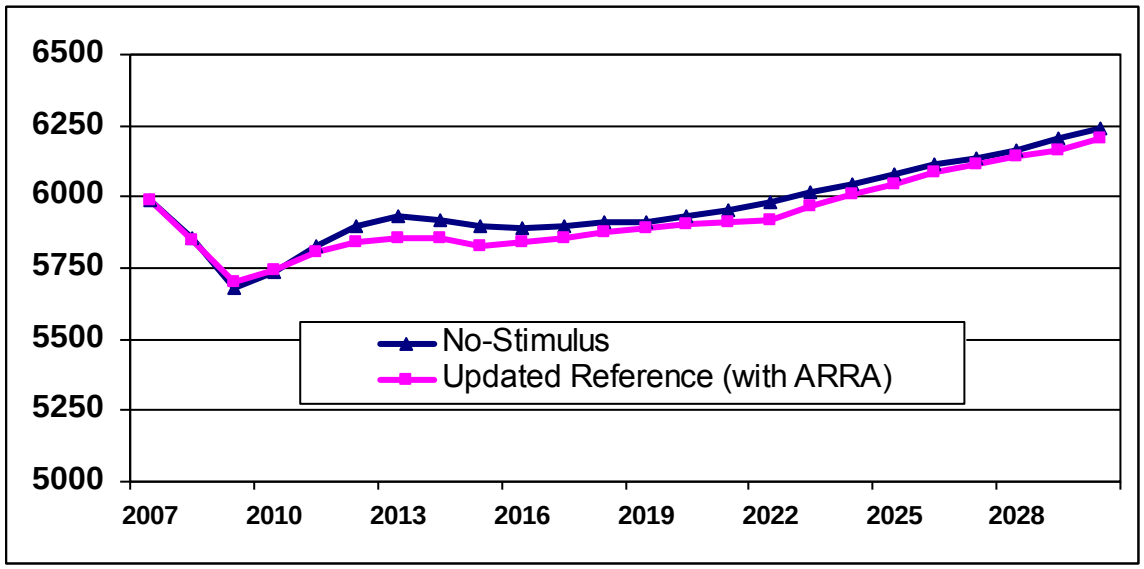


Note: Excludes transportation-related expenditures.
Source: National Energy Modeling System runs STIMULUS.D041409A and NOSTIMLS.D041409A.

Carbon Dioxide Emissions

- Energy-related carbon dioxide emissions in the updated reference case with ARRA are 1.3 percent lower than in the no-stimulus case in 2013 because of ARRA's impacts on renewable electricity generation and overall energy consumption (Figure 3). By 2030, they continue to be below the level in the no-stimulus case, but only by 0.6 percent. Again, the emission changes largely result from ARRA's energy-efficiency and renewable incentives that lead to reduced use of fossil fuels.

Figure 3. Energy-Related Carbon Dioxide Emissions
(million metric tons)



Source: National Energy Modeling System runs STIMULUS.D041409A and NOSTIMLS.D041409A.

3. Representing the Provisions of ARRA in the National Energy Modeling System

Weatherization, Assisted Housing, and Energy Efficiency and Conservation Block Grants

ARRA allocates a total of $9.45 billion to weatherize and/or increase the energy efficiency of low-income housing and assist local governments in implementing energy efficiency programs. In NEMS, this increase in funding results in the weatherization of about three million homes over the next 2 years. Energy savings estimates for the increased investment in weatherization for heating and cooling are based on Oak Ridge National Laboratory's analysis of the impacts of weatherization programs and their persistence for 20 years. The regional impact of the increase in funding is based on the Department of Energy's State allocation formula.[4]

State Energy Program

ARRA allocates $3.1 billion for States to implement or enhance energy efficiency programs. While the money can be spent on a variety of programs, the ARRA specifically mentions the adoption of building codes, specifically the International Energy Conservation Code (IECC) 2009. To account for the impact of this funding in NEMS, it is assumed that States will adopt and enforce the IECC 2006 code by 2011, while adopting and enforcing the IECC 2009 code by 2018**.** Likewise, States are assumed to adopt and enforce the ASHRAE 90.1-2007 standard by 2018 for non-residential construction. States and local governments are also assumed to use lower hurdle rates (specifically the 10-year Treasury bill rate) when purchasing energy-using equipment for government-owned facilities during years when ARRA funding is available.

Plug-in Hybrid and Electric Vehicle Tax Credits

ARRA contains several changes to the plug-in hybrid electric vehicle (PHEV) tax credit originally included in the Energy Improvement and Extension Act of 2008 that have been included in the updated reference case. For example, ARRA allows a $2,500 tax credit for the purchase of qualified PHEVs with a battery capacity of at least 4 kilowatthours. Starting at a battery capacity of 5 kilowatthours, PHEVs earn an additional $417 per kilowatthour battery credit up to a maximum of $5,000. The maximum total PHEV credit that can be earned is capped at $7,500 per vehicle. The PHEV tax credit eligibility and phase-out are specific to an individual vehicle manufacturer. The credits are phased out once cumulative sales of qualified vehicles reach 200,000 vehicles. The phase-out period begins two calendar quarters after the first date in which a manufacturer's sales reach the cumulative sales maximum after December 31, 2009. The credit is reduced to

[4] Oak Ridge National Laboratory, *Estimating the National Effects of the U.S. Department of Energy's Weatherization Assistance Program with State-Level Data: A Meta-evaluation Using Studies from 1993 to 2005*, September, 2005 and U.S. Department of Energy Website: http://apps1.eere.energy.gov/weatherization/recovery_act.cfm.

50 percent of the total value for the first two calendar quarters of the phase-out period and then to 25 percent for the third and forth calendar quarters before being phased out entirely thereafter. The credit applies to vehicles with a gross vehicle weight rating of less than 14,000 pounds.

AARA also allows a tax credit of 10 percent against the cost of a qualified plug-in all-electric vehicle with a battery capacity of at least 4 kilowatthours. This credit is subject to the same phase-out schedule as PHEVs.

Updated Tax Credits for Renewables

Prior to the passage of ARRA, the production tax credit (PTC) for certain renewable technologies was to expire on January 1, 2010. ARRA extended this date to January 1, 2013, for wind and January 1, 2014, for all other eligible renewable resources. In addition, ARRA allows companies to choose an investment tax credit (ITC) of 30 percent in lieu of the PTC and allows for a grant in lieu of this credit to be funded by the U.S. Treasury. Under most circumstances for most technologies, the full PTC would appear to be more valuable than the 30 percent ITC; however, the difference is often small. A recent report from the National Renewable Energy Laboratory[5] suggests that qualitative factors, such as the lack of partners with sufficient tax liability, may cause companies to favor the ITC grant option in the current economic environment. As a result, in this analysis it has been assumed that eligible renewable technologies will select the ITC grant option.

Loan Guarantees for Renewables, Biofuels, and Transmission Projects

ARRA provides $6 billion to pay the cost of guarantees for loans authorized by the Energy Policy Act of 2005. The purpose of these loan guarantees is to stimulate the deployment of conventional renewable and transmission technologies and innovative biofuels technologies. However, to qualify eligible projects must be under construction by September 30, 2011, meaning that longer-term projects that are not already progressing are unlikely to be able to qualify. The face value of the loans that may be guaranteed by this appropriation will depend on the subsidy costs assigned to the projects that are eventually selected. For example, if the average subsidy cost were 10 percent of the face value of the loans, the $6 billion appropriated would support loan guarantees on $60 billion worth of debt financing. This provision has been represented by lowering the cost of financing by 2 percentage points for all eligible renewable projects brought on by 2015. The 2015 date, 4 years after the September 30, 2011, start of construction cutoff date, was chosen to allow for the construction period associated with most renewable generating technologies.

A different approach was taken to represent the possible impacts on innovative biofuel projects. It was assumed that the availability of loan guarantees would allow certain identified projects to be built that would otherwise not proceed under the current financial

[5] National Renewable Energy Laboratory, PTC, ITC, or Cash Grant?, LBNL-1642E, NREL/TP-6A2-45359, March 2009, available at http://eetd.lbl.gov/ea/emp.

climate facing the industry. In the *AEO2009* reference case, with assumptions developed prior to the current economic downturn, domestic cellulosic ethanol production was projected to reach 150 million gallons in 2012. However, a review of projects proceeding towards construction, suggests that, without assistance, only about 74 million gallons of domestic cellulosic ethanol production capacity will be built by 2012, because financing for these developers has become extremely difficult to obtain and some projects have been canceled. With the loan guarantees arising from the stimulus package, it is assumed that the 2012 production rises back to about 110 to 170 million gallons, with additional capacity additions occurring under the same financing structure as in *AEO2009*.

Support for CCS

ARRA provides $3.4 billion for additional research and development on fossil energy technologies. A portion of this funding is expected to be used to fund projects under the Clean Coal Power Initiative program, focusing on projects that capture and sequester greenhouse gases. To reflect the impact of this provision, the updated reference case assumes that an additional 1 gigawatt of coal capacity with CCS will be stimulated by 2017.

Smart Grid Expenditures

ARRA provides $4.5 billion for smart grid demonstration projects. While somewhat difficult to define, smart grid technologies generally include a wide array of measurement, communications, and control equipment employed throughout the transmission and distribution system that will enable real-time monitoring of the production, flow, and use of power from generator to consumer. Among other things, once deployed, these smart grid technologies are expected to enable more efficient use of the transmission and distribution grid, lower line losses, facilitate greater use of renewables, and provide information to utilities and their customers that will lead to greater investment in energy efficiency and reduced peak load demands. The funds provided will not fund a widespread implementation of smart grid technologies. In July 2004[6] the Electric Power Research Institute (EPRI) estimated that full deployment would cost $165 billion. However, successful deployment of several demonstration projects could stimulate more rapid investment than would otherwise occur.

Several changes were made throughout the NEMS to represent the impacts of the smart grid funding provided in ARRA. In the electricity module, it was assumed that line losses would fall slightly, peak loads would fall as customers shifted their usage patterns, and customers would be more responsive to pricing signals. In a 2008 report, EPRI[7] estimated that smart grid technologies could reduce line losses in 2030 by between 3.5 and 28.0 billion kilowatthours.[8] Historically, line losses, expressed as the percentage of

[6] Electric Power Research Institute, Palo Alto, California, *Power Delivery System of the Future, A Preliminary Estimate of Costs and Benefits*, 1011001, July 2004.
[7] Electric Power Research Institute, Palo Alto, California, *The Green Grid, Energy Savings and Carbon Emissions Reductions Enabled by a Smart Grid*, 1016905, June 2008.
[8] These figures are relative to the baseline projections from the *Annual Energy Outlook 2008*.

electricity lost, have been falling for many years as utilities make investments to replace aging or failing equipment. This trend was incorporated in the *AEO2009* reference case, which assumed that line losses would fall from roughly 6.9 percent in 2008 to 5.7 percent in 2030. In the updated reference case, it is assumed that the Federal expenditures on smart grid technologies will stimulate further efforts to lower losses, reducing them by an additional 10 to15 billion kilowatthours, roughly one-third the maximum EPRI estimate.

In the same EPRI report, it was also estimated that smart grid technologies had the potential to reduce peak demand by 5 percent in 2030 through the increased deployment of demand response programs. In the updated reference case, it is assumed that the Federal expenditures on smart grid technologies will stimulate efforts that reduce peak demand in 2030 by 1 percent from what they otherwise would be. Load is shifted to off-peak hours, so net energy consumed remains largely constant.

It was also assumed that increased investment in smart grid technologies, particularly smart meters on buildings and homes, would make consumers more responsive to electricity price changes. To represent this, the price elasticity of demand for residential and commercial electricity was increased for certain uses.

4. Other Key Changes in the Updated Reference Case

Update of Macroeconomic Assumptions

The published *AEO2009* reference case used November 2008 macroeconomic projections from IHS Global Insight as a starting point. However, since November, all macroeconomic forecasts have reduced their short-run economic growth projections and delayed the beginning of the eventual economic recovery. For example, November's forecast showed real GDP declining by 1.3 percent in 2009, before rebounding to 2.2 percent growth in 2010. In the same forecast, IHS Global Insight expected job losses between 350,000 and 400,000 per month for November and December. However, actual employment losses were much larger, exceeding 500,000 per month, with a total of 1.9 million jobs lost in the final 4 months of 2008. As a result, forecasts of real GDP growth in the first half of 2009 have worsened and the eventual economic recovery, i.e. first positive growth expected, is projected to starter in the last quarter of 2009 rather than the second quarter of 2009, as had been expected in earlier analyses.

The updated reference case discussed in this paper is based on a February 2009 macroeconomic projection through 2030 that was also provided by IHS Global Insight. This projection, which was developed before final enactment of ARRA, reflects a stimulus package that differs in minor respects from the package that was ultimately enacted, but the differences are not material for the purposes of this analysis. For example, the total stimulus package is $780 billion instead of $787 billion. In Global Insight's February 2009 forecast, annual real GDP growth rates are -2.7 percent and 2.0 percent for 2009 and 2010, respectively.

The no-stimulus case presented in this paper was developed based on a contemporaneous simulation from IHS Global Insight under the counterfactual assumption that no economic stimulus program was enacted. The simulation provided by HIS Global Insight for this case runs through 2019 only. EIA staff extended that simulation through 2030 using the exogenous variables, such as population, exchange rates, trading countries' GDP, marginal tax rates, full-employment unemployment rate, some categories of government expenditures and depreciation rates, from the simulation with ARRA that runs through 2030.

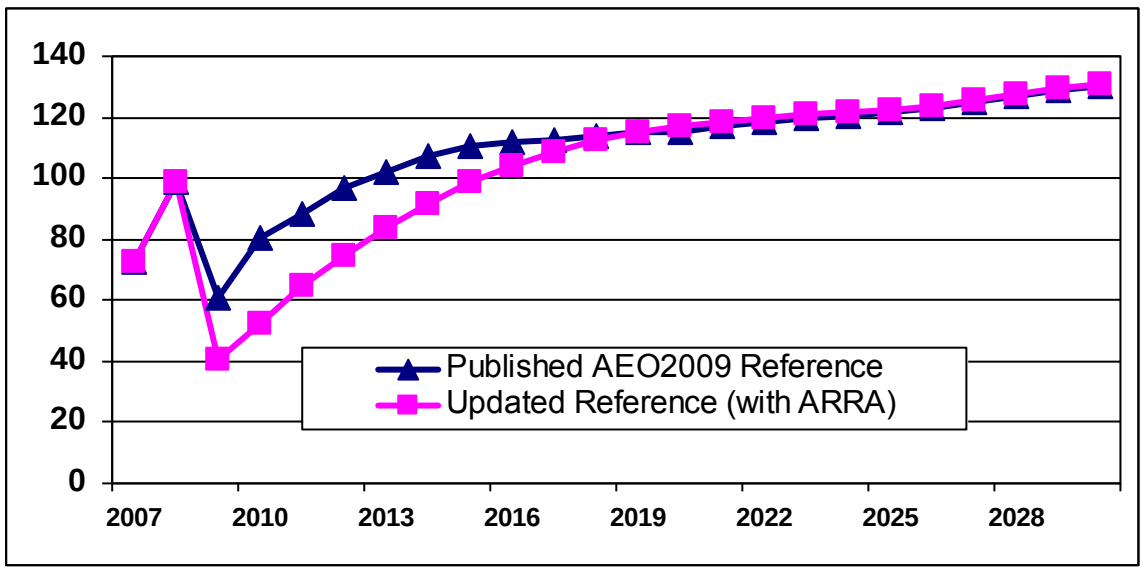
The March 2009 control forecast has reduced short-term growth considerably—2009 growth at -3.7 percent compared to the February 2009 estimate of -2.7; 2010 growth at 1.4 percent compared to the February estimate of 2.2 percent—although the difference in the lower growth was due to a sharp revision in fourth quarter 2008 growth as well as larger-than-expected employment losses and not due to the differences in the stimulus package. Global Insight's monthly control's forecast horizon is typically 10 years; however, four times per year the horizon is extended out 30 years. Since February's forecast horizon is 30 years, EIA staff used the February forecast as a revised macroeconomic baseline.

Update of Near-Term Oil Price Projections

The global financial crisis and recession combined with the provisions of ARRA lead to lower expected world oil price assumptions in the near- and mid-term. Furthermore, increased pessimism regarding the depth, duration, and scope of the current global recession, the substantial decline in labor and material costs in the oil industry, which will lower the costs of developing new oil production capacity, and the expectation that certain provisions of the ARRA will lower petroleum product demand in the United States all point to lower oil prices over the next decade than previously expected.

However, the global economy is expected to begin recovering in 2010 and return to long-term trend growth in subsequent years. Therefore, the oil price assumptions after 2020 are the same as those in the previously published *AEO2009* reference case (Figure 4).

Figure 4. World Oil Prices
(2007 dollars per barrel)



Source: National Energy Modeling System runs AEO2009.D120908A and STIMULUS.D041409A.

Update of CAFE Standards

Light-duty vehicle fuel economy standards assumed in the *AEO2009* reference case reflect those proposed by the National Highway Traffic Safety Administration through model year 2015. For model years 2016 through 2020, fuel economy standards are assumed to increase in stringency to achieve 35 miles per gallon on average for the new light-duty vehicle fleet in 2020, after which the standards remain constant. The updated reference case incorporates the fuel economy standards enacted for model year 2011 and assumes updated standards for model years 2012 through 2020 that reflect adjustments based on revisions in energy prices. As a result, projected new vehicle fuel economy in

the updated reference case is slightly lower (less than 1 mile per gallon) for model years 2011 through 2015.

Temporary Reinstatement of CAIR

The *AEO2009* reference case did not include the sulfur dioxide and nitrogen oxide cap-and-trade programs for power plants called for in the Environmental Protection Agency's CAIR. The Circuit Court for the District of Columbia had vacated CAIR in a ruling issued on July 11, 2008, and, as a result, it was not included in the *AEO2009*. However, the Court temporarily reinstated the rule in a December 23, 2008, ruling and it is represented in the updated reference case presented here.

Appendix

Comparison Tables

Table A1. Total Energy Supply and Disposition Summary
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Production										
Crude Oil and Lease Condensate	10.73	11.98	11.98	12.19	12.71	12.57	14.06	15.62	15.47	15.96
Natural Gas Plant Liquids	2.41	2.54	2.53	2.58	2.47	2.45	2.57	2.59	2.53	2.61
Dry Natural Gas	19.84	20.66	20.58	20.95	21.15	20.13	22.08	24.13	23.67	24.26
Coal[1]	23.50	23.32	23.32	24.21	24.16	24.56	24.43	24.88	25.42	26.93
Nuclear Power	8.41	8.45	8.45	8.45	9.34	9.14	8.99	9.69	9.29	9.47
Hydropower	2.46	2.67	2.67	2.67	2.95	2.95	2.95	2.97	2.96	2.97
Biomass[2]	3.23	4.04	4.05	4.20	5.89	6.19	6.52	8.14	8.58	8.25
Other Renewable Energy[3]	0.97	1.59	1.91	1.54	1.76	2.97	1.74	2.12	3.08	2.19
Other[4]	0.94	0.70	0.70	0.85	0.96	0.93	1.07	1.07	1.01	1.15
Total	**72.49**	**75.95**	**76.19**	**77.64**	**81.39**	**81.88**	**84.41**	**91.21**	**92.02**	**93.79**
Imports										
Crude Oil	21.90	18.07	18.23	17.76	17.58	17.54	16.09	15.56	15.25	15.39
Liquid Fuels and Other Petroleum[5]	6.97	5.88	6.01	5.59	5.79	5.76	5.67	6.07	5.95	6.33
Natural Gas	4.72	3.17	3.10	3.27	3.30	3.39	3.37	2.74	2.35	2.58
Other Imports[6]	0.99	0.88	0.88	0.89	1.45	1.48	1.19	1.42	1.45	1.35
Total	**34.59**	**27.99**	**28.22**	**27.51**	**28.11**	**28.17**	**26.31**	**25.78**	**25.01**	**25.65**
Exports										
Petroleum[7]	2.84	2.70	2.68	2.56	2.96	2.96	2.90	3.28	3.30	3.17
Natural Gas	0.83	0.69	0.69	0.70	1.44	1.47	1.44	1.89	1.93	1.87
Coal	1.51	1.80	1.80	2.05	1.37	1.37	1.33	0.92	0.99	1.08
Total	**5.18**	**5.19**	**5.17**	**5.31**	**5.77**	**5.79**	**5.66**	**6.08**	**6.22**	**6.12**
Discrepancy[8]	**0.00**	**0.20**	**0.18**	**-0.02**	**-0.40**	**-0.42**	**-0.39**	**-0.15**	**-0.16**	**-0.25**
Consumption										
Liquid Fuels and Other Petroleum[9]	40.75	37.91	38.21	37.89	38.57	38.67	38.93	40.57	40.30	41.60
Natural Gas	23.70	22.63	22.50	23.20	23.09	22.13	24.09	25.04	24.15	25.04
Coal[10]	22.74	22.27	22.27	22.91	24.04	24.36	23.98	25.02	25.42	26.56
Nuclear Power	8.41	8.45	8.45	8.45	9.34	9.14	8.99	9.69	9.29	9.47
Hydropower	2.46	2.67	2.67	2.67	2.95	2.95	2.95	2.97	2.96	2.97
Biomass[11]	2.62	2.83	2.84	2.99	4.21	4.28	4.58	5.42	5.60	5.51
Other Renewable Energy[3]	0.97	1.59	1.91	1.54	1.76	2.97	1.74	2.12	3.08	2.19
Other[12]	0.23	0.21	0.21	0.21	0.18	0.18	0.19	0.22	0.16	0.22
Total	**101.90**	**98.56**	**99.06**	**99.85**	**104.13**	**104.67**	**105.44**	**111.06**	**110.96**	**113.56**
Prices (2007 dollars per unit)										
Petroleum (dollars per barrel)										
Imported Low Sulfur Light Crude Oil Price[13]	72.33	52.13	52.16	80.16	116.56	116.79	115.45	130.50	130.92	130.43
Imported Crude Oil Price[13]	63.83	49.05	48.99	77.56	114.35	114.50	112.05	124.45	124.36	124.60
Natural Gas (dollars per million Btu)										
Price at Henry Hub	6.96	5.14	5.11	6.66	7.53	7.47	7.43	8.91	8.83	9.25
Wellhead Price[14]	6.22	4.55	4.51	5.88	6.65	6.60	6.56	7.87	7.80	8.17
Natural Gas (dollars per thousand cubic feet)										
Wellhead Price[14]	6.39	4.67	4.64	6.05	6.84	6.79	6.75	8.09	8.01	8.40
Coal (dollars per ton)										
Minemouth Price[15]	25.82	26.59	26.65	29.45	27.44	27.38	27.90	27.91	27.87	29.10
Coal (dollars per million Btu)										
Minemouth Price[15]	1.27	1.31	1.32	1.44	1.37	1.37	1.39	1.40	1.40	1.46
Average Delivered Price[16]	1.86	1.93	1.94	1.99	2.02	2.02	1.99	2.09	2.09	2.08
Average Electricity Price (cents per kilowatthour)	9.1	8.3	8.3	9.0	9.6	9.3	9.4	10.4	10.1	10.4

Table A1. Total Energy Supply and Disposition Summary (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Prices (nominal dollars per unit)										
Petroleum (dollars per barrel)										
Imported Low Sulfur Light Crude Oil Price[13]	72.33	54.00	54.13	84.42	146.20	148.30	149.14	202.00	207.19	189.10
Imported Crude Oil Price[13]	63.83	50.81	50.84	81.69	143.44	145.39	144.74	192.63	196.81	180.66
Natural Gas (dollars per million Btu)										
Price at Henry Hub	6.96	5.33	5.30	7.01	9.44	9.49	9.60	13.79	13.97	13.42
Wellhead Price[14]	6.22	4.71	4.68	6.19	8.34	8.38	8.48	12.18	12.34	11.85
Natural Gas (dollars per thousand cubic feet)										
Wellhead Price[14]	6.39	4.84	4.81	6.37	8.58	8.62	8.72	12.52	12.68	12.18
Coal (dollars per ton)										
Minemouth Price[15]	25.82	27.55	27.65	31.02	34.42	34.77	36.04	43.20	44.10	42.20
Coal (dollars per million Btu)										
Minemouth Price[15]	1.27	1.36	1.37	1.52	1.72	1.74	1.80	2.17	2.22	2.11
Average Delivered Price[16]	1.86	2.00	2.01	2.10	2.53	2.57	2.57	3.24	3.30	3.01
Average Electricity Price (cents per kilowatthour)	9.1	8.6	8.6	9.5	12.0	11.8	12.2	16.2	15.9	15.1

[1]Includes waste coal.
[2]Includes grid-connected electricity from wood and waste; biomass, such as corn, used for liquid fuels production; and non-electric energy demand from wood. Refer to Table A17 for details.
[3]Includes grid-connected electricity from landfill gas; biogenic municipal waste; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems. Excludes electricity imports using renewable sources and nonmarketed renewable energy. See Table A17 for selected nonmarketed residential and commercial renewable energy.
[4]Includes non-biogenic municipal waste, liquid hydrogen, methanol, and some domestic inputs to refineries.
[5]Includes imports of finished petroleum products, unfinished oils, alcohols, ethers, blending components, and renewable fuels such as ethanol.
[6]Includes coal, coal coke (net), and electricity (net).
[7]Includes crude oil and petroleum products.
[8]Balancing item. Includes unaccounted for supply, losses, gains, and net storage withdrawals.
[9]Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen. Refer to Table A17 for detailed renewable liquid fuels consumption.
[10]Excludes coal converted to coal-based synthetic liquids.
[11]Includes grid-connected electricity from wood and wood waste, non-electric energy from wood, and biofuels heat and coproducts used in the production of liquid fuels, but excludes the energy content of the liquid fuels.
[12]Includes non-biogenic municipal waste and net electricity imports.
[13]Weighted average price delivered to U.S. refiners.
[14]Represents lower 48 onshore and offshore supplies.
[15]Includes reported prices for both open market and captive mines.
[16]Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 natural gas supply values and natural gas wellhead price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 coal minemouth and delivered coal prices: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 petroleum supply values: EIA, *Petroleum Supply Annual 2007,* DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). 2007 low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2007 coal values: *Quarterly Coal Report, October-December 2007*, DOE/EIA-0121(2007/4Q) (Washington, DC, March 2008). Other 2007 values: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A2. Energy Consumption by Sector and Source
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Energy Consumption										
Residential										
Liquefied Petroleum Gases	0.50	0.51	0.50	0.49	0.49	0.48	0.49	0.52	0.51	0.52
Kerosene	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07
Distillate Fuel Oil	0.78	0.77	0.77	0.72	0.60	0.59	0.60	0.51	0.50	0.51
Liquid Fuels and Other Petroleum Subtotal	1.36	1.36	1.35	1.29	1.16	1.14	1.16	1.10	1.09	1.10
Natural Gas	4.86	5.11	5.06	4.92	5.03	4.99	5.10	5.06	5.01	5.07
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Renewable Energy[1]	0.43	0.42	0.42	0.43	0.48	0.48	0.48	0.50	0.50	0.50
Electricity	4.75	4.81	4.79	4.80	5.10	5.04	5.12	5.78	5.67	5.69
Delivered Energy	**11.40**	**11.72**	**11.62**	**11.44**	**11.78**	**11.66**	**11.86**	**12.46**	**12.28**	**12.36**
Electricity Related Losses	10.36	10.46	10.43	10.44	10.89	10.82	10.81	11.87	11.73	11.69
Total	**21.76**	**22.18**	**22.05**	**21.88**	**22.67**	**22.48**	**22.67**	**24.33**	**24.01**	**24.05**
Commercial										
Liquefied Petroleum Gases	0.09	0.10	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10
Motor Gasoline[2]	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Kerosene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Distillate Fuel Oil	0.41	0.39	0.38	0.36	0.34	0.33	0.34	0.34	0.33	0.34
Residual Fuel Oil	0.08	0.09	0.09	0.07	0.08	0.08	0.08	0.08	0.08	0.08
Liquid Fuels and Other Petroleum Subtotal	0.63	0.63	0.62	0.58	0.58	0.57	0.58	0.59	0.58	0.59
Natural Gas	3.10	3.27	3.27	3.14	3.33	3.32	3.34	3.59	3.53	3.54
Coal	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Renewable Energy[3]	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Electricity	4.58	4.79	4.78	4.75	5.51	5.53	5.57	6.36	6.36	6.31
Delivered Energy	**8.50**	**8.87**	**8.86**	**8.66**	**9.61**	**9.61**	**9.69**	**10.73**	**10.66**	**10.62**
Electricity Related Losses	9.99	10.41	10.43	10.35	11.76	11.87	11.77	13.07	13.16	12.96
Total	**18.49**	**19.29**	**19.29**	**19.01**	**21.37**	**21.49**	**21.46**	**23.80**	**23.82**	**23.59**
Industrial[4]										
Liquefied Petroleum Gases	2.35	1.79	1.86	2.02	1.69	1.72	1.79	1.41	1.44	1.66
Motor Gasoline[2]	0.36	0.33	0.34	0.34	0.34	0.34	0.34	0.36	0.35	0.36
Distillate Fuel Oil	1.28	1.14	1.15	1.17	1.19	1.20	1.18	1.24	1.23	1.23
Residual Fuel Oil	0.25	0.17	0.17	0.15	0.16	0.16	0.16	0.15	0.15	0.16
Petrochemical Feedstocks	1.30	1.01	1.05	1.01	1.04	1.05	1.13	0.85	0.88	1.05
Other Petroleum[5]	4.42	3.81	3.77	3.74	3.77	3.77	3.72	3.78	3.70	3.84
Liquid Fuels and Other Petroleum Subtotal	9.96	8.25	8.34	8.42	8.20	8.24	8.32	7.79	7.76	8.30
Natural Gas	6.82	5.99	6.16	6.77	6.48	6.54	6.84	6.54	6.52	7.04
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and Plant Fuel[6]	1.20	1.28	1.28	1.27	1.29	1.23	1.33	1.46	1.44	1.47
Natural Gas Subtotal	8.02	7.27	7.44	8.05	7.77	7.77	8.17	7.99	7.96	8.51
Metallurgical Coal	0.60	0.50	0.51	0.55	0.48	0.49	0.49	0.38	0.39	0.48
Other Industrial Coal	1.21	0.99	1.00	1.24	1.10	1.10	1.15	1.09	1.09	1.16
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.12	0.25	0.24	0.25	0.46	0.58
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.01	0.01	-0.00	-0.00	0.01
Coal Subtotal	1.83	1.50	1.52	1.80	1.70	1.85	1.89	1.73	1.93	2.23
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Renewable Energy[7]	1.64	1.55	1.57	1.48	1.64	1.68	1.64	1.92	1.94	1.96
Electricity	3.43	3.14	3.16	3.34	3.45	3.48	3.48	3.38	3.37	3.67
Delivered Energy	**25.29**	**22.46**	**22.79**	**23.83**	**23.78**	**24.24**	**24.73**	**24.50**	**24.89**	**26.33**
Electricity Related Losses	7.48	6.82	6.89	7.27	7.37	7.48	7.36	6.95	6.96	7.55
Total	**32.77**	**29.28**	**29.68**	**31.10**	**31.15**	**31.72**	**32.09**	**31.44**	**31.86**	**33.87**

Table A2. Energy Consumption by Sector and Source (Continued)

(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Transportation										
Liquefied Petroleum Gases	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
E85[8]	0.00	0.00	0.00	0.00	0.51	0.75	0.85	1.62	1.75	2.18
Motor Gasoline[2]	17.29	17.05	17.11	16.93	15.86	15.68	15.56	15.09	14.87	14.49
Jet Fuel[9]	3.23	2.94	3.01	3.00	3.36	3.38	3.42	4.08	4.02	4.12
Distillate Fuel Oil[10]	6.48	6.01	6.11	6.13	7.21	7.24	7.36	8.56	8.52	9.09
Residual Fuel Oil	0.95	0.89	0.89	0.86	0.97	0.97	0.98	0.99	0.99	1.00
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Petroleum[11]	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18
Liquid Fuels and Other Petroleum Subtotal	28.14	27.07	27.30	27.11	28.10	28.20	28.36	30.54	30.34	31.09
Pipeline Fuel Natural Gas	0.64	0.64	0.63	0.64	0.67	0.62	0.69	0.71	0.70	0.72
Compressed Natural Gas	0.02	0.03	0.03	0.03	0.06	0.07	0.07	0.08	0.08	0.09
Electricity	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.05	0.05	0.05
Delivered Energy	**28.82**	**27.76**	**27.99**	**27.81**	**28.87**	**28.92**	**29.15**	**31.38**	**31.17**	**31.94**
Electricity Related Losses	0.05	0.05	0.05	0.05	0.07	0.07	0.07	0.10	0.10	0.10
Total	**28.87**	**27.81**	**28.04**	**27.86**	**28.93**	**28.99**	**29.22**	**31.48**	**31.27**	**32.05**
Delivered Energy Consumption for All Sectors										
Liquefied Petroleum Gases	2.95	2.40	2.47	2.61	2.29	2.31	2.39	2.05	2.07	2.29
E85[8]	0.00	0.00	0.00	0.00	0.51	0.75	0.85	1.62	1.75	2.18
Motor Gasoline[2]	17.70	17.43	17.49	17.33	16.25	16.07	15.95	15.50	15.27	14.90
Jet Fuel[9]	3.23	2.94	3.01	3.00	3.36	3.38	3.42	4.08	4.02	4.12
Kerosene	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Distillate Fuel Oil	8.94	8.31	8.41	8.38	9.35	9.35	9.49	10.65	10.58	11.17
Residual Fuel Oil	1.28	1.15	1.16	1.07	1.21	1.21	1.22	1.23	1.23	1.25
Petrochemical Feedstocks	1.30	1.01	1.05	1.01	1.04	1.05	1.13	0.85	0.88	1.05
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Petroleum[12]	4.57	3.96	3.92	3.89	3.93	3.93	3.89	3.94	3.87	4.01
Liquid Fuels and Other Petroleum Subtotal	40.08	37.31	37.61	37.40	38.04	38.15	38.42	40.02	39.77	41.07
Natural Gas	14.80	14.40	14.52	14.86	14.91	14.92	15.34	15.27	15.13	15.73
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and Plant Fuel[6]	1.20	1.28	1.28	1.27	1.29	1.23	1.33	1.46	1.44	1.47
Pipeline Natural Gas	0.64	0.64	0.63	0.64	0.67	0.62	0.69	0.71	0.70	0.72
Natural Gas Subtotal	16.64	16.32	16.43	16.78	16.87	16.77	17.36	17.44	17.27	17.92
Metallurgical Coal	0.60	0.50	0.51	0.55	0.48	0.49	0.49	0.38	0.39	0.48
Other Coal	1.28	1.06	1.07	1.31	1.17	1.18	1.22	1.16	1.16	1.23
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.12	0.25	0.24	0.25	0.46	0.58
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.01	0.01	-0.00	-0.00	0.01
Coal Subtotal	1.91	1.57	1.60	1.87	1.78	1.93	1.97	1.80	2.01	2.30
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Renewable Energy[13]	2.19	2.09	2.11	2.03	2.24	2.28	2.24	2.54	2.57	2.58
Electricity	12.79	12.75	12.75	12.91	14.09	14.08	14.20	15.57	15.45	15.73
Delivered Energy	**74.01**	**70.81**	**71.26**	**71.74**	**74.04**	**74.43**	**75.42**	**79.06**	**79.00**	**81.26**
Electricity Related Losses	27.88	27.75	27.80	28.11	30.09	30.24	30.02	31.99	31.96	32.30
Total	**101.90**	**98.56**	**99.06**	**99.85**	**104.13**	**104.67**	**105.44**	**111.05**	**110.95**	**113.56**
Electric Power[14]										
Distillate Fuel Oil	0.11	0.11	0.11	0.11	0.13	0.13	0.12	0.13	0.13	0.13
Residual Fuel Oil	0.56	0.49	0.49	0.38	0.40	0.39	0.39	0.41	0.40	0.40
Liquid Fuels and Other Petroleum Subtotal	0.67	0.60	0.60	0.49	0.53	0.52	0.51	0.54	0.53	0.53
Natural Gas	7.06	6.30	6.07	6.42	6.21	5.36	6.73	7.60	6.88	7.12
Steam Coal	20.84	20.70	20.67	21.03	22.26	22.43	22.01	23.22	23.42	24.25
Nuclear Power	8.41	8.45	8.45	8.45	9.34	9.14	8.99	9.69	9.29	9.47
Renewable Energy[15]	3.45	4.24	4.56	4.42	5.65	6.69	5.79	6.28	7.13	6.43
Electricity Imports	0.11	0.08	0.08	0.08	0.05	0.05	0.06	0.09	0.03	0.10
Total[16]	**40.67**	**40.50**	**40.55**	**41.02**	**44.17**	**44.32**	**44.22**	**47.56**	**47.40**	**48.03**

Table A2. Energy Consumption by Sector and Source (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Total Energy Consumption										
Liquefied Petroleum Gases	2.95	2.40	2.47	2.61	2.29	2.31	2.39	2.05	2.07	2.29
E85[8]	0.00	0.00	0.00	0.00	0.51	0.75	0.85	1.62	1.75	2.18
Motor Gasoline[2]	17.70	17.43	17.49	17.33	16.25	16.07	15.95	15.50	15.27	14.90
Jet Fuel[9]	3.23	2.94	3.01	3.00	3.36	3.38	3.42	4.08	4.02	4.12
Kerosene	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Distillate Fuel Oil	9.05	8.42	8.52	8.49	9.47	9.48	9.61	10.78	10.71	11.31
Residual Fuel Oil	1.84	1.64	1.65	1.45	1.61	1.60	1.60	1.64	1.63	1.64
Petrochemical Feedstocks	1.30	1.01	1.05	1.01	1.04	1.05	1.13	0.85	0.88	1.05
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Petroleum[12]	4.57	3.96	3.92	3.89	3.93	3.93	3.89	3.94	3.87	4.01
Liquid Fuels and Other Petroleum Subtotal	40.75	37.91	38.21	37.89	38.57	38.67	38.93	40.57	40.30	41.60
Natural Gas	21.86	20.71	20.59	21.29	21.12	20.28	22.07	22.87	22.02	22.86
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lease and Plant Fuel[6]	1.20	1.28	1.28	1.27	1.29	1.23	1.33	1.46	1.44	1.47
Pipeline Natural Gas	0.64	0.64	0.63	0.64	0.67	0.62	0.69	0.71	0.70	0.72
Natural Gas Subtotal	23.70	22.63	22.50	23.20	23.09	22.13	24.09	25.04	24.15	25.04
Metallurgical Coal	0.60	0.50	0.51	0.55	0.48	0.49	0.49	0.38	0.39	0.48
Other Coal	22.12	21.76	21.75	22.34	23.43	23.61	23.24	24.38	24.58	25.49
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.12	0.25	0.24	0.25	0.46	0.58
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.01	0.01	-0.00	-0.00	0.01
Coal Subtotal	22.74	22.27	22.27	22.91	24.04	24.36	23.98	25.02	25.42	26.56
Nuclear Power	8.41	8.45	8.45	8.45	9.34	9.14	8.99	9.69	9.29	9.47
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Renewable Energy[17]	5.65	6.34	6.66	6.45	7.89	8.97	8.03	8.83	9.70	9.01
Electricity Imports	0.11	0.08	0.08	0.08	0.05	0.05	0.06	0.09	0.03	0.10
Total	**101.90**	**98.56**	**99.06**	**99.85**	**104.13**	**104.67**	**105.44**	**111.05**	**110.95**	**113.56**
Energy Use and Related Statistics										
Delivered Energy Use	74.01	70.81	71.26	71.74	74.04	74.43	75.42	79.06	79.00	81.26
Total Energy Use	101.90	98.56	99.06	99.85	104.13	104.67	105.44	111.05	110.95	113.56
Ethanol Consumed in Motor Gasoline and E85	0.56	1.09	1.09	1.08	1.45	1.59	1.66	2.15	2.22	2.47
Population (millions)	302.41	311.37	311.37	311.37	342.55	342.55	342.61	374.67	374.67	375.12
Gross Domestic Product (billion 2000 dollars)	11524	11373	11599	11779	15315	15398	15524	20193	19875	20114
Carbon Dioxide Emissions (million metric tons)	5990.8	5736.7	5745.9	5801.4	5931.2	5904.6	5982.3	6243.6	6207.1	6414.4

[1]Includes wood used for residential heating. See Table A4 and/or Table A17 for estimates of nonmarketed renewable energy consumption for geothermal heat pumps, solar thermal hot water heating, and solar photovoltaic electricity generation.
[2]Includes ethanol (blends of 10 percent or less) and ethers blended into gasoline.
[3]Excludes ethanol. Includes commercial sector consumption of wood and wood waste, landfill gas, municipal waste, and other biomass for combined heat and power. See Table A5 and/or Table A17 for estimates of nonmarketed renewable energy consumption for solar thermal hot water heating and solar photovoltaic electricity generation.
[4]Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.
[5]Includes petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.
[6]Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.
[7]Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources. Excludes ethanol blends (10 percent or less) in motor gasoline.
[8]E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.
[9]Includes only kerosene type.
[10]Diesel fuel for on- and off- road use.
[11]Includes aviation gasoline and lubricants.
[12]Includes unfinished oils, natural gasoline, motor gasoline blending components, aviation gasoline, lubricants, still gas, asphalt, road oil, petroleum coke, and miscellaneous petroleum products.
[13]Includes electricity generated for sale to the grid and for own use from renewable sources, and non-electric energy from renewable sources. Excludes ethanol and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal hot water heaters.
[14]Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.
[15]Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes net electricity imports.
[16]Includes non-biogenic municipal waste not included above.
[17]Includes conventional hydroelectric, geothermal, wood and wood waste, biogenic municipal waste, other biomass, wind, photovoltaic, and solar thermal sources. Excludes ethanol, net electricity imports, and nonmarketed renewable energy consumption for geothermal heat pumps, buildings photovoltaic systems, and solar thermal hot water heaters.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 consumption based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 population and gross domestic product: IHS Global Insight Industry and Employment models, November 2008. 2007 carbon dioxide emissions: EIA, *Emissions of Greenhouse Gases in the United States 2007,* DOE/EIA-0573(2007) (Washington, DC, December 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A3. Energy Prices by Sector and Source
(2007 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Residential										
Liquefied Petroleum Gases	24.97	20.71	20.70	25.86	33.29	33.34	32.88	35.15	35.16	35.11
Distillate Fuel Oil	19.66	13.34	13.35	18.69	24.41	24.64	24.10	26.81	26.77	26.67
Natural Gas	12.69	11.20	11.19	12.09	12.62	12.56	12.50	14.05	13.96	14.31
Electricity	31.18	28.61	28.62	30.89	33.24	32.43	32.72	35.71	34.49	35.84
Commercial										
Liquefied Petroleum Gases	23.04	17.56	17.54	22.69	30.02	30.07	29.60	31.82	31.84	31.77
Distillate Fuel Oil	16.05	10.73	10.76	16.15	22.29	22.61	22.11	24.68	24.65	24.69
Residual Fuel Oil	10.31	5.79	5.80	10.97	16.85	16.86	16.68	17.89	17.87	17.98
Natural Gas	10.99	9.51	9.47	10.55	11.16	11.08	11.13	12.64	12.52	12.96
Electricity	28.03	24.82	24.84	27.29	28.60	27.62	28.15	30.80	29.65	31.01
Industrial[1]										
Liquefied Petroleum Gases	23.38	16.55	16.64	21.84	29.12	29.17	28.78	30.83	30.85	30.99
Distillate Fuel Oil	16.82	10.58	10.62	16.01	22.68	23.06	22.56	25.08	25.07	25.19
Residual Fuel Oil	10.60	9.82	9.84	15.38	20.71	20.73	20.94	22.16	22.08	22.73
Natural Gas[2]	7.52	5.56	5.50	6.91	7.56	7.47	7.48	8.80	8.69	9.07
Metallurgical Coal	3.61	3.98	4.00	4.37	4.39	4.39	4.40	4.46	4.43	4.41
Other Industrial Coal	2.43	2.39	2.39	2.54	2.57	2.57	2.53	2.67	2.66	2.67
Coal to Liquids	- -	- -	- -	- -	1.15	1.35	1.23	1.24	1.38	1.36
Electricity	18.62	16.82	16.83	18.72	19.54	18.80	19.06	21.46	20.56	21.59
Transportation										
Liquefied Petroleum Gases[3]	25.01	20.55	20.53	25.67	33.05	33.10	32.62	34.80	34.82	34.77
E85[4]	26.82	18.83	18.87	25.47	29.04	29.59	29.30	31.24	30.94	30.10
Motor Gasoline[5]	22.98	17.67	17.71	23.47	29.60	29.94	29.75	31.82	31.58	32.10
Jet Fuel[6]	16.10	10.37	10.41	16.03	22.23	22.36	22.15	24.69	24.67	24.63
Diesel Fuel (distillate fuel oil)[7]	20.91	14.56	14.63	20.05	26.19	26.59	26.04	28.36	28.34	28.59
Residual Fuel Oil	9.44	6.62	6.59	12.10	17.13	17.16	17.46	18.84	18.84	19.65
Natural Gas[8]	15.50	13.56	13.50	14.90	15.05	14.95	14.90	15.85	15.70	16.24
Electricity	30.78	27.29	27.33	30.34	30.26	29.14	29.48	33.63	32.48	34.15
Electric Power[9]										
Distillate Fuel Oil	14.77	9.78	9.79	15.09	20.77	20.98	20.45	23.23	23.21	23.11
Residual Fuel Oil	8.57	6.67	6.68	13.21	17.51	17.54	18.55	19.12	19.25	20.67
Natural Gas	7.02	5.21	5.13	6.59	7.17	7.03	7.15	8.45	8.34	8.70
Steam Coal	1.78	1.86	1.86	1.89	1.95	1.96	1.92	2.04	2.04	2.04
Average Price to All Users[10]										
Liquefied Petroleum Gases	18.53	16.34	16.30	20.96	28.10	28.11	27.56	30.09	30.05	29.77
E85[4]	26.82	18.83	18.87	25.47	29.04	29.59	29.30	31.24	30.94	30.10
Motor Gasoline[5]	22.82	17.67	17.71	23.47	29.60	29.94	29.75	31.81	31.58	32.10
Jet Fuel	16.10	10.37	10.41	16.03	22.23	22.36	22.15	24.69	24.67	24.63
Distillate Fuel Oil	19.93	13.54	13.60	18.98	25.41	25.80	25.28	27.74	27.71	27.94
Residual Fuel Oil	9.37	6.92	6.91	12.66	17.56	17.59	18.03	19.16	19.19	20.12
Natural Gas	9.01	7.48	7.43	8.56	9.24	9.22	9.11	10.47	10.42	10.75
Metallurgical Coal	3.61	3.98	4.00	4.37	4.39	4.39	4.40	4.46	4.43	4.41
Other Coal	1.82	1.89	1.89	1.93	1.98	1.99	1.95	2.07	2.08	2.07
Coal to Liquids	- -	- -	- -	- -	1.15	1.35	1.23	1.24	1.38	1.36
Electricity	26.68	24.29	24.28	26.42	28.07	27.16	27.57	30.60	29.46	30.56
Non-Renewable Energy Expenditures by Sector (billion 2007 dollars)										
Residential	238.40	216.77	215.29	235.27	265.77	258.45	263.30	311.47	298.90	310.03
Commercial	172.89	157.29	157.14	172.88	208.45	203.26	207.76	256.52	247.76	256.75
Industrial	226.89	149.11	151.70	204.25	239.19	239.07	242.68	249.46	245.87	276.26
Transportation	596.77	426.50	430.91	580.97	755.06	759.33	752.82	849.01	835.36	853.25
Total Non-Renewable Expenditures	1234.95	949.68	955.05	1193.36	1468.47	1460.11	1466.55	1666.46	1627.90	1696.29
Transportation Renewable Expenditures	0.04	0.05	0.05	0.07	14.68	22.10	24.83	50.60	54.18	65.71
Total Expenditures	**1234.99**	**949.73**	**955.10**	**1193.43**	**1483.15**	**1482.21**	**1491.38**	**1717.06**	**1682.08**	**1762.00**

Table A3. Energy Prices by Sector and Source (Continued)
(Nominal Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Residential										
Liquefied Petroleum Gases	24.97	21.45	21.48	27.24	41.76	42.33	42.47	54.41	55.65	50.90
Distillate Fuel Oil	19.66	13.81	13.85	19.68	30.61	31.29	31.14	41.50	42.37	38.67
Natural Gas	12.69	11.60	11.61	12.74	15.83	15.95	16.14	21.75	22.10	20.75
Electricity	31.18	29.64	29.70	32.53	41.70	41.18	42.26	55.28	54.58	51.96
Commercial										
Liquefied Petroleum Gases	23.04	18.18	18.20	23.89	37.66	38.19	38.24	49.25	50.38	46.06
Distillate Fuel Oil	16.05	11.11	11.17	17.01	27.96	28.71	28.56	38.20	39.01	35.80
Residual Fuel Oil	10.31	6.00	6.02	11.55	21.14	21.40	21.55	27.69	28.29	26.07
Natural Gas	10.99	9.85	9.82	11.11	14.00	14.07	14.37	19.56	19.81	18.78
Electricity	28.03	25.71	25.77	28.74	35.87	35.07	36.37	47.67	46.93	44.96
Industrial[1]										
Liquefied Petroleum Gases	23.38	17.14	17.27	23.00	36.53	37.04	37.17	47.72	48.82	44.93
Distillate Fuel Oil	16.82	10.96	11.03	16.86	28.44	29.28	29.14	38.83	39.68	36.52
Residual Fuel Oil	10.60	10.17	10.22	16.20	25.98	26.32	27.05	34.29	34.94	32.95
Natural Gas[2]	7.52	5.76	5.71	7.27	9.49	9.48	9.66	13.62	13.76	13.16
Metallurgical Coal	3.61	4.12	4.15	4.60	5.51	5.57	5.69	6.91	7.01	6.40
Other Industrial Coal	2.43	2.47	2.48	2.67	3.23	3.26	3.27	4.14	4.22	3.88
Coal to Liquids	- -	- -	- -	- -	1.44	1.71	1.59	1.91	2.18	1.98
Electricity	18.62	17.43	17.46	19.72	24.51	23.88	24.63	33.22	32.54	31.30
Transportation										
Liquefied Petroleum Gases[3]	25.01	21.28	21.31	27.04	41.46	42.02	42.13	53.87	55.10	50.41
E85[4]	26.82	19.50	19.58	26.83	36.43	37.58	37.85	48.36	48.96	43.63
Motor Gasoline[5]	22.98	18.30	18.38	24.72	37.13	38.02	38.43	49.25	49.98	46.54
Jet Fuel[6]	16.10	10.74	10.81	16.89	27.88	28.39	28.62	38.22	39.04	35.70
Diesel Fuel (distillate fuel oil)[7]	20.91	15.09	15.18	21.12	32.86	33.76	33.63	43.90	44.85	41.44
Residual Fuel Oil	9.44	6.85	6.83	12.74	21.48	21.79	22.56	29.16	29.81	28.49
Natural Gas[8]	15.50	14.04	14.01	15.69	18.87	18.98	19.24	24.53	24.84	23.55
Electricity	30.78	28.27	28.36	31.95	37.95	37.01	38.09	52.05	51.41	49.51
Electric Power[9]										
Distillate Fuel Oil	14.77	10.13	10.16	15.89	26.05	26.64	26.42	35.96	36.73	33.51
Residual Fuel Oil	8.57	6.91	6.93	13.91	21.97	22.28	23.97	29.59	30.46	29.97
Natural Gas	7.02	5.40	5.32	6.94	9.00	8.92	9.24	13.08	13.20	12.61
Steam Coal	1.78	1.93	1.93	1.99	2.44	2.48	2.48	3.16	3.24	2.95

Table A3. Energy Prices by Sector and Source (Continued)
(Nominal Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Average Price to All Users[10]										
Liquefied Petroleum Gases	18.53	16.93	16.91	22.07	35.25	35.70	35.61	46.58	47.55	43.16
E85[4]	26.82	19.50	19.58	26.83	36.43	37.58	37.85	48.36	48.96	43.63
Motor Gasoline[5]	22.82	18.30	18.38	24.71	37.13	38.01	38.43	49.24	49.98	46.54
Jet Fuel	16.10	10.74	10.81	16.89	27.88	28.39	28.62	38.22	39.04	35.70
Distillate Fuel Oil	19.93	14.03	14.11	19.99	31.87	32.76	32.65	42.93	43.86	40.51
Residual Fuel Oil	9.37	7.17	7.18	13.34	22.02	22.34	23.29	29.66	30.37	29.16
Natural Gas	9.01	7.75	7.71	9.01	11.59	11.71	11.77	16.21	16.49	15.58
Metallurgical Coal	3.61	4.12	4.15	4.60	5.51	5.57	5.69	6.91	7.01	6.40
Other Coal	1.82	1.95	1.96	2.04	2.48	2.52	2.52	3.21	3.28	3.00
Coal to Liquids	- -	- -	- -	- -	1.44	1.71	1.59	1.91	2.18	1.98
Electricity	26.68	25.16	25.19	27.82	35.20	34.49	35.62	47.37	46.62	44.31
Non-Renewable Energy Expenditures by Sector (billion nominal dollars)										
Residential	238.40	224.54	223.41	247.78	333.37	328.18	340.12	482.10	473.03	449.49
Commercial	172.89	162.93	163.07	182.07	261.47	258.11	268.38	397.05	392.10	372.25
Industrial	226.89	154.46	157.43	215.12	300.03	303.57	313.49	386.11	389.11	400.54
Transportation	596.77	441.79	447.16	611.87	947.12	964.21	972.48	1314.12	1322.01	1237.08
Total Non-Renewable Expenditures	1234.95	983.72	991.08	1256.84	1841.99	1854.06	1894.47	2579.39	2576.26	2459.36
Transportation Renewable Expenditures	0.04	0.06	0.06	0.07	18.42	28.06	32.08	78.32	85.74	95.27
Total Expenditures	**1234.99**	**983.78**	**991.13**	**1256.91**	**1860.40**	**1882.13**	**1926.55**	**2657.71**	**2662.00**	**2554.63**

[1]Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.
[2]Excludes use for lease and plant fuel.
[3]Includes Federal and State taxes while excluding county and local taxes.
[4]E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.
[5]Sales weighted-average price for all grades. Includes Federal, State and local taxes.
[6]Kerosene-type jet fuel. Includes Federal and State taxes while excluding county and local taxes.
[7]Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.
[8]Compressed natural gas used as a vehicle fuel. Includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.
[9]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[10]Weighted averages of end-use fuel prices are derived from the prices shown in each sector and the corresponding sectoral consumption.
Btu = British thermal unit.
- - = Not applicable.
Note: Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 prices for motor gasoline, distillate fuel oil, and jet fuel are based on prices in the Energy Information Administration (EIA), *Petroleum Marketing Annual 2007*, DOE/EIA-0487(2007) (Washington, DC, August 2008). 2007 residential and commercial natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 industrial natural gas delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2006*, DOE/EIA-0131(2006) (Washington, DC, October 2007) and the *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 transportation sector natural gas delivered prices are model results. 2007 electric power sector natural gas prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2007 and April 2008, Table 4.13.B. 2007 coal prices based on: EIA, *Quarterly Coal Report, October-December 2007*, DOE/EIA-0121(2007/4Q) (Washington, DC, March 2008) and EIA, AEO2009 National Energy Modeling System run NOSTIMLS.D041409A. 2007 electricity prices: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report.
Projections: EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A4. Residential Sector Key Indicators and Consumption
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Key Indicators										
Households (millions)										
Single-Family	81.73	83.38	83.37	83.61	93.49	93.45	93.63	101.98	101.85	101.57
Multifamily	25.17	25.92	25.96	25.97	29.06	29.06	29.17	32.94	32.85	32.47
Mobile Homes	6.85	6.70	6.71	6.73	7.02	7.02	6.96	7.40	7.38	7.09
Total	**113.74**	**116.01**	**116.05**	**116.30**	**129.57**	**129.53**	**129.76**	**142.32**	**142.08**	**141.14**
Average House Square Footage	**1663**	**1699**	**1699**	**1701**	**1834**	**1834**	**1834**	**1934**	**1934**	**1934**
Energy Intensity										
(million Btu per household)										
Delivered Energy Consumption	100.2	101.0	100.1	98.4	90.9	90.0	91.4	87.5	86.4	87.6
Total Energy Consumption	191.3	191.2	190.0	188.2	175.0	173.5	174.7	171.0	169.0	170.4
(thousand Btu per square foot)										
Delivered Energy Consumption	60.3	59.4	58.9	57.8	49.6	49.1	49.8	45.3	44.7	45.3
Total Energy Consumption	115.1	112.5	111.8	110.6	95.4	94.6	95.2	88.4	87.4	88.1
Delivered Energy Consumption by Fuel										
Electricity										
Space Heating	0.28	0.30	0.30	0.29	0.30	0.30	0.31	0.31	0.31	0.31
Space Cooling	0.88	0.83	0.82	0.86	0.95	0.93	0.97	1.10	1.06	1.10
Water Heating	0.42	0.43	0.42	0.42	0.50	0.49	0.48	0.50	0.50	0.50
Refrigeration	0.39	0.37	0.37	0.37	0.39	0.39	0.39	0.43	0.43	0.42
Cooking	0.11	0.11	0.11	0.11	0.13	0.13	0.13	0.14	0.14	0.14
Clothes Dryers	0.27	0.27	0.27	0.27	0.28	0.28	0.29	0.31	0.31	0.32
Freezers	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09
Lighting	0.73	0.72	0.72	0.71	0.55	0.55	0.55	0.53	0.53	0.52
Clothes Washers[1]	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Dishwashers[1]	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.12	0.12	0.12
Color Televisions and Set-Top Boxes	0.36	0.40	0.40	0.40	0.44	0.43	0.44	0.56	0.56	0.56
Personal Computers and Related	0.15	0.18	0.18	0.18	0.20	0.20	0.20	0.23	0.23	0.23
Furnace Fans and Boiler Circulation	0.13	0.14	0.14	0.13	0.15	0.16	0.15	0.17	0.17	0.16
Other Uses[2]	0.82	0.84	0.85	0.85	0.99	0.98	1.01	1.26	1.21	1.19
Delivered Energy	**4.75**	**4.81**	**4.79**	**4.80**	**5.10**	**5.04**	**5.12**	**5.78**	**5.67**	**5.69**
Natural Gas										
Space Heating	3.22	3.47	3.42	3.27	3.39	3.34	3.39	3.44	3.38	3.40
Space Cooling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Heating	1.35	1.35	1.34	1.35	1.35	1.35	1.40	1.31	1.31	1.35
Cooking	0.22	0.22	0.22	0.22	0.22	0.22	0.24	0.23	0.23	0.26
Clothes Dryers	0.07	0.07	0.07	0.07	0.08	0.08	0.06	0.08	0.08	0.06
Delivered Energy	**4.86**	**5.11**	**5.06**	**4.92**	**5.03**	**4.99**	**5.10**	**5.06**	**5.01**	**5.07**
Distillate Fuel Oil										
Space Heating	0.66	0.67	0.66	0.62	0.53	0.52	0.53	0.46	0.46	0.46
Water Heating	0.12	0.10	0.10	0.10	0.07	0.07	0.06	0.05	0.05	0.05
Delivered Energy	**0.78**	**0.77**	**0.77**	**0.72**	**0.60**	**0.59**	**0.60**	**0.51**	**0.50**	**0.51**
Liquefied Petroleum Gases										
Space Heating	0.22	0.23	0.22	0.21	0.20	0.20	0.20	0.19	0.19	0.19
Water Heating	0.09	0.08	0.08	0.08	0.06	0.06	0.06	0.05	0.05	0.05
Cooking	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.04
Other Uses[3]	0.15	0.17	0.17	0.16	0.20	0.20	0.20	0.24	0.24	0.24
Delivered Energy	**0.50**	**0.51**	**0.50**	**0.49**	**0.49**	**0.48**	**0.49**	**0.52**	**0.51**	**0.52**
Marketed Renewables (wood)[4]	0.43	0.42	0.42	0.43	0.48	0.48	0.48	0.50	0.50	0.50
Other Fuels[5]	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08

Table A4. Residential Sector Key Indicators and Consumption (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Delivered Energy Consumption by End Use										
Space Heating	4.90	5.19	5.11	4.91	4.99	4.92	4.99	5.00	4.91	4.95
Space Cooling	0.88	0.83	0.82	0.86	0.95	0.93	0.97	1.10	1.06	1.10
Water Heating	1.98	1.97	1.95	1.95	1.97	1.97	2.00	1.91	1.92	1.95
Refrigeration	0.39	0.37	0.37	0.37	0.39	0.39	0.39	0.43	0.43	0.42
Cooking	0.35	0.36	0.36	0.37	0.38	0.38	0.41	0.41	0.41	0.43
Clothes Dryers	0.34	0.34	0.34	0.34	0.36	0.36	0.35	0.40	0.39	0.38
Freezers	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09
Lighting	0.73	0.72	0.72	0.71	0.55	0.55	0.55	0.53	0.53	0.52
Clothes Washers[1]	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Dishwashers[1]	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.12	0.12	0.12
Color Televisions and Set-Top Boxes	0.36	0.40	0.40	0.40	0.44	0.43	0.44	0.56	0.56	0.56
Personal Computers and Related	0.15	0.18	0.18	0.18	0.20	0.20	0.20	0.23	0.23	0.23
Furnace Fans and Boiler Circulation	0.13	0.14	0.14	0.13	0.15	0.16	0.15	0.17	0.17	0.16
Other Uses[6]	0.97	1.01	1.02	1.01	1.19	1.18	1.21	1.50	1.45	1.43
Delivered Energy	**11.40**	**11.72**	**11.62**	**11.44**	**11.78**	**11.66**	**11.86**	**12.46**	**12.28**	**12.36**
Electricity Related Losses	**10.36**	**10.46**	**10.43**	**10.44**	**10.89**	**10.82**	**10.81**	**11.87**	**11.73**	**11.69**
Total Energy Consumption by End Use										
Space Heating	5.51	5.84	5.76	5.53	5.64	5.56	5.64	5.64	5.55	5.59
Space Cooling	2.81	2.64	2.60	2.73	2.98	2.91	3.01	3.35	3.25	3.34
Water Heating	2.90	2.90	2.86	2.87	3.05	3.02	3.01	2.95	2.96	2.98
Refrigeration	1.23	1.18	1.18	1.18	1.21	1.21	1.20	1.30	1.31	1.29
Cooking	0.58	0.59	0.59	0.60	0.65	0.65	0.67	0.70	0.70	0.72
Clothes Dryers	0.92	0.93	0.93	0.92	0.97	0.96	0.96	1.04	1.02	1.03
Freezers	0.26	0.25	0.25	0.25	0.26	0.26	0.26	0.28	0.28	0.28
Lighting	2.33	2.29	2.29	2.27	1.74	1.73	1.73	1.63	1.61	1.59
Clothes Washers[1]	0.11	0.10	0.10	0.10	0.09	0.09	0.08	0.09	0.09	0.09
Dishwashers[1]	0.30	0.30	0.30	0.30	0.32	0.32	0.32	0.36	0.36	0.35
Color Televisions and Set-Top Boxes	1.15	1.29	1.29	1.28	1.37	1.37	1.37	1.72	1.71	1.71
Personal Computers and Related	0.49	0.57	0.57	0.58	0.62	0.62	0.61	0.70	0.70	0.69
Furnace Fans and Boiler Circulation	0.41	0.45	0.45	0.42	0.49	0.49	0.47	0.51	0.51	0.50
Other Uses[6]	2.76	2.84	2.88	2.85	3.31	3.28	3.34	4.08	3.96	3.88
Total	**21.76**	**22.18**	**22.05**	**21.88**	**22.67**	**22.48**	**22.67**	**24.33**	**24.01**	**24.05**
Nonmarketed Renewables[7]										
Geothermal Heat Pumps	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02
Solar Hot Water Heating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Solar Photovoltaic	0.00	0.01	0.01	0.01	0.06	0.05	0.05	0.06	0.06	0.05
Wind	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Total	**0.01**	**0.01**	**0.01**	**0.01**	**0.08**	**0.08**	**0.07**	**0.09**	**0.09**	**0.08**

[1]Does not include water heating portion of load.
[2]Includes small electric devices, heating elements, and motors not listed above.
[3]Includes such appliances as outdoor grills and mosquito traps.
[4]Includes wood used for primary and secondary heating in wood stoves or fireplaces as reported in the *Residential Energy Consumption Survey 2005*.
[5]Includes kerosene and coal.
[6]Includes all other uses listed above.
[7]Represents delivered energy displaced.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008).
Projections: EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A5. Commercial Sector Key Indicators and Consumption
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Key Indicators										
Total Floorspace (billion square feet)										
Surviving	75.2	79.4	79.4	79.5	89.6	89.6	90.3	102.1	101.7	101.2
New Additions	2.1	1.6	1.6	1.7	1.9	1.9	1.9	2.3	2.2	2.1
Total	**77.3**	**81.0**	**81.1**	**81.2**	**91.6**	**91.5**	**92.3**	**104.4**	**103.9**	**103.3**
Energy Consumption Intensity (thousand Btu per square foot)										
Delivered Energy Consumption	110.0	109.5	109.3	106.7	104.9	105.0	105.0	102.8	102.5	102.9
Electricity Related Losses	129.3	128.6	128.7	127.5	128.4	129.8	127.6	125.3	126.6	125.5
Total Energy Consumption	239.3	238.1	238.0	234.2	233.4	234.8	232.6	228.0	229.2	228.4
Delivered Energy Consumption by Fuel										
Purchased Electricity										
Space Heating[1]	0.17	0.18	0.18	0.17	0.17	0.17	0.18	0.18	0.18	0.18
Space Cooling[1]	0.55	0.53	0.53	0.54	0.58	0.58	0.60	0.65	0.65	0.65
Water Heating[1]	0.10	0.09	0.09	0.09	0.09	0.10	0.10	0.09	0.10	0.10
Ventilation	0.49	0.53	0.53	0.53	0.63	0.64	0.64	0.71	0.71	0.71
Cooking	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Lighting	1.06	1.06	1.06	1.06	1.12	1.13	1.15	1.21	1.21	1.22
Refrigeration	0.40	0.39	0.40	0.40	0.37	0.38	0.38	0.40	0.40	0.40
Office Equipment (PC)	0.24	0.25	0.25	0.25	0.29	0.29	0.29	0.34	0.34	0.34
Office Equipment (non-PC)	0.21	0.26	0.26	0.26	0.38	0.38	0.38	0.44	0.44	0.43
Other Uses[2]	1.34	1.46	1.46	1.43	1.85	1.84	1.83	2.32	2.31	2.27
Delivered Energy	**4.58**	**4.79**	**4.78**	**4.75**	**5.51**	**5.53**	**5.57**	**6.36**	**6.36**	**6.31**
Natural Gas										
Space Heating[1]	1.45	1.59	1.58	1.50	1.55	1.54	1.56	1.56	1.52	1.53
Space Cooling[1]	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Water Heating[1]	0.44	0.45	0.45	0.44	0.51	0.51	0.51	0.56	0.56	0.56
Cooking	0.16	0.18	0.18	0.18	0.20	0.20	0.20	0.22	0.22	0.22
Other Uses[3]	1.00	1.01	1.02	0.99	1.04	1.04	1.04	1.20	1.18	1.19
Delivered Energy	**3.10**	**3.27**	**3.27**	**3.14**	**3.33**	**3.32**	**3.34**	**3.59**	**3.53**	**3.54**
Distillate Fuel Oil										
Space Heating[1]	0.17	0.17	0.17	0.16	0.15	0.14	0.15	0.15	0.14	0.15
Water Heating[1]	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03
Other Uses[4]	0.22	0.19	0.19	0.18	0.17	0.17	0.17	0.17	0.17	0.17
Delivered Energy	**0.41**	**0.39**	**0.38**	**0.36**	**0.34**	**0.33**	**0.34**	**0.34**	**0.33**	**0.34**
Marketed Renewables (biomass)	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Other Fuels[5]	0.29	0.30	0.31	0.28	0.30	0.30	0.31	0.31	0.31	0.31
Delivered Energy Consumption by End Use										
Space Heating[1]	1.79	1.94	1.93	1.83	1.87	1.86	1.89	1.88	1.84	1.86
Space Cooling[1]	0.59	0.57	0.57	0.58	0.62	0.62	0.63	0.69	0.68	0.69
Water Heating[1]	0.56	0.57	0.57	0.55	0.62	0.62	0.63	0.69	0.68	0.68
Ventilation	0.49	0.53	0.53	0.53	0.63	0.64	0.64	0.71	0.71	0.71
Cooking	0.19	0.20	0.20	0.20	0.22	0.22	0.22	0.25	0.25	0.24
Lighting	1.06	1.06	1.06	1.06	1.12	1.13	1.15	1.21	1.21	1.22
Refrigeration	0.40	0.39	0.40	0.40	0.37	0.38	0.38	0.40	0.40	0.40
Office Equipment (PC)	0.24	0.25	0.25	0.25	0.29	0.29	0.29	0.34	0.34	0.34
Office Equipment (non-PC)	0.21	0.26	0.26	0.26	0.38	0.38	0.38	0.44	0.44	0.43
Other Uses[6]	2.98	3.09	3.09	3.00	3.48	3.48	3.47	4.13	4.09	4.06
Delivered Energy	**8.50**	**8.87**	**8.86**	**8.66**	**9.61**	**9.61**	**9.69**	**10.73**	**10.66**	**10.62**

Table A5. Commercial Sector Key Indicators and Consumption (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Electricity Related Losses	**9.99**	**10.41**	**10.43**	**10.35**	**11.76**	**11.87**	**11.77**	**13.07**	**13.16**	**12.96**
Total Energy Consumption by End Use										
Space Heating[1]	2.15	2.32	2.31	2.20	2.24	2.23	2.27	2.25	2.21	2.23
Space Cooling[1]	1.78	1.73	1.73	1.77	1.86	1.88	1.89	2.02	2.02	2.03
Water Heating[1]	0.76	0.77	0.77	0.76	0.82	0.83	0.83	0.88	0.88	0.87
Ventilation	1.56	1.70	1.70	1.68	1.97	2.01	2.01	2.15	2.19	2.17
Cooking	0.24	0.25	0.25	0.25	0.27	0.27	0.27	0.29	0.30	0.29
Lighting	3.37	3.37	3.37	3.36	3.50	3.54	3.58	3.69	3.73	3.71
Refrigeration	1.28	1.25	1.26	1.26	1.17	1.18	1.18	1.23	1.24	1.22
Office Equipment (PC)	0.77	0.80	0.81	0.80	0.91	0.91	0.91	1.04	1.05	1.03
Office Equipment (non-PC)	0.67	0.82	0.82	0.82	1.18	1.18	1.18	1.33	1.34	1.32
Other Uses[6]	5.91	6.26	6.27	6.11	7.43	7.44	7.33	8.90	8.87	8.71
Total	**18.49**	**19.29**	**19.29**	**19.01**	**21.37**	**21.49**	**21.46**	**23.80**	**23.82**	**23.59**
Nonmarketed Renewable Fuels[7]										
Solar Thermal	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.04**	**0.03**	**0.04**	**0.04**	**0.04**

[1]Includes fuel consumption for district services.
[2]Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, and medical equipment.
[3]Includes miscellaneous uses, such as pumps, emergency generators, combined heat and power in commercial buildings, and manufacturing performed in commercial buildings.
[4]Includes miscellaneous uses, such as cooking, emergency generators, and combined heat and power in commercial buildings.
[5]Includes residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.
[6]Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, medical equipment, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.
[7]Represents delivered energy displaced by solar thermal space heating and water heating, and electricity generation by solar photovoltaic systems.
Btu = British thermal unit.
PC = Personal computer.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A6. Industrial Sector Key Indicators and Consumption

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Key Indicators										
Value of Shipments (billion 2000 dollars)										
Manufacturing	4261	3683	3757	3963	4946	5019	5150	5735	5631	6671
Nonmanufacturing	1490	1179	1197	1277	1635	1633	1603	1784	1760	1780
Total	**5750**	**4862**	**4954**	**5240**	**6581**	**6652**	**6753**	**7519**	**7391**	**8451**
Energy Prices										
(2007 dollars per million Btu)										
Liquefied Petroleum Gases	23.38	16.55	16.64	21.84	29.12	29.17	28.78	30.83	30.85	30.99
Motor Gasoline	15.93	17.59	17.63	23.41	29.48	29.82	29.64	31.70	31.49	32.04
Distillate Fuel Oil	16.82	10.58	10.62	16.01	22.68	23.06	22.56	25.08	25.07	25.19
Residual Fuel Oil	10.60	9.82	9.84	15.38	20.71	20.73	20.94	22.16	22.08	22.73
Petrochemical Feedstocks	12.60	7.82	7.80	12.09	17.75	17.86	17.63	18.36	18.24	18.95
Asphalt and Road Oil	5.40	3.81	3.78	6.49	9.68	9.65	9.52	10.51	10.52	10.70
Natural Gas Heat and Power	6.60	4.61	4.56	6.03	6.71	6.61	6.65	8.06	7.94	8.31
Natural Gas Feedstocks	8.24	6.34	6.29	7.70	8.35	8.26	8.25	9.57	9.47	9.83
Metallurgical Coal	3.61	3.98	4.00	4.37	4.39	4.39	4.40	4.46	4.43	4.41
Other Industrial Coal	2.43	2.39	2.39	2.54	2.57	2.57	2.53	2.67	2.66	2.67
Coal for Liquids	- -	- -	- -	- -	1.15	1.35	1.23	1.24	1.38	1.36
Electricity	18.62	16.82	16.83	18.72	19.54	18.80	19.06	21.46	20.56	21.59
(nominal dollars per million Btu)										
Liquefied Petroleum Gases	23.38	17.14	17.27	23.00	36.53	37.04	37.17	47.72	48.82	44.93
Motor Gasoline	15.93	18.22	18.29	24.66	36.98	37.86	38.29	49.07	49.83	46.45
Distillate Fuel Oil	16.82	10.96	11.03	16.86	28.44	29.28	29.14	38.83	39.68	36.52
Residual Fuel Oil	10.60	10.17	10.22	16.20	25.98	26.32	27.05	34.29	34.94	32.95
Petrochemical Feedstocks	12.60	8.10	8.09	12.74	22.26	22.68	22.77	28.42	28.86	27.48
Asphalt and Road Oil	5.40	3.94	3.92	6.83	12.15	12.26	12.30	16.26	16.64	15.51
Natural Gas Heat and Power	6.60	4.78	4.74	6.35	8.41	8.39	8.59	12.48	12.56	12.05
Natural Gas Feedstocks	8.24	6.56	6.53	8.11	10.48	10.49	10.66	14.81	14.98	14.26
Metallurgical Coal	3.61	4.12	4.15	4.60	5.51	5.57	5.69	6.91	7.01	6.40
Other Industrial Coal	2.43	2.47	2.48	2.67	3.23	3.26	3.27	4.14	4.22	3.88
Coal for Liquids	0.00	0.00	0.00	- -	1.44	1.71	1.59	1.91	2.18	1.98
Electricity	18.62	17.43	17.46	19.72	24.51	23.88	24.63	33.22	32.54	31.30
Energy Consumption (quadrillion Btu)[1]										
Industrial Consumption Excluding Refining										
Liquefied Petroleum Gases Heat and	0.18	0.13	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.16
Liquefied Petroleum Gases Feedstocks	2.16	1.59	1.65	1.83	1.48	1.51	1.61	1.23	1.26	1.50
Motor Gasoline	0.36	0.33	0.34	0.34	0.34	0.34	0.34	0.36	0.35	0.36
Distillate Fuel Oil	1.27	1.14	1.15	1.17	1.19	1.20	1.18	1.24	1.23	1.23
Residual Fuel Oil	0.24	0.17	0.17	0.15	0.16	0.16	0.16	0.15	0.15	0.16
Petrochemical Feedstocks	1.30	1.01	1.05	1.01	1.04	1.05	1.13	0.85	0.88	1.05
Petroleum Coke	0.36	0.20	0.20	0.27	0.29	0.29	0.29	0.29	0.29	0.31
Asphalt and Road Oil	1.19	0.86	0.87	0.96	1.14	1.14	1.08	1.13	1.12	1.12
Miscellaneous Petroleum[2]	0.62	0.30	0.32	0.30	0.21	0.21	0.21	0.18	0.18	0.21
Petroleum Subtotal	7.68	5.73	5.90	6.18	6.00	6.05	6.15	5.57	5.60	6.10
Natural Gas Heat and Power	5.14	4.62	4.72	5.02	4.75	4.79	4.86	4.73	4.71	5.11
Natural Gas Feedstocks	0.55	0.47	0.47	0.51	0.45	0.46	0.50	0.39	0.40	0.44
Lease and Plant Fuel[3]	1.20	1.28	1.28	1.27	1.29	1.23	1.33	1.46	1.44	1.47
Natural Gas Subtotal	6.89	6.37	6.47	6.80	6.50	6.48	6.69	6.57	6.54	7.02
Metallurgical Coal and Coke[4]	0.62	0.51	0.52	0.56	0.49	0.50	0.50	0.38	0.39	0.49
Other Industrial Coal	1.15	0.93	0.94	1.18	1.04	1.04	1.09	1.03	1.03	1.10
Coal Subtotal	1.77	1.44	1.46	1.74	1.53	1.55	1.60	1.41	1.42	1.59
Renewables[5]	1.64	1.55	1.57	1.48	1.64	1.68	1.64	1.92	1.94	1.96
Purchased Electricity	3.27	2.95	2.98	3.15	3.24	3.28	3.27	3.15	3.14	3.45
Delivered Energy	**21.26**	**18.04**	**18.38**	**19.36**	**18.91**	**19.04**	**19.35**	**18.63**	**18.64**	**20.11**
Electricity Related Losses	7.13	6.43	6.49	6.86	6.93	7.04	6.91	6.47	6.50	7.09
Total	**28.39**	**24.47**	**24.87**	**26.22**	**25.84**	**26.08**	**26.25**	**25.10**	**25.14**	**27.20**

Table A6. Industrial Sector Key Indicators and Consumption (Continued)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Refining Consumption										
Liquefied Petroleum Gases Heat and	0.01	0.06	0.06	0.03	0.06	0.06	0.02	0.04	0.04	0.00
Distillate Fuel Oil	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residual Fuel Oil	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Petroleum Coke	0.55	0.53	0.54	0.54	0.49	0.49	0.53	0.43	0.44	0.53
Still Gas	1.68	1.89	1.81	1.65	1.62	1.61	1.62	1.71	1.66	1.67
Miscellaneous Petroleum[2]	0.02	0.03	0.03	0.01	0.03	0.03	0.01	0.03	0.03	0.01
Petroleum Subtotal	2.27	2.52	2.44	2.24	2.20	2.18	2.17	2.22	2.16	2.20
Natural Gas Heat and Power	1.13	0.90	0.97	1.25	1.28	1.28	1.47	1.42	1.41	1.49
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Subtotal	1.13	0.90	0.97	1.25	1.28	1.28	1.47	1.42	1.41	1.49
Other Industrial Coal	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.12	0.25	0.24	0.25	0.46	0.58
Coal Subtotal	0.06	0.06	0.06	0.06	0.17	0.31	0.30	0.31	0.52	0.64
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Purchased Electricity	0.16	0.18	0.18	0.19	0.20	0.20	0.22	0.23	0.22	0.22
Delivered Energy	**4.03**	**4.42**	**4.41**	**4.48**	**4.88**	**5.20**	**5.38**	**5.87**	**6.25**	**6.22**
Electricity Related Losses	0.35	0.39	0.39	0.41	0.44	0.44	0.46	0.48	0.46	0.46
Total	**4.38**	**4.81**	**4.81**	**4.88**	**5.32**	**5.64**	**5.84**	**6.35**	**6.72**	**6.67**
Total Industrial Sector Consumption										
Liquefied Petroleum Gases Heat and	0.19	0.19	0.21	0.19	0.21	0.21	0.17	0.18	0.18	0.16
Liquefied Petroleum Gases Feedstocks	2.16	1.59	1.65	1.83	1.48	1.51	1.61	1.23	1.26	1.50
Motor Gasoline	0.36	0.33	0.34	0.34	0.34	0.34	0.34	0.36	0.35	0.36
Distillate Fuel Oil	1.28	1.14	1.15	1.17	1.19	1.20	1.18	1.24	1.23	1.23
Residual Fuel Oil	0.25	0.17	0.17	0.15	0.16	0.16	0.16	0.15	0.15	0.16
Petrochemical Feedstocks	1.30	1.01	1.05	1.01	1.04	1.05	1.13	0.85	0.88	1.05
Petroleum Coke	0.91	0.74	0.75	0.81	0.78	0.78	0.82	0.72	0.72	0.83
Asphalt and Road Oil	1.19	0.86	0.87	0.96	1.14	1.14	1.08	1.13	1.12	1.12
Still Gas	1.68	1.89	1.81	1.65	1.62	1.61	1.62	1.71	1.66	1.67
Miscellaneous Petroleum[2]	0.65	0.33	0.34	0.31	0.23	0.24	0.21	0.20	0.21	0.22
Petroleum Subtotal	9.96	8.25	8.34	8.42	8.20	8.24	8.32	7.79	7.76	8.30
Natural Gas Heat and Power	6.27	5.52	5.69	6.27	6.03	6.07	6.34	6.15	6.12	6.60
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Feedstocks	0.55	0.47	0.47	0.51	0.45	0.46	0.50	0.39	0.40	0.44
Lease and Plant Fuel[3]	1.20	1.28	1.28	1.27	1.29	1.23	1.33	1.46	1.44	1.47
Natural Gas Subtotal	8.02	7.27	7.44	8.05	7.77	7.77	8.17	7.99	7.96	8.51
Metallurgical Coal and Coke[4]	0.62	0.51	0.52	0.56	0.49	0.50	0.50	0.38	0.39	0.49
Other Industrial Coal	1.21	0.99	1.00	1.24	1.10	1.10	1.15	1.09	1.09	1.16
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.12	0.25	0.24	0.25	0.46	0.58
Coal Subtotal	1.83	1.50	1.52	1.80	1.70	1.85	1.89	1.73	1.93	2.23
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Renewables[5]	1.64	1.55	1.57	1.48	1.64	1.68	1.64	1.92	1.94	1.96
Purchased Electricity	3.43	3.14	3.16	3.34	3.45	3.48	3.48	3.38	3.37	3.67
Delivered Energy	**25.29**	**22.46**	**22.79**	**23.83**	**23.78**	**24.24**	**24.73**	**24.50**	**24.89**	**26.33**
Electricity Related Losses	7.48	6.82	6.89	7.27	7.37	7.48	7.36	6.95	6.96	7.55
Total	**32.77**	**29.28**	**29.68**	**31.10**	**31.15**	**31.72**	**32.09**	**31.44**	**31.86**	**33.87**

Table A6. Industrial Sector Key Indicators and Consumption (Continued)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Energy Consumption per dollar of Shipment (thousand Btu per 2000 dollars)										
Liquefied Petroleum Gases Heat and	0.03	0.04	0.04	0.04	0.03	0.03	0.03	0.02	0.02	0.02
Liquefied Petroleum Gases Feedstocks	0.38	0.33	0.33	0.35	0.23	0.23	0.24	0.16	0.17	0.18
Motor Gasoline	0.06	0.07	0.07	0.07	0.05	0.05	0.05	0.05	0.05	0.04
Distillate Fuel Oil	0.22	0.23	0.23	0.22	0.18	0.18	0.18	0.16	0.17	0.15
Residual Fuel Oil	0.04	0.04	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0.02
Petrochemical Feedstocks	0.23	0.21	0.21	0.19	0.16	0.16	0.17	0.11	0.12	0.12
Petroleum Coke	0.16	0.15	0.15	0.15	0.12	0.12	0.12	0.10	0.10	0.10
Asphalt and Road Oil	0.21	0.18	0.18	0.18	0.17	0.17	0.16	0.15	0.15	0.13
Still Gas	0.29	0.39	0.36	0.32	0.25	0.24	0.24	0.23	0.22	0.20
Miscellaneous Petroleum[2]	0.11	0.07	0.07	0.06	0.04	0.04	0.03	0.03	0.03	0.03
Petroleum Subtotal	1.73	1.70	1.68	1.61	1.25	1.24	1.23	1.04	1.05	0.98
Natural Gas Heat and Power	1.09	1.14	1.15	1.20	0.92	0.91	0.94	0.82	0.83	0.78
Natural-Gas-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Feedstocks	0.10	0.10	0.10	0.10	0.07	0.07	0.07	0.05	0.05	0.05
Lease and Plant Fuel[3]	0.21	0.26	0.26	0.24	0.20	0.18	0.20	0.19	0.19	0.17
Natural Gas Subtotal	1.39	1.50	1.50	1.54	1.18	1.17	1.21	1.06	1.08	1.01
Metallurgical Coal and Coke[4]	0.11	0.10	0.11	0.11	0.07	0.08	0.07	0.05	0.05	0.06
Other Industrial Coal	0.21	0.20	0.20	0.24	0.17	0.17	0.17	0.15	0.15	0.14
Coal-to-Liquids Heat and Power	0.00	0.00	0.00	0.00	0.02	0.04	0.04	0.03	0.06	0.07
Coal Subtotal	0.32	0.31	0.31	0.34	0.26	0.28	0.28	0.23	0.26	0.26
Biofuels Heat and Coproducts	0.07	0.16	0.15	0.14	0.16	0.18	0.18	0.22	0.26	0.20
Renewables[5]	0.29	0.32	0.32	0.28	0.25	0.25	0.24	0.25	0.26	0.23
Purchased Electricity	0.60	0.64	0.64	0.64	0.52	0.52	0.52	0.45	0.46	0.43
Delivered Energy	**4.40**	**4.62**	**4.60**	**4.55**	**3.61**	**3.64**	**3.66**	**3.26**	**3.37**	**3.12**
Electricity Related Losses	1.30	1.40	1.39	1.39	1.12	1.12	1.09	0.92	0.94	0.89
Total	**5.70**	**6.02**	**5.99**	**5.94**	**4.73**	**4.77**	**4.75**	**4.18**	**4.31**	**4.01**
Industrial Combined Heat and Power										
Capacity (gigawatts)	25.52	27.61	27.70	28.84	31.89	33.67	35.01	40.52	42.90	45.71
Generation (billion kilowatthours)	140.90	150.21	150.89	160.28	180.89	194.63	205.32	246.90	265.55	285.32

[1]Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.
[2]Includes lubricants and miscellaneous petroleum products.
[3]Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.
[4]Includes net coal coke imports.
[5]Includes consumption of energy produced from hydroelectric, wood and wood waste, municipal waste, and other biomass sources.
Btu = British thermal unit.
- - = Not applicable.
Note: Totals may not equal sum of components due to independent rounding. Data for 2006 and 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 prices for motor gasoline and distillate fuel oil are based on: Energy Information Administration (EIA), *Petroleum Marketing Annual 2007*, DOE/EIA-0487(2007) (Washington, DC, August 2008). 2007 petrochemical feedstock and asphalt and road oil prices are based on: EIA, *State Energy Data Report 2006*, DOE/EIA-0214(2006) (Washington, DC, October 2008). 2007 coal prices are based on: EIA, *Quarterly Coal Report, October-December 2007*, DOE/EIA-0121(2007/4Q) (Washington, DC, March 2008) and EIA, AEO2009 National Energy Modeling System run NOSTIMLS.D041409A. 2007 electricity prices: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 natural gas prices are based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2006*, DOE/EIA-0131(2006) (Washington, DC, October 2007) and the *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 refining consumption based on: *Petroleum Supply Annual 2007,* DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). Other 2007 consumption values are based on: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 shipments: IHS Global Insight industry model, November 2008. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A7. Transportation Sector Key Indicators and Delivered Energy Consumption

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Key Indicators										
Travel Indicators										
(billion vehicle miles traveled)										
Light-Duty Vehicles less than 8,500	2702	2782	2791	2747	3123	3137	3161	3859	3839	3827
Commercial Light Trucks[1]	72	64	65	67	83	84	85	98	97	105
Freight Trucks greater than 10,000	248	224	228	232	296	297	303	350	347	378
(billion seat miles available)										
Air	1036	942	968	951	1125	1126	1138	1495	1465	1410
(billion ton miles traveled)										
Rail	1733	1641	1659	1664	1898	1916	1927	2045	2057	2193
Domestic Shipping	662	630	636	629	712	705	744	801	796	839
Energy Efficiency Indicators										
(miles per gallon)										
Tested New Light-Duty Vehicle[2]	26.3	26.5	26.5	26.9	35.6	35.6	35.5	38.2	38.1	38.0
New Car[2]	30.3	30.4	30.4	30.7	40.4	40.4	39.1	42.4	42.3	41.4
New Light Truck[2]	23.1	23.6	23.6	23.6	29.9	29.8	30.7	32.3	32.3	33.1
On-Road New Light-Duty Vehicle[3]	21.8	22.0	22.0	22.3	29.7	29.7	29.5	32.0	31.9	31.9
New Car[3]	24.6	24.8	24.8	25.1	33.4	33.4	32.3	35.5	35.5	34.7
New Light Truck[3]	19.4	19.8	19.8	19.8	25.1	25.0	25.8	27.1	27.1	27.8
Light-Duty Stock[4]	20.6	20.6	20.6	20.7	24.6	24.6	24.7	28.9	28.9	28.9
New Commercial Light Truck[1]	15.4	15.7	15.7	15.7	19.2	19.2	19.6	19.9	19.9	20.3
Stock Commercial Light Truck[1]	14.4	14.8	14.8	14.8	17.3	17.3	17.6	19.4	19.4	19.8
Freight Truck	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.8	6.8	6.9
(seat miles per gallon)										
Aircraft	62.8	64.3	64.2	64.4	67.8	67.8	68.1	73.5	73.4	73.6
(ton miles per thousand Btu)										
Rail	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0
Domestic Shipping	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Energy Use by Mode										
(quadrillion Btu)										
Light-Duty Vehicles	16.47	16.36	16.41	16.20	15.73	15.79	15.80	16.60	16.53	16.51
Commercial Light Trucks[1]	0.62	0.55	0.55	0.57	0.60	0.61	0.61	0.63	0.63	0.67
Bus Transportation	0.27	0.28	0.28	0.27	0.27	0.27	0.27	0.28	0.28	0.28
Freight Trucks	5.15	4.65	4.74	4.81	5.67	5.69	5.79	6.39	6.33	6.90
Rail, Passenger	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
Rail, Freight	0.59	0.56	0.57	0.57	0.64	0.65	0.65	0.68	0.69	0.73
Shipping, Domestic	0.34	0.32	0.32	0.32	0.36	0.35	0.37	0.40	0.40	0.42
Shipping, International	0.88	0.84	0.84	0.80	0.90	0.90	0.90	0.91	0.91	0.91
Recreational Boats	0.25	0.25	0.25	0.25	0.27	0.27	0.26	0.28	0.28	0.28
Air	2.71	2.36	2.43	2.45	2.82	2.84	2.87	3.50	3.44	3.54
Military Use	0.70	0.78	0.78	0.74	0.74	0.74	0.74	0.78	0.78	0.78
Lubricants	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15
Pipeline Fuel	0.64	0.64	0.63	0.64	0.67	0.62	0.69	0.71	0.70	0.72
Total	**28.82**	**27.76**	**27.99**	**27.81**	**28.87**	**28.92**	**29.15**	**31.38**	**31.18**	**31.94**

Table A7. Transportation Sector Key Indicators and Delivered Energy Consumption (Continued)

Key Indicators and Consumption	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Energy Use by Mode										
(million barrels per day oil equivalent)										
Light-Duty Vehicles	8.74	8.80	8.83	8.72	8.58	8.67	8.69	9.27	9.26	9.35
Commercial Light Trucks[1]	0.33	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.34	0.36
Bus Transportation	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14
Freight Trucks	2.46	2.23	2.27	2.30	2.72	2.73	2.77	3.06	3.03	3.31
Rail, Passenger	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Rail, Freight	0.28	0.27	0.27	0.27	0.31	0.31	0.31	0.33	0.33	0.35
Shipping, Domestic	0.16	0.15	0.15	0.15	0.17	0.16	0.17	0.18	0.18	0.19
Shipping, International	0.39	0.37	0.37	0.35	0.39	0.39	0.39	0.40	0.40	0.40
Recreational Boats	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.15	0.15	0.15
Air	1.31	1.14	1.17	1.19	1.36	1.37	1.39	1.70	1.67	1.71
Military Use	0.34	0.37	0.38	0.36	0.36	0.36	0.36	0.37	0.37	0.37
Lubricants	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Pipeline Fuel	0.32	0.32	0.32	0.32	0.34	0.31	0.35	0.36	0.35	0.36
Total	**14.68**	**14.30**	**14.41**	**14.32**	**14.91**	**15.00**	**15.13**	**16.40**	**16.32**	**16.80**

[1]Commercial trucks 8,500 to 10,000 pounds.
[2]Environmental Protection Agency rated miles per gallon.
[3]Tested new vehicle efficiency revised for on-road performance.
[4]Combined car and light truck "on-the-road" estimate.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007: Energy Information Administration (EIA), *Natural Gas Annual 2006*, DOE/EIA-0131(2006) (Washington, DC, October 2007); EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008); Federal Highway Administration, *Highway Statistics 2005* (Washington, DC, October 2006); Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 27 and Annual* (Oak Ridge, TN, 2008); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, March 2004); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey," EC97TV (Washington, DC, October 1999); EIA, Alternatives to Traditional Transportation Fuels 2006 (Part II - User and Fuel Data), May 2008; EIA, *State Energy Data Report 2006*, DOE/EIA-0214(2006) (Washington, DC, October 2008); U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2007/2006* (Washington, DC, 2007); EIA, *Fuel Oil and Kerosene Sales 2006*, DOE/EIA-0535(2006) (Washington, DC, December 2007); and United States Department of Defense, Defense Fuel Supply Center. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A8. Electricity Supply, Disposition, Prices, and Emissions
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Generation by Fuel Type										
Electric Power Sector[1]										
Power Only[2]										
Coal	1965	1973	1971	2006	2114	2133	2093	2217	2236	2334
Petroleum	57	52	52	43	46	45	44	47	46	46
Natural Gas[3]	685	621	594	629	624	517	687	848	742	772
Nuclear Power	806	809	809	809	895	876	862	929	890	907
Pumped Storage/Other[4]	0	1	1	1	1	1	1	1	1	1
Renewable Sources[5]	314	396	427	411	529	631	543	590	672	610
Distributed Generation (Natural Gas)	0	0	0	0	0	0	0	0	0	0
Total	**3827**	**3852**	**3854**	**3899**	**4209**	**4203**	**4230**	**4632**	**4587**	**4670**
Combined Heat and Power[6]										
Coal	37	32	32	32	33	33	32	33	33	32
Petroleum	5	0	0	0	0	0	0	0	0	0
Natural Gas	129	108	106	107	111	103	114	112	111	109
Renewable Sources	4	4	4	4	5	5	5	6	5	5
Total	**179**	**144**	**142**	**143**	**150**	**142**	**151**	**150**	**149**	**146**
Total Net Generation	**4006**	**3996**	**3996**	**4042**	**4358**	**4344**	**4381**	**4782**	**4736**	**4816**
Less Direct Use	34	34	34	34	34	33	34	33	33	33
Net Available to the Grid	**3972**	**3963**	**3962**	**4009**	**4325**	**4311**	**4348**	**4749**	**4703**	**4783**
End-Use Generation[7]										
Coal	19	19	19	19	25	31	31	32	42	48
Petroleum	4	4	4	13	4	4	13	4	4	14
Natural Gas	79	74	76	78	96	94	97	131	123	131
Other Gaseous Fuels[8]	5	19	18	16	15	16	15	17	16	15
Renewable Sources[9]	33	37	37	36	63	72	69	107	120	116
Other[10]	13	12	12	12	12	12	12	12	12	12
Total	**153**	**164**	**166**	**174**	**215**	**229**	**237**	**302**	**318**	**337**
Less Direct Use	122	132	133	142	173	181	188	235	241	261
Total Sales to the Grid	**31**	**33**	**33**	**33**	**42**	**48**	**49**	**67**	**77**	**76**
Total Electricity Generation by Fuel										
Coal	2021	2024	2022	2057	2172	2198	2156	2281	2311	2415
Petroleum	66	56	56	56	50	49	58	51	50	60
Natural Gas	892	803	775	814	830	714	898	1090	976	1012
Nuclear Power	806	809	809	809	895	876	862	929	890	907
Renewable Sources[5,9]	352	436	468	451	598	708	617	703	798	730
Other[11]	22	31	31	29	28	28	28	29	29	28
Total	**4159**	**4161**	**4162**	**4217**	**4573**	**4573**	**4618**	**5084**	**5055**	**5153**
Total Electricity Generation	**4159**	**4161**	**4162**	**4217**	**4573**	**4573**	**4618**	**5084**	**5055**	**5153**
Total Net Generation to the Grid	**4003**	**3996**	**3995**	**4042**	**4367**	**4359**	**4396**	**4816**	**4780**	**4859**
Net Imports	**31**	**23**	**23**	**24**	**16**	**14**	**18**	**27**	**8**	**28**
Electricity Sales by Sector										
Residential	1392	1409	1403	1406	1495	1476	1499	1694	1662	1667
Commercial	1343	1403	1402	1393	1614	1620	1632	1864	1864	1850
Industrial	1006	919	926	979	1011	1020	1021	991	986	1077
Transportation	6	7	7	7	9	9	10	14	14	15
Total	**3747**	**3737**	**3737**	**3785**	**4129**	**4127**	**4162**	**4563**	**4527**	**4609**
Direct Use	156	165	166	175	207	214	222	268	275	294
Total Electricity Use	**3903**	**3902**	**3904**	**3960**	**4335**	**4341**	**4384**	**4831**	**4801**	**4903**

Table A8. Electricity Supply, Disposition, Prices, and Emissions (Continued)
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
End-Use Prices										
(2007 cents per kilowatthour)										
Residential	10.6	9.8	9.8	10.5	11.3	11.1	11.2	12.2	11.8	12.2
Commercial	9.6	8.5	8.5	9.3	9.8	9.4	9.6	10.5	10.1	10.6
Industrial	6.4	5.7	5.7	6.4	6.7	6.4	6.5	7.3	7.0	7.4
Transportation	10.5	9.3	9.3	10.4	10.3	9.9	10.1	11.5	11.1	11.7
All Sectors Average	**9.1**	**8.3**	**8.3**	**9.0**	**9.6**	**9.3**	**9.4**	**10.4**	**10.1**	**10.4**
(nominal cents per kilowatthour)										
Residential	10.6	10.1	10.1	11.1	14.2	14.1	14.4	18.9	18.6	17.7
Commercial	9.6	8.8	8.8	9.8	12.2	12.0	12.4	16.3	16.0	15.3
Industrial	6.4	5.9	6.0	6.7	8.4	8.1	8.4	11.3	11.1	10.7
Transportation	10.5	9.6	9.7	10.9	12.9	12.6	13.0	17.8	17.5	16.9
All Sectors Average	**9.1**	**8.6**	**8.6**	**9.5**	**12.0**	**11.8**	**12.2**	**16.2**	**15.9**	**15.1**
Prices by Service Category										
(2007 cents per kilowatthour)										
Generation	6.0	5.3	5.2	6.0	6.4	6.1	6.2	7.2	6.9	7.3
Transmission	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9
Distribution	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
(nominal cents per kilowatthour)										
Generation	6.0	5.4	5.4	6.3	8.0	7.7	8.1	11.2	10.9	10.5
Transmission	0.7	0.7	0.8	0.8	1.0	1.1	1.1	1.4	1.4	1.3
Distribution	2.4	2.4	2.5	2.5	3.0	3.1	3.1	3.6	3.7	3.4
Electric Power Sector Emissions[1]										
Sulfur Dioxide (million tons)	8.95	6.09	6.15	7.51	3.89	3.97	3.86	3.64	3.57	3.74
Nitrogen Oxide (million tons)	3.29	2.29	2.29	2.37	2.09	2.07	2.10	2.11	2.10	2.12
Mercury (tons)	49.28	43.52	43.82	45.19	28.81	29.08	29.13	28.86	28.89	29.57

[1]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[2]Includes plants that only produce electricity.
[3]Includes electricity generation from fuel cells.
[4]Includes non-biogenic municipal waste. The Energy Information Administration estimates approximately 7 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy*, (Washington, DC, May 2007).
[5]Includes conventional hydroelectric, geothermal, wood, wood waste, biogenic municipal waste, landfill gas, other biomass, solar, and wind power.
[6]Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report North American Industry Classification System code 22).
[7]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.
[8]Includes refinery gas and still gas.
[9]Includes conventional hydroelectric, geothermal, wood, wood waste, all municipal waste, landfill gas, other biomass, solar, and wind power.
[10]Includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.
[11]Includes pumped storage, non-biogenic municipal waste, refinery gas, still gas, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 electric power sector generation; sales to utilities; net imports; electricity sales; and emissions: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008), and supporting databases. 2007 prices: EIA, AEO2009 National Energy Modeling System run NOSTIMLS.D041409A. **Projections**: EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A9. Electricity Generating Capacity
(Gigawatts)

Net Summer Capacity[1]	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Electric Power Sector[2]										
Power Only[3]										
Coal	306.7	316.4	316.4	316.4	321.1	323.0	322.4	331.9	333.5	347.9
Oil and Natural Gas Steam[4]	118.4	118.0	118.0	118.0	100.2	92.7	101.4	98.9	92.6	100.1
Combined Cycle	149.2	163.0	163.0	163.0	167.0	164.3	170.3	214.1	202.3	205.2
Combustion Turbine/Diesel	130.4	135.8	135.6	139.2	147.8	138.0	152.9	204.1	186.5	198.1
Nuclear Power[5]	100.5	101.2	101.2	101.2	113.1	110.3	108.4	115.0	110.1	112.6
Pumped Storage	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources[6]	100.8	114.9	124.9	114.9	120.0	155.1	121.7	132.1	159.7	138.2
Distributed Generation[7]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
Total	**927.5**	**970.7**	**980.6**	**974.2**	**990.6**	**1004.8**	**998.5**	**1117.6**	**1106.3**	**1123.8**
Combined Heat and Power[8]										
Coal	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Oil and Natural Gas Steam[4]	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Combined Cycle	31.8	31.8	31.8	31.8	32.5	32.5	32.5	32.5	32.5	32.5
Combustion Turbine/Diesel	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Renewable Sources[6]	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total	**40.3**	**40.4**	**40.4**	**40.4**	**41.0**	**41.0**	**41.0**	**41.0**	**41.0**	**41.0**
Cumulative Planned Additions[9]										
Coal	0.0	11.3	11.3	11.3	17.0	17.0	17.0	17.0	17.0	17.0
Oil and Natural Gas Steam[4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	13.8	13.8	13.8	15.3	15.3	15.3	15.3	15.3	15.3
Combustion Turbine/Diesel	0.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Nuclear Power	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources[6]	0.0	9.7	9.7	9.7	9.9	9.9	9.9	10.1	10.1	10.1
Distributed Generation[7]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.0**	**38.0**	**38.0**	**38.0**	**46.6**	**46.6**	**46.6**	**46.8**	**46.8**	**46.8**
Cumulative Unplanned Additions[9]										
Coal	0.0	0.0	0.0	0.0	1.0	2.0	1.0	11.8	12.5	26.6
Oil and Natural Gas Steam[4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	0.0	0.0	0.0	3.1	0.5	6.4	50.2	38.4	41.3
Combustion Turbine/Diesel	0.0	2.5	2.3	5.9	20.0	13.6	24.6	76.3	62.1	69.8
Nuclear Power	0.0	0.0	0.0	0.0	8.0	5.2	3.3	14.3	9.4	11.9
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources[6]	0.0	4.4	14.4	4.4	9.4	44.4	11.0	21.2	48.9	27.3
Distributed Generation[7]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
Total	**0.0**	**6.9**	**16.7**	**10.3**	**41.5**	**65.7**	**46.3**	**174.0**	**171.4**	**177.1**
Cumulative Electric Power Sector	**0.0**	**44.9**	**54.7**	**48.3**	**88.1**	**112.3**	**92.9**	**220.8**	**218.2**	**223.9**
Cumulative Retirements[10]										
Coal	0.0	0.9	0.9	1.6	3.8	2.8	2.3	3.8	2.8	2.3
Oil and Natural Gas Steam[4]	0.0	0.4	0.4	0.4	18.2	25.7	17.0	19.5	25.8	18.3
Combined Cycle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combustion Turbine/Diesel	0.0	0.3	0.3	0.3	5.8	9.2	5.3	5.8	9.2	5.3
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	4.4	4.4
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources[6]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.0**	**1.6**	**1.6**	**2.3**	**27.8**	**37.8**	**24.5**	**33.5**	**42.2**	**30.2**
Total Electric Power Sector Capacity	**967.8**	**1011.1**	**1020.9**	**1014.5**	**1031.6**	**1045.8**	**1039.5**	**1158.6**	**1147.3**	**1164.9**

Table A9. Electricity Generating Capacity (Continued)
(Gigawatts)

Net Summer Capacity[1]	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
End-Use Generators[11]										
Coal	4.0	4.0	4.0	4.0	4.8	5.7	5.6	5.7	7.1	7.9
Petroleum	1.3	1.4	1.4	2.6	1.4	1.4	2.6	1.4	1.4	2.7
Natural Gas	14.1	13.2	13.4	13.8	16.2	16.0	16.4	20.8	19.9	21.0
Other Gaseous Fuels	1.5	4.4	4.2	3.9	3.9	3.9	3.7	3.9	3.8	3.7
Renewable Sources[6]	6.1	7.6	7.9	7.5	18.8	20.6	18.1	26.3	28.5	26.4
Other	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Total	**27.9**	**31.4**	**31.8**	**32.6**	**45.9**	**48.4**	**47.3**	**59.0**	**61.5**	**62.6**
Cumulative Capacity Additions[9]	**0.0**	**3.5**	**3.9**	**4.8**	**18.0**	**20.5**	**19.5**	**31.1**	**33.6**	**34.8**

[1]Net summer capacity is the steady hourly output that generating equipment is expected to supply to system load (exclusive of auxiliary power), as demonstrated by tests during summer peak demand.
[2]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[3]Includes plants that only produce electricity. Includes capacity increases (uprates) at existing units.
[4]Includes oil-, gas-, and dual-fired capacity.
[5]Nuclear capacity includes 3.4 gigawatts of uprates through 2030.
[6]Includes conventional hydroelectric, geothermal, wood, wood waste, all municipal waste, landfill gas, other biomass, solar, and wind power. Facilities co-firing biomass and coal are classified as coal.
[7]Primarily peak load capacity fueled by natural gas.
[8]Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report North American Industry Classification System code 22).
[9]Cumulative additions after December 31, 2007.
[10]Cumulative retirements after December 31, 2007.
[11]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 capacity and projected planned additions: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary).
Projections: EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A10. Electricity Trade

(Billion Kilowatthours, Unless Otherwise Noted)

Electricity Trade	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Interregional Electricity Trade										
Gross Domestic Sales										
Firm Power	124.5	118.7	118.7	118.7	81.8	81.8	81.8	37.6	37.6	37.6
Economy	119.3	200.9	191.6	207.9	214.0	230.3	232.0	198.6	188.9	186.5
Total	**243.8**	**319.6**	**310.3**	**326.6**	**295.7**	**312.1**	**313.8**	**236.2**	**226.5**	**224.0**
Gross Domestic Sales (million 2007										
Firm Power	7133.1	6799.0	6799.0	6799.0	4683.5	4683.5	4683.5	2152.7	2152.7	2152.7
Economy	7447.7	8904.5	8323.2	11340.4	12267.	12682.6	12766.6	13288.	11899.0	12768.4
Total	**14580.7**	**15703.6**	**15122.2**	**18139.4**	**16951.3**	**17366.1**	**17450.1**	**15441.3**	**14051.6**	**14921.1**
International Electricity Trade										
Imports from Canada and Mexico										
Firm Power	15.8	16.6	16.6	16.6	7.3	7.3	7.3	0.4	0.4	0.4
Economy	35.6	28.2	28.2	29.3	29.2	27.4	31.4	45.4	25.9	46.0
Total	**51.4**	**44.7**	**44.7**	**45.9**	**36.5**	**34.8**	**38.7**	**45.8**	**26.3**	**46.4**
Exports to Canada and Mexico										
Firm Power	3.9	0.9	0.9	0.9	0.5	0.5	0.5	0.0	0.0	0.0
Economy	16.2	20.6	20.6	20.6	20.4	20.4	20.4	18.5	18.5	18.5
Total	**20.1**	**21.5**	**21.5**	**21.5**	**20.9**	**20.9**	**20.9**	**18.5**	**18.5**	**18.5**

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports. Firm Power Sales are capacity sales, meaning the delivery of the power is scheduled as part of the normal operating conditions of the affected electric systems. Economy Sales are subject to curtailment or cessation of delivery by the supplier in accordance with prior agreements or under specified conditions.

Sources: 2007 interregional firm electricity trade data: North American Electric Reliability Council (NERC), Electricity Sales and Demand Database 2007. 2007 Mexican electricity trade data: Energy Information Administration (EIA), *Electric Power Annual 2007* DOE/EIA-0348(2007) (Washington, DC, December 2008). 2007 Canadian electricity trade data: National Energy Board, *Annual Report 2007*. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A11. Liquid Fuels Supply and Disposition
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Crude Oil										
Domestic Crude Production[1]	5.07	5.52	5.52	5.62	5.86	5.79	6.48	7.21	7.14	7.37
Alaska	0.72	0.69	0.69	0.69	0.64	0.64	0.72	0.59	0.59	0.57
Lower 48 States	4.35	4.84	4.84	4.93	5.22	5.15	5.76	6.62	6.55	6.80
Net Imports	10.00	8.23	8.31	8.10	7.99	7.97	7.29	7.02	6.88	6.95
Gross Imports	10.03	8.26	8.34	8.13	8.02	8.00	7.33	7.06	6.92	6.99
Exports	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Other Crude Supply[2]	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Crude Supply	**15.16**	**13.75**	**13.83**	**13.72**	**13.85**	**13.76**	**13.77**	**14.23**	**14.02**	**14.32**
Other Supply										
Natural Gas Plant Liquids	1.78	1.88	1.87	1.91	1.83	1.81	1.91	1.91	1.87	1.92
Net Product Imports	2.09	1.73	1.80	1.66	1.51	1.50	1.49	1.43	1.39	1.40
Gross Refined Product Imports[3]	1.94	1.62	1.67	1.64	1.52	1.52	1.60	1.52	1.51	1.54
Unfinished Oil Imports	0.72	0.70	0.71	0.58	0.71	0.70	0.58	0.76	0.74	0.65
Blending Component Imports	0.75	0.63	0.64	0.62	0.65	0.65	0.66	0.67	0.66	0.69
Exports	1.32	1.22	1.21	1.18	1.38	1.38	1.35	1.52	1.52	1.47
Refinery Processing Gain[4]	1.00	0.94	0.94	0.97	0.92	0.93	0.93	0.83	0.82	0.86
Other Inputs	0.74	1.15	1.15	1.22	1.69	1.89	1.98	2.58	2.77	3.08
Ethanol	0.45	0.84	0.85	0.84	1.12	1.23	1.28	1.66	1.72	1.91
Domestic Production	0.43	0.86	0.86	0.84	1.07	1.19	1.24	1.52	1.61	1.43
Net Imports	0.02	-0.02	-0.01	-0.00	0.04	0.04	0.04	0.15	0.11	0.49
Biodiesel	0.03	0.05	0.05	0.06	0.12	0.12	0.10	0.12	0.13	0.13
Domestic Production	0.03	0.05	0.05	0.06	0.12	0.12	0.10	0.12	0.13	0.13
Net Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquids from Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquids from Coal	0.00	0.00	0.00	0.00	0.05	0.11	0.10	0.11	0.20	0.26
Liquids from Biomass	0.00	0.00	0.00	0.00	0.04	0.07	0.07	0.26	0.33	0.33
Other[5]	0.26	0.25	0.25	0.32	0.37	0.36	0.42	0.42	0.40	0.45
Total Primary Supply[6]	**20.77**	**19.45**	**19.61**	**19.48**	**19.79**	**19.89**	**20.08**	**20.98**	**20.87**	**21.59**
Liquid Fuels Consumption										
by Fuel										
Liquefied Petroleum Gases	2.09	1.83	1.88	1.99	1.75	1.76	1.82	1.56	1.58	1.74
E85[7]	0.00	0.00	0.00	0.00	0.35	0.51	0.58	1.11	1.20	1.50
Motor Gasoline[8]	9.29	9.40	9.43	9.34	8.76	8.67	8.60	8.36	8.24	8.04
Jet Fuel[9]	1.62	1.42	1.45	1.45	1.63	1.63	1.65	1.97	1.94	1.99
Distillate Fuel Oil[10]	4.20	4.05	4.10	4.08	4.55	4.56	4.62	5.18	5.14	5.42
Diesel	3.47	3.41	3.46	3.47	4.00	4.01	4.06	4.66	4.63	4.91
Residual Fuel Oil	0.72	0.72	0.72	0.63	0.70	0.70	0.70	0.72	0.71	0.72
Other[11]	2.74	2.22	2.22	2.19	2.21	2.22	2.24	2.12	2.11	2.25
by Sector										
Residential and Commercial	1.11	1.12	1.11	1.05	0.99	0.98	0.99	0.98	0.97	0.97
Industrial[12]	5.26	4.31	4.37	4.46	4.25	4.28	4.34	3.97	3.97	4.28
Transportation	14.25	13.95	14.06	13.96	14.47	14.56	14.65	15.84	15.77	16.18
Electric Power[13]	0.30	0.27	0.26	0.22	0.23	0.23	0.23	0.24	0.24	0.23
Total	**20.65**	**19.64**	**19.81**	**19.69**	**19.95**	**20.05**	**20.21**	**21.02**	**20.92**	**21.67**
Discrepancy[14]	**0.12**	**-0.19**	**-0.20**	**-0.20**	**-0.16**	**-0.16**	**-0.13**	**-0.04**	**-0.05**	**-0.08**

Table A11. Liquid Fuels Supply and Disposition (Continued)

(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Domestic Refinery Distillation Capacity[15]	17.4	18.0	18.0	18.0	18.2	18.2	18.2	18.5	18.4	18.4
Capacity Utilization Rate (percent)[16]	89.0	78.0	78.5	77.8	77.6	77.1	77.1	78.6	77.6	79.2
Net Import Share of Product Supplied (percent)	58.3	51.2	51.5	50.1	48.2	47.8	44.0	41.0	40.1	40.9
Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2007 dollars)	280.13	167.57	169.66	261.60	376.01	375.89	344.32	368.79	360.63	376.65

[1]Includes lease condensate.
[2]Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude stock withdrawals minus crude product supplied.
[3]Includes other hydrocarbons and alcohols.
[4]The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.
[5]Includes petroleum product stock withdrawals; and domestic sources of other blending components, other hydrocarbons, ethers, and renewable feedstocks for the on-site production of diesel and gasoline.
[6]Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.
[7]E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.
[8]Includes ethanol and ethers blended into gasoline.
[9]Includes only kerosene type.
[10]Includes distillate fuel oil and kerosene from petroleum and biomass feedstocks.
[11]Includes aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, methanol, liquid hydrogen,and miscellaneous petroleum products.
[12]Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.
[13]Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.
[14]Balancing item. Includes unaccounted for supply, losses, and gains.
[15]End-of-year operable capacity.
[16]Rate is calculated by dividing the gross annual input to atmospheric crude oil distillation units by their operable refining capacity in barrels per calendar day.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 petroleum product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). Other 2007 data: EIA, *Petroleum Supply Annual 2007,* DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A12. Petroleum Product Prices

(2007 Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Crude Oil Prices (2007 dollars per barrel)										
Imported Low Sulfur Light Crude Oil[1]	72.33	52.13	52.16	80.16	116.56	116.79	115.45	130.50	130.92	130.43
Imported Crude Oil[1]	63.83	49.05	48.99	77.56	114.35	114.50	112.05	124.45	124.36	124.60
Delivered Sector Product Prices										
Residential										
Liquefied Petroleum Gases	213.5	177.1	177.0	221.1	284.6	285.1	281.1	300.5	300.7	300.2
Distillate Fuel Oil	272.7	185.0	185.2	259.2	338.5	341.7	334.3	371.9	371.3	369.9
Commercial										
Distillate Fuel Oil	221.7	148.0	148.4	222.8	307.4	311.7	304.9	340.2	339.8	340.4
Residual Fuel Oil	154.3	86.7	86.8	164.2	252.3	252.3	249.7	267.8	267.6	269.1
Residual Fuel Oil (2007 dollars per barrel)	64.80	36.41	36.47	68.96	105.96	105.98	104.88	112.46	112.37	113.04
Industrial[2]										
Liquefied Petroleum Gases	199.9	141.5	142.3	186.7	249.0	249.4	246.0	263.6	263.8	265.0
Distillate Fuel Oil	232.3	145.5	146.1	220.2	311.3	316.6	309.6	344.3	344.2	345.8
Residual Fuel Oil	158.6	147.0	147.4	230.2	310.0	310.3	313.4	331.7	330.5	340.2
Residual Fuel Oil (2007 dollars per barrel)	66.61	61.73	61.89	96.70	130.21	130.32	131.64	139.30	138.81	142.89
Transportation										
Liquefied Petroleum Gases	213.8	175.7	175.6	219.5	282.6	283.0	278.9	297.6	297.7	297.3
Ethanol (E85)[3]	254.4	178.6	179.0	241.7	275.5	280.8	278.0	296.4	293.5	285.5
Ethanol Wholesale Price	212.4	187.0	187.6	192.8	205.3	208.7	201.1	209.3	204.3	193.8
Motor Gasoline[4]	282.2	213.8	214.3	283.9	358.2	362.2	359.9	384.9	382.1	388.4
Jet Fuel[5]	217.4	139.9	140.6	216.5	300.1	301.8	299.1	333.3	333.0	332.4
Diesel Fuel (distillate fuel oil)[6]	286.8	199.7	200.6	274.9	358.9	364.4	356.8	388.6	388.3	391.7
Residual Fuel Oil	141.2	99.1	98.6	181.1	256.4	256.9	261.4	282.0	281.9	294.1
Residual Fuel Oil (2007 dollars per barrel)	59.32	41.60	41.40	76.07	107.68	107.90	109.80	118.43	118.42	123.54
Electric Power[7]										
Distillate Fuel Oil	204.9	135.6	135.8	209.2	288.0	291.0	283.6	322.2	321.9	320.5
Residual Fuel Oil	128.2	99.9	99.9	197.7	262.2	262.6	277.7	286.2	288.1	309.5
Residual Fuel Oil (2007 dollars per barrel)	53.86	41.97	41.97	83.03	110.10	110.29	116.64	120.21	121.01	129.98
Refined Petroleum Product Prices[8]										
Liquefied Petroleum Gases	158.4	139.7	139.3	179.2	240.2	240.4	235.7	257.3	256.9	254.5
Motor Gasoline[4]	280.2	213.8	214.3	283.9	358.1	362.2	359.9	384.9	382.1	388.4
Jet Fuel[5]	217.4	139.9	140.6	216.5	300.1	301.8	299.1	333.3	333.0	332.4
Distillate Fuel Oil	274.3	186.1	186.8	260.9	348.7	354.0	346.8	380.5	380.2	383.2
Residual Fuel Oil	140.2	103.6	103.5	189.6	262.8	263.3	269.8	286.9	287.2	301.1
Residual Fuel Oil (2007 dollars per barrel)	58.89	43.52	43.47	79.62	110.38	110.59	113.34	120.49	120.63	126.47
Average	**249.2**	**186.6**	**186.8**	**254.9**	**331.8**	**335.1**	**331.1**	**360.3**	**358.5**	**361.4**

Table A12. Petroleum Product Prices (Continued)

(Nominal Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Crude Oil Prices (nominal dollars per barrel)										
Imported Low Sulfur Light Crude Oil[1]	72.33	54.00	54.13	84.42	146.20	148.30	149.14	202.00	207.19	189.10
Imported Crude Oil[1]	63.83	50.81	50.84	81.69	143.44	145.39	144.74	192.63	196.81	180.66
Delivered Sector Product Prices										
Residential										
Liquefied Petroleum Gases	213.5	183.4	183.6	232.9	357.0	362.0	363.1	465.2	475.8	435.2
Distillate Fuel Oil	272.7	191.6	192.2	273.0	424.6	433.9	431.8	575.6	587.6	536.3
Commercial										
Distillate Fuel Oil	221.7	153.3	154.0	234.6	385.5	395.8	393.8	526.6	537.8	493.5
Residual Fuel Oil	154.3	89.8	90.1	172.9	316.5	320.4	322.6	414.5	423.4	390.2
Industrial[2]										
Liquefied Petroleum Gases	199.9	146.6	147.6	196.6	312.3	316.7	317.8	408.0	417.4	384.2
Distillate Fuel Oil	232.3	150.7	151.6	231.9	390.5	402.0	400.0	533.0	544.7	501.4
Residual Fuel Oil	158.6	152.2	152.9	242.5	388.9	394.0	404.9	513.3	523.0	493.3
Transportation										
Liquefied Petroleum Gases	213.8	182.0	182.2	231.2	354.5	359.3	360.3	460.6	471.1	431.0
Ethanol (E85)[3]	254.4	185.0	185.8	254.5	345.6	356.5	359.1	458.8	464.5	414.0
Ethanol Wholesale Price	212.4	193.7	194.7	203.1	257.5	265.0	259.8	323.9	323.3	280.9
Motor Gasoline[4]	282.2	221.5	222.4	299.0	449.3	460.0	464.9	595.8	604.7	563.1
Jet Fuel[5]	217.4	144.9	145.9	228.0	376.4	383.3	386.4	515.9	527.0	482.0
Diesel Fuel (distillate fuel oil)[6]	286.8	206.8	208.2	289.6	450.2	462.7	460.9	601.5	614.5	567.9
Residual Fuel Oil	141.2	102.6	102.3	190.8	321.6	326.2	337.7	436.4	446.2	426.5
Electric Power[7]										
Distillate Fuel Oil	204.9	140.4	140.9	220.4	361.3	369.5	366.4	498.7	509.5	464.7
Residual Fuel Oil	128.2	103.5	103.7	208.2	328.8	333.4	358.8	443.0	456.0	448.7
Refined Petroleum Product Prices[8]										
Liquefied Petroleum Gases	158.4	144.7	144.6	188.7	301.4	305.2	304.5	398.3	406.6	369.1
Motor Gasoline[4]	280.2	221.4	222.4	299.0	449.2	459.9	464.9	595.8	604.7	563.1
Jet Fuel[5]	217.4	144.9	145.9	228.0	376.4	383.3	386.4	515.9	527.0	482.0
Distillate Fuel Oil	274.3	192.8	193.9	274.7	437.4	449.5	448.0	588.9	601.6	555.7
Residual Fuel Oil (nominal dollars per barrel)	58.89	45.08	45.11	83.86	138.46	140.42	146.41	186.49	190.91	183.36
Average	**249.2**	**193.3**	**193.8**	**268.5**	**416.2**	**425.6**	**427.7**	**557.7**	**567.4**	**524.0**

[1]Weighted average price delivered to U.S. refiners.

[2]Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

[3]E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

[4]Sales weighted-average price for all grades. Includes Federal, State and local taxes.

[5]Includes only kerosene type.

[6]Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

[7]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

[8]Weighted averages of end-use fuel prices are derived from the prices in each sector and the corresponding sectoral consumption.

Note: Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 imported low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2007 imported crude oil price: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 prices for motor gasoline, distillate fuel oil, and jet fuel are based on: EIA, *Petroleum Marketing Annual 2007*, DOE/EIA-0487(2007) (Washington, DC, August 2008). 2007 residential, commercial, industrial, and transportation sector petroleum product prices are derived from: EIA, Form EIA-782A, "Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report." 2007 electric power prices based on: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2007 E85 prices derived from monthly prices in the Clean Cities Alternative Fuel Price Report. 2007 wholesale ethanol prices derived from Bloomburg U.S. average rack price. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A13. Natural Gas Supply, Disposition, and Prices
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Production										
Dry Gas Production[1]	19.30	20.10	20.02	20.38	20.57	19.58	21.48	23.48	23.03	23.60
Supplemental Natural Gas[2]	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Net Imports	**3.79**	**2.41**	**2.34**	**2.50**	**1.79**	**1.85**	**1.86**	**0.80**	**0.38**	**0.66**
Pipeline[3]	3.06	2.02	1.96	2.02	0.40	0.47	0.48	-0.02	-0.43	-0.18
Liquefied Natural Gas	0.72	0.38	0.38	0.47	1.40	1.38	1.38	0.82	0.81	0.85
Total Supply	**23.14**	**22.57**	**22.42**	**22.94**	**22.43**	**21.50**	**23.40**	**24.34**	**23.47**	**24.33**
Consumption by Sector										
Residential	4.72	4.97	4.92	4.79	4.90	4.86	4.96	4.93	4.87	4.93
Commercial	3.01	3.18	3.18	3.06	3.24	3.23	3.25	3.49	3.43	3.44
Industrial[4]	6.63	5.83	6.00	6.59	6.30	6.36	6.65	6.36	6.34	6.85
Natural-Gas-to-Liquids Heat and Power[5]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas to Liquids Production[6]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electric Power[7]	6.87	6.13	5.91	6.25	6.05	5.22	6.54	7.40	6.70	6.93
Transportation[8]	0.02	0.03	0.03	0.03	0.06	0.07	0.07	0.08	0.08	0.09
Pipeline Fuel	0.62	0.62	0.62	0.62	0.65	0.60	0.67	0.69	0.68	0.70
Lease and Plant Fuel[9]	1.17	1.25	1.24	1.24	1.26	1.19	1.29	1.42	1.40	1.43
Total	**23.05**	**22.01**	**21.89**	**22.57**	**22.46**	**21.53**	**23.43**	**24.36**	**23.50**	**24.36**
Discrepancy[10]	**0.09**	**0.56**	**0.53**	**0.37**	**-0.03**	**-0.03**	**-0.03**	**-0.02**	**-0.03**	**-0.03**
Natural Gas Prices										
(2007 dollars per million Btu)										
Henry Hub Spot Price	6.96	5.14	5.11	6.66	7.53	7.47	7.43	8.91	8.83	9.25
Average Lower 48 Wellhead Price[11]	6.22	4.55	4.51	5.88	6.65	6.60	6.56	7.87	7.80	8.17
(2007 dollars per thousand cubic feet)										
Average Lower 48 Wellhead Price[11]	6.39	4.67	4.64	6.05	6.84	6.79	6.75	8.09	8.01	8.40
Delivered Prices										
(2007 dollars per thousand cubic feet)										
Residential	13.05	11.51	11.51	12.43	12.97	12.91	12.85	14.45	14.35	14.71
Commercial	11.30	9.77	9.73	10.84	11.47	11.39	11.44	12.99	12.87	13.32
Industrial[4]	7.73	5.71	5.65	7.10	7.77	7.68	7.69	9.04	8.94	9.33
Electric Power[7]	7.22	5.36	5.27	6.77	7.37	7.22	7.35	8.69	8.57	8.94
Transportation[12]	15.93	13.94	13.88	15.32	15.47	15.36	15.31	16.29	16.14	16.70
Average[13]	**9.26**	**7.69**	**7.64**	**8.80**	**9.50**	**9.48**	**9.37**	**10.77**	**10.71**	**11.05**

Table A13. Natural Gas Supply, Disposition, and Prices (Continued)
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Natural Gas Prices										
(nominal dollars per million Btu)										
Henry Hub Spot Price	6.96	5.33	5.30	7.01	9.44	9.49	9.60	13.79	13.97	13.42
Average Lower 48 Wellhead Price[11]	6.22	4.71	4.68	6.19	8.34	8.38	8.48	12.18	12.34	11.85
(nominal dollars per thousand cubic feet)										
Average Lower 48 Wellhead Price[11]	6.39	4.84	4.81	6.37	8.58	8.62	8.72	12.52	12.68	12.18
Delivered Prices										
(nominal dollars per thousand cubic feet)										
Residential	13.05	11.93	11.94	13.09	16.27	16.39	16.60	22.36	22.71	21.33
Commercial	11.30	10.12	10.10	11.42	14.39	14.46	14.77	20.11	20.37	19.31
Industrial[4]	7.73	5.92	5.87	7.48	9.75	9.75	9.93	14.00	14.14	13.52
Electric Power[7]	7.22	5.55	5.47	7.13	9.25	9.17	9.49	13.45	13.57	12.96
Transportation[12]	15.93	14.44	14.40	16.13	19.40	19.51	19.78	25.22	25.54	24.21
Average[13]	**9.26**	**7.97**	**7.93**	**9.26**	**11.92**	**12.04**	**12.10**	**16.67**	**16.95**	**16.02**

[1]Marketed production (wet) minus extraction losses.
[2]Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.
[3]Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida, as well as gas from Canada and Mexico.
[4]Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.
[5]Includes any natural gas used in the process of converting natural gas to liquid fuel that is not actually converted.
[6]Includes any natural gas that is converted into liquid fuel.
[7]Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.
[8]Compressed natural gas used as vehicle fuel.
[9]Represents natural gas used in well, field, and lease operations, and in natural gas processing plant machinery.
[10]Balancing item. Natural gas lost as a result of converting flow data measured at varying temperatures and pressures to a standard temperature and pressure and the merger of different data reporting systems which vary in scope, format, definition, and respondent type. In addition, 2006 and 2007 values include net storage injections.
[11]Represents lower 48 onshore and offshore supplies.
[12]Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.
[13]Weighted average prices. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 supply values; and lease, plant, and pipeline fuel consumption; and wellhead price: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). Other 2007 consumption based on: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 residential and commercial delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 electric power prices: EIA, *Electric Power Monthly*, DOE/EIA-0226, April 2007 and April 2008, Table 4.13.B. 2007 industrial delivered prices are estimated based on: EIA, *Manufacturing Energy Consumption Survey 1994* and industrial and wellhead prices from the *Natural Gas Annual 2006*, DOE/EIA-0131(2006) (Washington, DC, October 2007) and the *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 transportation sector delivered prices are model results. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A14. Oil and Gas Supply

Production and Supply	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Crude Oil										
Lower 48 Average Wellhead Price[1] (2007 dollars per barrel)	**65.70**	**48.87**	**48.85**	**77.30**	**113.80**	**114.07**	**110.99**	**122.91**	**122.75**	**122.82**
Production (million barrels per day)[2]										
United States Total	5.07	5.52	5.52	5.62	5.86	5.79	6.48	7.21	7.14	7.37
Lower 48 Onshore	2.91	2.90	2.90	2.92	3.11	3.11	3.37	3.78	3.77	4.06
Lower 48 Offshore	1.44	1.94	1.94	2.01	2.10	2.04	2.39	2.84	2.78	2.74
Alaska	0.72	0.69	0.69	0.69	0.64	0.64	0.72	0.59	0.59	0.57
Lower 48 End of Year Reserves[2] (billion barrels)	**18.62**	**18.78**	**18.78**	**19.21**	**20.62**	**20.44**	**22.50**	**24.66**	**24.39**	**25.38**
Natural Gas										
Lower 48 Average Wellhead Price[1] (2007 dollars per million Btu)										
Henry Hub Spot Price	6.96	5.14	5.11	6.66	7.53	7.47	7.43	8.91	8.83	9.25
Average Lower 48 Wellhead Price[1]	6.22	4.55	4.51	5.88	6.65	6.60	6.56	7.87	7.80	8.17
(2007 dollars per thousand cubic feet)										
Average Lower 48 Wellhead Price[1]	6.39	4.67	4.64	6.05	6.84	6.79	6.75	8.09	8.01	8.40
Dry Production (trillion cubic feet)[3]										
United States Total	19.30	20.10	20.02	20.38	20.57	19.58	21.48	23.48	23.03	23.60
Lower 48 Onshore	15.91	16.32	16.24	16.75	15.56	15.50	16.11	16.09	15.77	16.76
Associated-Dissolved[4]	1.39	1.41	1.41	1.41	1.32	1.32	1.37	1.29	1.29	1.32
Non-Associated	14.51	14.91	14.83	15.34	14.24	14.18	14.74	14.81	14.48	15.44
Conventional	5.36	4.53	4.52	4.70	3.40	3.39	3.36	2.16	2.14	2.18
Unconventional	9.15	10.38	10.32	10.64	10.84	10.78	11.38	12.65	12.34	13.26
Gas Shale	1.17	2.24	2.23	2.31	2.78	2.71	2.97	3.88	3.66	4.15
Coalbed Methane	1.84	1.75	1.73	1.79	1.72	1.73	1.78	1.96	1.96	2.01
Tight Gas	6.15	6.39	6.35	6.54	6.34	6.35	6.62	6.81	6.71	7.10
Lower 48 Offshore	2.97	3.39	3.38	3.26	3.85	3.72	4.23	5.40	5.28	4.88
Associated-Dissolved[4]	0.62	0.72	0.72	0.72	0.95	0.93	1.00	1.15	1.12	1.16
Non-Associated	2.35	2.67	2.66	2.55	2.90	2.79	3.23	4.25	4.16	3.72
Alaska	0.42	0.39	0.39	0.37	1.17	0.36	1.14	1.99	1.99	1.96
Lower 48 End of Year Dry Reserves[3] (trillion cubic feet)	**225.18**	**228.25**	**228.12**	**230.11**	**203.44**	**199.09**	**213.14**	**209.23**	**203.35**	**211.98**
Supplemental Gas Supplies (trillion cubic	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**
Total Lower 48 Wells Drilled (thousands)	**53.51**	**40.95**	**40.83**	**45.17**	**45.89**	**43.50**	**48.20**	**51.41**	**49.25**	**53.76**

[1]Represents lower 48 onshore and offshore supplies.
[2]Includes lease condensate.
[3]Marketed production (wet) minus extraction losses.
[4]Gas which occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved).
[5]Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2006 and 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 crude oil lower 48 average wellhead price: Energy Information Administration (EIA), *Petroleum Marketing Annual 2007*, DOE/EIA-0487(2007) (Washington, DC, August 2008). 2007 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: EIA, *Petroleum Supply Annual 2007,* DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). 2007 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). Other 2007 values: EIA, Office of Integrated Analysis and Forecasting. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A15. Coal Supply, Disposition, and Prices
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Production[1]										
Appalachia	378	356	356	383	332	334	333	323	327	353
Interior	147	157	157	163	176	187	206	205	212	252
West	621	632	633	632	692	702	671	716	734	735
East of the Mississippi	478	459	458	500	456	460	478	463	471	529
West of the Mississippi	668	686	687	677	745	763	732	780	801	812
Total	**1147**	**1145**	**1145**	**1177**	**1201**	**1223**	**1210**	**1243**	**1272**	**1341**
Waste Coal Supplied[2]	**14**	**11**	**11**	**11**	**9**	**10**	**12**	**10**	**11**	**13**
Net Imports										
Imports[3]	34	34	34	34	60	61	48	57	62	53
Exports	59	73	73	82	54	54	53	37	40	44
Total	**-25**	**-39**	**-39**	**-48**	**5**	**7**	**-5**	**20**	**22**	**10**
Total Supply[4]	**1136**	**1117**	**1117**	**1140**	**1215**	**1240**	**1217**	**1273**	**1305**	**1363**
Consumption by Sector										
Residential and Commercial	4	3	3	3	3	3	3	3	3	3
Coke Plants	23	19	20	21	18	19	19	15	15	18
Other Industrial[5]	57	48	49	60	53	54	56	53	53	57
Coal-to-Liquids Heat and Power	0	0	0	0	8	18	16	17	32	38
Coal to Liquids Production	0	0	0	0	7	15	14	14	27	32
Electric Power[6]	1046	1046	1045	1056	1125	1131	1110	1170	1174	1215
Total	**1129**	**1117**	**1117**	**1140**	**1215**	**1240**	**1218**	**1273**	**1305**	**1363**
Discrepancy and Stock Change[7]	**7**	**-0**	**-0**	**0**	**-0**	**0**	**-0**	**-0**	**0**	**-0**
Average Minemouth Price[8]										
(2007 dollars per short ton)	25.82	26.59	26.65	29.45	27.44	27.38	27.90	27.91	27.87	29.10
(2007 dollars per million Btu)	1.27	1.31	1.32	1.44	1.37	1.37	1.39	1.40	1.40	1.46
Delivered Prices (2007 dollars per short ton)[9]										
Coke Plants	94.97	104.32	104.78	114.53	115.01	115.04	115.37	116.78	115.98	115.57
Other Industrial[5]	54.42	51.37	51.50	54.81	55.65	55.39	54.65	57.60	57.41	57.22
Coal to Liquids	- -	- -	- -	- -	16.20	18.10	17.89	18.14	19.51	20.96
Electric Power										
(2007 dollars per short ton)	35.45	36.77	36.83	37.71	38.53	38.81	38.04	40.52	40.77	40.61
(2007 dollars per million Btu)	1.78	1.86	1.86	1.89	1.95	1.96	1.92	2.04	2.04	2.04
Average	**37.60**	**38.56**	**38.67**	**40.03**	**40.17**	**40.13**	**39.50**	**41.55**	**41.33**	**41.30**
Exports[10]	70.25	72.80	73.12	83.77	87.97	87.93	89.48	84.76	86.85	80.02

Table A15. Coal Supply, Disposition, and Prices (Continued)
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Average Minemouth Price[8]										
(nominal dollars per short ton)	25.82	27.55	27.65	31.02	34.42	34.77	36.04	43.20	44.10	42.20
(nominal dollars per million Btu)	1.27	1.36	1.37	1.52	1.72	1.74	1.80	2.17	2.22	2.11
Delivered Prices (nominal dollars per short										
Coke Plants	94.97	108.06	108.73	120.62	144.26	146.08	149.04	180.75	183.55	167.56
Other Industrial[5]	54.42	53.21	53.44	57.73	69.81	70.33	70.59	89.16	90.86	82.96
Coal to Liquids	- -	- -	- -	- -	20.31	22.98	23.11	28.07	30.87	30.39
Electric Power										
(nominal dollars per short ton)	35.45	38.09	38.22	39.72	48.33	49.28	49.14	62.72	64.53	58.88
(nominal dollars per million Btu)	1.78	1.93	1.93	1.99	2.44	2.48	2.48	3.16	3.24	2.95
Average	**37.60**	**39.94**	**40.13**	**42.16**	**50.39**	**50.95**	**51.03**	**64.31**	**65.41**	**59.88**
Exports[10]	70.25	75.42	75.88	88.23	110.34	111.66	115.59	131.19	137.45	116.02

[1]Includes anthracite, bituminous coal, subbituminous coal, and lignite.
[2]Includes waste coal consumed by the electric power and industrial sectors. Waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in the consumption data.
[3]Excludes imports to Puerto Rico and the U.S. Virgin Islands.
[4]Production plus waste coal supplied plus net imports.
[5]Includes consumption for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public. Excludes all coal use in the coal-to-liquids process.
[6]Includes all electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[7]Balancing item: the sum of production, net imports, and waste coal supplied minus total consumption.
[8]Includes reported prices for both open market and captive mines.
[9]Prices weighted by consumption; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.
[10]F.a.s. price at U.S. port of exit.
- - = Not applicable.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 data based on: Energy Information Administration (EIA), *Annual Coal Report 2007*, DOE/EIA-0584(2007) (Washington, DC, September 2008); EIA, *Quarterly Coal Report, October-December 2007*, DOE/EIA-0121(2007/4Q) (Washington, DC, March 2008); and EIA, AEO2009 National Energy Modeling System run NOSTIMLS.D041409A. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A16. Renewable Energy Generating Capacity and Generation
(Gigawatts, Unless Otherwise Noted)

Capacity and Generation	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Electric Power Sector[1]										
Net Summer Capacity										
Conventional Hydropower	76.72	76.73	76.73	76.73	77.05	77.08	77.02	77.48	77.27	77.58
Geothermal[2]	2.36	2.53	2.53	2.53	2.60	3.01	2.66	3.03	3.30	3.00
Municipal Waste[3]	3.43	4.04	4.09	4.04	4.08	4.34	4.12	4.09	4.34	4.15
Wood and Other Biomass[4,5]	2.18	2.20	2.20	2.20	2.76	5.34	4.22	6.43	8.01	8.86
Solar Thermal	0.53	0.54	0.54	0.54	0.81	0.81	0.81	0.86	0.86	0.86
Solar Photovoltaic[6]	0.04	0.06	0.06	0.06	0.21	0.21	0.21	0.38	0.38	0.38
Wind	16.19	29.43	39.43	29.46	32.98	64.76	33.07	40.31	66.03	43.80
Offshore Wind	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20
Total	**101.46**	**115.54**	**125.58**	**115.57**	**120.69**	**155.75**	**122.32**	**132.78**	**160.40**	**138.83**
Generation (billion kilowatthours)										
Conventional Hydropower	245.86	268.04	268.04	268.05	296.49	296.27	296.29	299.02	297.44	298.97
Geothermal[2]	14.84	17.78	17.78	17.78	18.63	21.86	19.11	22.01	24.18	21.80
Biogenic Municipal Waste[7]	14.42	19.32	19.66	19.30	19.63	21.66	19.95	19.68	21.66	20.17
Wood and Other Biomass[5]	10.38	12.57	12.41	28.07	104.67	92.15	117.82	134.72	125.89	140.44
Dedicated Plants	8.41	10.87	10.64	12.85	17.91	35.55	28.74	45.19	56.05	62.27
Cofiring	1.97	1.70	1.76	15.22	86.75	56.60	89.08	89.52	69.84	78.17
Solar Thermal	0.60	0.99	0.99	0.99	1.88	1.88	1.88	2.02	2.02	2.02
Solar Photovoltaic[6]	0.01	0.14	0.14	0.14	0.49	0.49	0.49	0.94	0.94	0.94
Wind	32.14	80.39	111.68	80.50	91.93	200.49	92.45	116.71	204.46	129.38
Offshore Wind	0.00	0.00	0.00	0.00	0.75	0.75	0.75	0.75	0.75	0.75
Total	**318.25**	**399.22**	**430.69**	**414.82**	**534.48**	**635.56**	**548.75**	**595.84**	**677.34**	**614.47**
End-Use Generators[8]										
Net Summer Capacity										
Conventional Hydropower[9]	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste[10]	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Biomass	4.64	4.71	4.71	4.65	6.23	7.22	7.28	11.63	13.30	13.23
Solar Photovoltaic[6]	0.43	1.81	1.86	1.73	11.44	10.78	9.72	13.24	12.30	11.78
Wind	0.04	0.05	0.30	0.04	0.14	1.60	0.09	0.36	1.82	0.31
Total	**6.15**	**7.60**	**7.91**	**7.45**	**18.85**	**20.64**	**18.12**	**26.26**	**28.46**	**26.35**
Generation (billion kilowatthours)										
Conventional Hydropower[9]	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste[10]	2.01	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Biomass	28.13	28.54	28.57	28.20	39.01	46.78	47.17	79.17	92.46	90.81
Solar Photovoltaic[6]	0.68	2.91	2.99	2.78	18.88	17.73	16.02	21.87	20.26	19.49
Wind	0.06	0.07	0.39	0.06	0.20	2.22	0.12	0.52	2.54	0.45
Total	**33.33**	**36.72**	**37.16**	**36.24**	**63.29**	**71.94**	**68.51**	**106.76**	**120.47**	**115.95**

Table A16. Renewable Energy Generating Capacity and Generation (Continued)
(Gigawatts, Unless Otherwise Noted)

Capacity and Generation	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Total, All Sectors										
Net Summer Capacity										
Conventional Hydropower	77.42	77.43	77.43	77.43	77.75	77.77	77.72	78.18	77.97	78.28
Geothermal	2.36	2.53	2.53	2.53	2.60	3.01	2.66	3.03	3.30	3.00
Municipal Waste	3.77	4.38	4.42	4.38	4.42	4.68	4.46	4.42	4.68	4.49
Wood and Other Biomass[4,5]	6.82	6.91	6.91	6.85	8.99	12.56	11.50	18.06	21.32	22.08
Solar[6]	1.00	2.41	2.46	2.33	12.46	11.80	10.74	14.48	13.54	13.02
Wind	16.23	29.48	39.73	29.50	33.32	66.57	33.35	40.87	68.05	44.31
Total	**107.60**	**123.13**	**133.49**	**123.02**	**139.54**	**176.39**	**140.44**	**159.04**	**188.86**	**165.18**
Generation (billion kilowatthours)										
Conventional Hydropower	248.31	270.49	270.49	270.50	298.94	298.72	298.75	301.47	299.89	301.42
Geothermal	14.84	17.78	17.78	17.78	18.63	21.86	19.11	22.01	24.18	21.80
Municipal Waste	16.43	22.07	22.41	22.05	22.39	24.41	22.70	22.43	24.41	22.93
Wood and Other Biomass[5]	38.51	41.11	40.98	56.26	143.67	138.93	164.99	213.88	218.36	231.25
Solar[6]	1.29	4.04	4.12	3.91	21.26	20.11	18.39	24.83	23.22	22.45
Wind	32.20	80.46	112.07	80.55	92.88	203.47	93.32	117.98	207.75	130.57
Total	**351.58**	**435.94**	**467.85**	**451.06**	**597.77**	**707.50**	**617.26**	**702.61**	**797.81**	**730.42**

[1]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[2]Includes hydrothermal resources only (hot water and steam).
[3]Includes municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.
[4]Facilities co-firing biomass and coal are classified as coal.
[5]Includes projections for energy crops after 2012.
[6]Does not include off-grid photovoltaics (PV). Based on annual PV shipments from 1989 through 2006, EIA estimates that as much as 210 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2006, plus an additional 526 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See Energy Information Administration, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008), Table 10.8 (annual PV shipments, 1989-2006). The approach used to develop the estimate, based on shipment data, provides an upper estimate of the size of the PV stock, including both grid-based and off-grid PV. It will overestimate the size of the stock, because shipments include a substantial number of units that are exported, and each year some of the PV units installed earlier will be retired from service or abandoned.
[7]Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The Energy Information Administration estimates that in 2007 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).
[8]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.
[9]Represents own-use industrial hydroelectric power.
[10]Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 capacity: Energy Information Administration (EIA), Form EIA-860, "Annual Electric Generator Report" (preliminary). 2007 generation: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A17. Renewable Energy, Consumption by Sector and Source[1]
(Quadrillion Btu per Year)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Marketed Renewable Energy[2]										
Residential (wood)	**0.43**	**0.42**	**0.42**	**0.43**	**0.48**	**0.48**	**0.48**	**0.50**	**0.50**	**0.50**
Commercial (biomass)	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**	**0.12**
Industrial[3]	**2.04**	**2.31**	**2.33**	**2.23**	**2.66**	**2.90**	**2.87**	**3.60**	**3.88**	**3.62**
Conventional Hydroelectric	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Municipal Waste[4]	0.16	0.17	0.17	0.12	0.17	0.17	0.12	0.17	0.17	0.12
Biomass	1.46	1.35	1.37	1.34	1.44	1.48	1.49	1.72	1.74	1.81
Biofuels Heat and Coproducts	0.40	0.76	0.76	0.75	1.02	1.23	1.23	1.69	1.94	1.66
Transportation	**0.64**	**1.19**	**1.19**	**1.23**	**1.80**	**2.01**	**2.06**	**2.96**	**3.17**	**3.43**
Ethanol used in E85[5]	0.00	0.00	0.00	0.00	0.33	0.49	0.56	1.06	1.15	1.44
Ethanol used in Gasoline Blending	0.58	1.09	1.09	1.08	1.11	1.10	1.10	1.09	1.07	1.04
Biodiesel used in Distillate Blending	0.06	0.10	0.10	0.12	0.23	0.23	0.20	0.24	0.26	0.25
Liquids from Biomass	0.00	0.00	0.00	0.00	0.07	0.14	0.15	0.52	0.65	0.65
Green Liquids	0.00	0.00	0.00	0.02	0.05	0.05	0.06	0.05	0.04	0.06
Electric Power[6]	**3.45**	**4.24**	**4.56**	**4.42**	**5.65**	**6.69**	**5.79**	**6.28**	**7.13**	**6.43**
Conventional Hydroelectric	2.44	2.65	2.65	2.65	2.93	2.92	2.92	2.95	2.93	2.95
Geothermal	0.31	0.38	0.38	0.38	0.41	0.51	0.43	0.52	0.58	0.51
Biogenic Municipal Waste[7]	0.17	0.23	0.24	0.23	0.24	0.26	0.24	0.24	0.26	0.24
Biomass	0.21	0.18	0.17	0.35	1.14	0.97	1.25	1.39	1.29	1.41
Dedicated Plants	0.16	0.15	0.14	0.15	0.16	0.36	0.28	0.44	0.56	0.61
Cofiring	0.05	0.03	0.03	0.21	0.98	0.62	0.98	0.95	0.73	0.80
Solar Thermal	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Wind	0.32	0.80	1.11	0.80	0.92	1.99	0.92	1.16	2.03	1.29
Total Marketed Renewable Energy	**6.69**	**8.29**	**8.62**	**8.43**	**10.72**	**12.21**	**11.32**	**13.47**	**14.80**	**14.10**
Sources of Ethanol										
From Corn	0.55	1.11	1.10	1.08	1.32	1.35	1.42	1.57	1.50	1.41
From Cellulose	0.00	0.00	0.00	0.00	0.07	0.19	0.18	0.38	0.58	0.43
Imports	0.03	-0.02	-0.01	-0.00	0.06	0.05	0.06	0.19	0.15	0.63
Total	**0.58**	**1.09**	**1.09**	**1.08**	**1.45**	**1.59**	**1.66**	**2.15**	**2.22**	**2.47**

Table A17. Renewable Energy, Consumption by Sector and Source[1] (Continued)

(Quadrillion Btu per Year)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Nonmarketed Renewable Energy[8] Selected Consumption										
Residential	**0.01**	**0.01**	**0.01**	**0.01**	**0.08**	**0.08**	**0.07**	**0.09**	**0.09**	**0.08**
Solar Hot Water Heating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Geothermal Heat Pumps	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.02
Solar Photovoltaic	0.00	0.01	0.01	0.01	0.06	0.05	0.05	0.06	0.06	0.05
Wind	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
Commercial	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.04**	**0.03**	**0.04**	**0.04**	**0.04**
Solar Thermal	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

[1]Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, solar, and wind. Consumption at hydroelectric, solar, and wind facilities determined by using the fossil fuel equivalent of 10,022 Btu per kilowatthour.

[2]Includes nonelectric renewable energy groups for which the energy source is bought and sold in the marketplace, although all transactions may not necessarily be marketed, and marketed renewable energy inputs for electricity entering the marketplace on the electric power grid. Excludes electricity imports; see Table A2.

[3]Includes all electricity production by industrial and other combined heat and power for the grid and for own use.

[4]Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

[5]Excludes motor gasoline component of E85.

[6]Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

[7]Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The Energy Information Administration estimates that in 2007 approximately 0.3 quadrillion Btus were consumed from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, *Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy* (Washington, DC, May 2007).

[8]Includes selected renewable energy consumption data for which the energy is not bought or sold, either directly or indirectly as an input to marketed energy. The Energy Information Administration does not estimate or project total consumption of nonmarketed renewable energy.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 ethanol: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 electric power sector: EIA, Form EIA-860, "Annual Electric Generator Report" (preliminary). Other 2007 values: EIA, Office of Integrated Analysis and Forecasting. **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A18. Carbon Dioxide Emissions by Sector and Source
(Million Metric Tons, Unless Otherwise Noted)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Residential										
Petroleum	88	94	93	89	80	78	80	75	74	75
Natural Gas	257	271	268	261	267	265	270	269	266	269
Coal	1	1	1	1	1	1	1	1	1	1
Electricity[1]	904	889	879	886	904	882	899	987	969	987
Total	**1250**	**1255**	**1242**	**1237**	**1251**	**1226**	**1250**	**1332**	**1310**	**1332**
Commercial										
Petroleum	45	45	45	41	42	41	42	43	42	42
Natural Gas	163	173	173	167	177	176	177	190	187	188
Coal	7	6	6	6	6	6	6	6	6	6
Electricity[1]	872	885	879	878	976	968	979	1087	1087	1096
Total	**1087**	**1110**	**1103**	**1092**	**1200**	**1192**	**1205**	**1326**	**1322**	**1332**
Industrial[2]										
Petroleum	406	384	385	377	367	368	369	360	356	375
Natural Gas[3]	405	374	383	414	401	400	421	414	412	440
Coal	175	146	148	174	165	179	183	167	187	215
Electricity[1]	653	580	580	617	611	610	612	578	575	638
Total	**1640**	**1483**	**1496**	**1582**	**1544**	**1557**	**1585**	**1519**	**1530**	**1667**
Transportation										
Petroleum[4]	1974	1849	1865	1851	1891	1887	1896	2016	1995	2032
Natural Gas[5]	35	35	35	36	39	36	40	42	42	43
Electricity[1]	4	4	4	4	5	6	6	8	8	9
Total	**2014**	**1889**	**1905**	**1891**	**1935**	**1929**	**1942**	**2066**	**2045**	**2084**
Electric Power[6]										
Petroleum	66	47	47	38	41	40	40	42	41	41
Natural Gas	376	334	322	341	330	285	357	403	365	378
Coal	1980	1964	1962	1995	2114	2129	2089	2203	2222	2299
Other[7]	12	12	12	12	12	12	12	12	12	12
Total	**2433**	**2357**	**2342**	**2385**	**2496**	**2466**	**2497**	**2660**	**2639**	**2729**
Total by Fuel										
Petroleum[3]	2580	2419	2435	2396	2420	2415	2427	2536	2509	2564
Natural Gas	1237	1189	1182	1218	1214	1163	1265	1319	1272	1318
Coal	2162	2117	2117	2176	2286	2316	2278	2377	2415	2521
Other[7]	12	12	12	12	12	12	12	12	12	12
Total	**5991**	**5737**	**5746**	**5801**	**5931**	**5905**	**5982**	**6244**	**6207**	**6414**
Carbon Dioxide Emissions (tons per person)	**19.8**	**18.4**	**18.5**	**18.6**	**17.3**	**17.2**	**17.5**	**16.7**	**16.6**	**17.1**

[1]Emissions from the electric power sector are distributed to the end-use sectors.
[2]Fuel consumption includes energy for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public.
[3]Includes lease and plant fuel.
[4]This includes carbon dioxide from international bunker fuels, both civilian and military, which are excluded from the accounting of carbon dioxide emissions under the United Nations convention. From 1990 through 2007, international bunker fuels accounted for 84 to 131 million metric tons annually.
[5]Includes pipeline fuel natural gas and compressed natural gas used as vehicle fuel.
[6]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[7]Includes emissions from geothermal power and nonbiogenic emissions from municipal waste.
Note: Totals may not equal sum of components due to independent rounding. Data for 2006 and 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2007,* DOE/EIA-0573(2007) (Washington, DC, December 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A19. Energy-Related Carbon Dioxide Emissions by End Use
(Million Metric Tons)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Residential										
Space Heating	293.21	310.20	305.35	291.82	291.36	286.33	291.30	288.15	282.85	286.17
Space Cooling	167.89	153.67	150.17	158.68	168.11	162.08	169.72	187.27	181.01	190.05
Water Heating	166.05	164.05	160.98	161.74	169.24	166.33	166.79	162.16	162.55	165.41
Refrigeration	73.53	68.77	68.35	68.88	68.36	67.54	67.93	72.82	72.73	73.42
Cooking	33.58	33.53	33.42	34.00	36.18	35.91	37.37	38.50	38.44	40.30
Clothes Dryers	54.78	53.85	53.41	53.38	54.49	53.41	53.99	57.80	56.80	58.11
Freezers	15.54	14.61	14.52	14.64	14.75	14.57	14.66	15.53	15.51	15.66
Lighting	139.58	133.05	131.99	132.07	98.28	96.40	97.54	91.08	89.82	90.61
Clothes Washers[1]	6.65	6.07	6.04	5.99	4.84	4.79	4.74	4.88	4.88	4.93
Dishwashers[1]	18.12	17.28	17.18	17.32	17.92	17.70	17.81	19.97	19.93	20.07
Color Televisions and Set-Top Boxes	68.63	74.82	74.24	74.30	77.46	75.96	77.16	96.42	95.01	97.19
Personal Computers and Related Equipment	29.18	33.36	33.21	33.47	34.81	34.39	34.62	39.16	39.07	39.39
Furnace Fans and Boiler Circulation Pumps	24.52	26.13	25.97	24.21	27.45	27.18	26.76	28.59	28.60	28.42
Other Uses	165.37	165.79	166.90	166.42	188.00	183.76	189.62	229.75	222.39	222.05
Discrepancy[2]	-6.67	-0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00
Total Residential	**1249.97**	**1255.21**	**1241.71**	**1236.92**	**1251.26**	**1226.36**	**1250.00**	**1332.10**	**1309.59**	**1331.78**
Commercial										
Space Heating[3]	121.27	129.50	128.86	122.71	124.00	122.56	125.18	123.80	121.45	123.26
Space Cooling[3]	106.18	100.66	99.88	102.62	105.23	104.28	106.83	112.64	112.43	115.01
Water Heating[3]	43.05	42.96	42.84	42.19	45.25	45.24	45.75	48.12	48.06	47.99
Ventilation	93.21	98.65	98.05	97.80	111.48	112.03	113.27	120.47	122.06	123.43
Cooking	13.19	13.88	13.86	13.67	14.57	14.61	14.70	15.82	15.85	15.65
Lighting	201.87	196.38	194.72	195.55	197.94	197.05	202.04	206.53	207.45	210.90
Refrigeration	76.34	72.95	72.56	73.02	66.22	65.73	66.80	68.91	69.04	69.59
Office Equipment (PC)	45.95	46.78	46.51	46.77	51.42	50.90	51.55	58.27	58.27	58.63
Office Equipment (non-PC)	39.97	47.47	47.20	47.47	66.51	65.83	66.68	74.65	74.62	75.05
Other Uses[4]	346.47	360.45	358.87	350.49	417.70	413.59	411.93	496.68	492.88	492.05
Total Commercial	**1087.50**	**1109.68**	**1103.33**	**1092.29**	**1200.33**	**1191.82**	**1204.72**	**1325.89**	**1322.11**	**1331.56**
Industrial										
Manufacturing										
Refining	251.30	256.89	255.78	258.31	269.50	280.58	291.74	293.82	307.51	327.84
Food Products	98.75	99.74	100.99	103.37	109.24	107.04	107.57	120.53	118.65	119.68
Paper Products	93.84	85.19	85.66	87.16	83.04	83.86	85.70	84.09	84.70	88.86
Bulk Chemicals	313.83	257.74	262.42	279.94	235.85	238.52	247.77	191.29	195.73	221.91
Glass	17.19	16.37	16.50	16.88	21.45	21.75	21.25	21.97	21.96	21.37
Cement Manufacturing	41.74	30.87	31.83	32.97	40.80	41.42	40.16	41.42	40.77	40.58
Iron and Steel	137.35	108.88	113.01	117.98	110.34	113.15	113.43	85.65	86.82	116.17
Aluminum	44.93	42.26	42.20	42.50	36.86	37.54	36.66	29.60	29.90	32.23
Fabricated Metal Products	42.98	34.19	34.52	36.15	36.90	37.04	36.82	28.43	28.44	36.51
Machinery	21.48	17.41	17.40	18.40	21.55	22.62	20.66	14.76	14.43	21.97
Computers and Electronics	29.63	21.44	21.95	24.66	30.34	30.97	32.37	39.53	36.39	53.58
Transportation Equipment	42.28	41.17	41.45	39.29	40.00	40.26	40.09	40.29	39.33	41.69
Electrical Equipment	17.38	12.63	12.85	13.91	17.22	17.50	16.85	18.81	17.91	22.37
Wood Products	17.79	17.48	17.74	17.80	21.96	22.10	20.10	21.98	21.15	19.59
Plastics	40.96	37.26	37.45	37.60	38.18	37.77	38.84	37.39	38.52	43.38
Balance of Manufacturing	171.10	147.34	148.41	150.34	153.71	152.42	154.38	153.26	154.42	160.37
Total Manufacturing	1382.52	1226.88	1240.18	1277.28	1266.94	1284.54	1304.41	1222.82	1236.62	1368.09
Nonmanufacturing										
Agriculture	96.45	81.78	83.11	86.33	85.00	84.70	85.70	90.02	89.21	88.95
Mining	76.82	53.43	54.39	59.38	75.75	75.73	72.43	76.29	75.39	76.07
Construction	81.58	75.25	75.35	77.18	74.65	73.79	76.44	77.08	76.92	79.62
Total Nonmanufacturing	254.84	210.46	212.86	222.89	235.41	234.23	234.56	243.39	241.52	244.63
Discrepancy[2]	2.40	45.64	43.08	81.53	41.92	38.20	46.14	53.17	52.07	54.56
Total Industrial	**1639.76**	**1482.98**	**1496.11**	**1581.70**	**1544.27**	**1556.97**	**1585.11**	**1519.38**	**1530.21**	**1667.28**

Table A19. Energy-Related Carbon Dioxide Emissions by End Use (Continued)
(Million Metric Tons)

Sector and Source	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Transportation										
Light-Duty Vehicles	1137.85	1086.53	1090.07	1076.13	1018.16	1011.80	1007.98	1031.27	1021.31	1002.45
Commercial Light Trucks[5]	43.08	36.17	36.63	37.81	39.70	40.06	39.85	41.72	41.28	44.04
Bus Transportation	19.57	19.94	19.98	19.11	18.87	18.91	19.08	20.15	20.08	20.06
Freight Trucks	371.85	333.05	339.55	343.12	399.86	401.21	409.93	451.72	446.43	488.21
Rail, Passenger	5.82	5.81	5.84	5.84	6.59	6.54	6.60	7.29	7.26	7.30
Rail, Freight	43.01	40.34	40.78	40.74	45.46	45.88	46.39	48.63	48.83	52.19
Shipping, Domestic	25.11	23.62	23.85	23.52	26.23	25.98	27.51	29.29	29.07	30.69
Shipping, International	69.31	65.49	65.53	62.74	70.15	70.17	70.25	71.10	71.05	71.23
Recreational Boats	17.48	17.09	17.16	16.86	17.99	17.97	17.63	18.92	18.84	18.55
Air	192.03	167.48	171.99	173.66	199.72	200.95	203.42	248.41	244.02	250.83
Military Use	50.27	55.44	55.83	52.93	52.59	52.65	52.83	55.13	55.17	55.40
Lubricants	5.19	5.12	5.12	5.17	5.42	5.42	5.41	5.61	5.59	5.67
Pipeline Fuel	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.04	0.04
Discrepancy[2]	32.99	32.72	32.43	32.85	34.56	31.87	35.50	36.95	36.28	37.16
Total Transportation	**2013.59**	**1888.84**	**1904.79**	**1890.52**	**1935.32**	**1929.45**	**1942.43**	**2066.22**	**2045.24**	**2083.81**

[1]Does not include water heating portion of load.
[2]Represents differences between total emissions by end-use and total emissions by fuel as reported in Table A18. Emissions by fuel may reflect benchmarking and other modeling adjustments to energy use and the associated emissions that are not assigned to specific end uses.
[3]Includes emissions related to fuel consumption for district services.
[4]Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, medical equipment, pumps, emergency generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus emissions from residual fuel oil, liquefied petroleum gases, coal, motor gasoline, and kerosene.
[5]Commercial trucks 8,500 to 10,000 pounds.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2007,* DOE/EIA-0573(2007) (Washington, DC, December 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A20. Macroeconomic Indicators

(Billion 2000 Chain-Weighted Dollars, Unless Otherwise Noted)

Indicators	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Real Gross Domestic Product	**11524**	**11373**	**11599**	**11779**	**15315**	**15398**	**15524**	**20193**	**19875**	**20114**
Components of Real Gross Domestic Product										
Real Consumption	8253	8289	8395	8435	10813	10817	10876	14255	14069	13439
Real Investment	1810	1366	1478	1581	2578	2591	2565	3797	3590	3756
Real Government Spending	2012	2061	2117	2065	2225	2229	2194	2526	2473	2427
Real Exports	1426	1355	1367	1585	2790	2862	3061	4894	4865	5820
Real Imports	1972	1731	1794	1899	2936	2942	3007	4844	4719	4717
Energy Intensity (thousand Btu per 2000 dollar of GDP)										
Delivered Energy	6.42	6.23	6.14	6.09	4.83	4.83	4.86	3.92	3.97	4.04
Total Energy	8.84	8.67	8.54	8.48	6.80	6.80	6.79	5.50	5.58	5.65
Price Indices										
GDP Chain-Type Price Index (2000=1.000)	1.198	1.241	1.243	1.262	1.503	1.521	1.548	1.855	1.896	1.737
Consumer Price Index (1982-4=1)										
All-Urban	2.07	2.14	2.14	2.20	2.75	2.79	2.83	3.50	3.58	3.31
Energy Commodities and Services	2.08	1.76	1.77	2.18	3.06	3.10	3.16	4.06	4.11	3.87
Wholesale Price Index (1982=1.00)										
All Commodities	1.73	1.64	1.65	1.80	2.09	2.12	2.19	2.42	2.47	2.36
Fuel and Power	1.77	1.49	1.49	1.91	2.64	2.66	2.74	3.57	3.62	3.45
Metals and Metal Products	1.93	1.59	1.60	1.82	2.05	2.10	2.21	2.11	2.18	2.22
Interest Rates (percent, nominal)										
Federal Funds Rate	5.02	0.27	0.32	1.30	4.97	5.40	5.20	5.60	5.00	4.04
10-Year Treasury Note	4.63	2.78	3.01	3.67	5.83	6.03	5.86	6.14	5.76	4.67
AA Utility Bond Rate	5.94	5.77	6.09	6.39	7.81	7.95	7.49	8.83	8.04	5.79
Value of Shipments (billion 2000 dollars)										
Total Industrial	5750	4862	4954	5240	6581	6652	6753	7519	7391	8451
Non-manufacturing	1490	1179	1197	1277	1635	1633	1603	1784	1760	1780
Manufacturing	4261	3683	3757	3963	4946	5019	5150	5735	5631	6671
Energy-Intensive	1239	1173	1194	1238	1354	1354	1374	1455	1445	1525
Non-Energy Intensive	3022	2510	2563	2725	3592	3666	3776	4279	4186	5145
Population and Employment (millions)										
Population with Armed Forces Overseas	302.4	311.4	311.4	311.4	342.6	342.6	342.6	374.7	374.7	375.1
Population (aged 16 and over)	237.2	245.2	245.2	245.2	270.3	270.3	270.4	297.2	297.2	297.6
Population, over age 65	38.0	40.4	40.4	40.4	55.0	55.0	55.0	72.3	72.3	72.3
Employment, Nonfarm	137.2	130.8	132.7	135.6	150.5	150.9	152.6	167.3	165.3	168.3
Employment, Manufacturing	13.9	11.2	11.5	12.2	11.8	12.0	12.3	10.2	10.1	11.7
Key Labor Indicators										
Labor Force (millions)	153.1	153.6	154.0	155.9	166.3	166.4	168.4	176.0	175.6	181.5
Non-farm Labor Productivity (1992=1.00)	1.37	1.46	1.46	1.45	1.74	1.75	1.74	2.19	2.17	2.14
Unemployment Rate (percent)	4.63	10.19	9.35	8.26	5.74	5.51	5.53	4.92	5.54	4.78
Key Indicators for Energy Demand										
Real Disposable Personal Income	8644	8868	9103	9017	11895	11903	12035	16310	16014	15450
Housing Starts (millions)	1.44	1.04	1.08	1.18	1.98	1.99	1.77	1.81	1.77	1.74
Commercial Floorspace (billion square feet)	77.3	81.0	81.1	81.2	91.6	91.5	92.3	104.4	103.9	103.3
Unit Sales of Light-Duty Vehicles (millions)	16.09	14.54	13.08	14.18	18.04	18.09	17.41	20.20	19.69	20.99

GDP = Gross domestic product.
Btu = British thermal unit.

Sources: 2007: IHS Global Insight Industry and Employment models, November 2008. **Projections:** Energy Information Administration, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A.

Table A21. International Liquids Supply and Disposition Summary
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Crude Oil Prices (2007 dollars per barrel)[1]										
Imported Low Sulfur Light Crude Oil Price	72.33	52.13	52.16	80.16	116.56	116.79	115.45	130.50	130.92	130.43
Imported Crude Oil Price	63.83	49.05	48.99	77.56	114.35	114.50	112.05	124.45	124.36	124.60
Crude Oil Prices (nominal dollars per barrel)[1]										
Imported Low Sulfur Light Crude Oil Price	72.33	54.00	54.13	84.42	146.20	148.30	149.14	202.00	207.19	189.10
Imported Crude Oil Price	63.83	50.81	50.84	81.69	143.44	145.39	144.74	192.63	196.81	180.66
Conventional Production (Conventional)[2]										
OPEC[3]										
Middle East	22.97	22.94	23.11	22.77	25.96	25.93	25.22	28.01	27.85	28.34
North Africa	4.02	4.25	4.25	4.25	4.61	4.61	4.61	5.19	5.19	5.19
West Africa	4.12	4.81	4.81	4.81	5.23	5.23	5.23	5.92	5.92	5.92
South America	2.58	2.26	2.26	2.26	2.42	2.42	2.42	2.73	2.73	2.73
Total OPEC	**33.68**	**34.26**	**34.43**	**34.09**	**38.22**	**38.19**	**37.48**	**41.85**	**41.69**	**42.18**
Non-OPEC										
OECD										
United States (50 states)	8.20	8.59	8.59	8.81	8.95	8.86	9.71	10.20	10.06	10.44
Canada	2.05	1.90	1.90	1.90	1.25	1.25	1.25	1.02	1.02	1.02
Mexico	3.50	2.87	2.87	2.87	2.24	2.24	2.24	2.45	2.45	2.45
OECD Europe[4]	5.23	4.27	4.27	4.27	3.18	3.18	3.18	2.94	2.94	2.94
Japan	0.13	0.14	0.14	0.14	0.16	0.16	0.16	0.18	0.18	0.18
Australia and New Zealand	0.64	0.82	0.82	0.82	0.78	0.78	0.78	0.77	0.77	0.77
Total OECD	**19.75**	**18.58**	**18.59**	**18.80**	**16.56**	**16.47**	**17.32**	**17.57**	**17.43**	**17.81**
Non-OECD										
Russia	9.88	9.50	9.50	9.50	10.24	10.24	10.24	10.50	10.50	10.50
Other Europe and Eurasia[5]	2.88	3.58	3.58	3.58	4.50	4.50	4.50	4.86	4.86	4.86
China	3.90	3.75	3.75	3.75	3.52	3.52	3.52	3.19	3.19	3.19
Other Asia[6]	3.75	3.88	3.88	3.88	3.85	3.85	3.85	3.68	3.68	3.68
Middle East	1.52	1.42	1.42	1.42	1.40	1.40	1.40	1.36	1.36	1.36
Africa	2.41	2.65	2.65	2.65	2.72	2.72	2.72	2.98	2.98	2.98
Brazil	1.88	2.48	2.48	2.48	3.45	3.45	3.45	4.19	4.19	4.19
Other Central and South America	1.79	1.70	1.70	1.70	1.56	1.56	1.56	2.05	2.05	2.05
Total Non-OECD	**28.01**	**28.96**	**28.96**	**28.96**	**31.25**	**31.25**	**31.25**	**32.81**	**32.81**	**32.81**
Total Conventional Production	**81.44**	**81.80**	**81.97**	**81.85**	**86.03**	**85.92**	**86.04**	**92.23**	**91.94**	**92.80**
Unconventional Production[7]										
United States (50 states)	0.46	0.91	0.91	0.91	1.30	1.51	1.55	2.18	2.43	2.31
Other North America	1.38	1.92	1.92	1.92	3.34	3.34	3.34	4.31	4.31	4.31
OECD Europe[3]	0.11	0.13	0.13	0.13	0.19	0.19	0.19	0.27	0.27	0.27
Middle East	0.09	0.01	0.01	0.01	0.17	0.17	0.17	0.22	0.22	0.22
Africa.	0.23	0.27	0.27	0.27	0.50	0.50	0.50	0.72	0.72	0.72
Central and South America	1.02	1.15	1.15	1.15	2.04	2.04	2.04	3.16	3.16	3.16
Other	0.30	0.47	0.47	0.47	0.78	0.78	0.78	1.63	1.63	1.63
Total Unconventional Production	**3.58**	**4.85**	**4.85**	**4.85**	**8.31**	**8.52**	**8.56**	**12.48**	**12.73**	**12.61**
Total Production	**85.02**	**86.65**	**86.82**	**86.71**	**94.34**	**94.44**	**94.60**	**104.71**	**104.67**	**105.41**

Table A21. International Liquids Supply and Disposition Summary (Continued)
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2007	Projections								
		2010			2020			2030		
		No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)	No Stimulus	Updated AEO2009 Reference (April 2009)	Published AEO2009 Reference (March 2009)
Consumption[8]										
OECD										
United States (50 states)	20.65	19.64	19.81	19.69	19.95	20.05	20.21	21.02	20.92	21.67
United States Territories	0.39	0.44	0.44	0.44	0.53	0.53	0.53	0.62	0.62	0.62
Canada	2.41	2.28	2.28	2.28	2.29	2.29	2.29	2.39	2.39	2.39
Mexico	2.10	2.06	2.06	2.06	2.28	2.28	2.28	2.67	2.67	2.67
OECD Europe[3]	15.36	14.74	14.74	14.74	14.24	14.24	14.24	14.27	14.27	14.27
Japan	5.02	4.68	4.68	4.68	4.27	4.27	4.27	4.02	4.02	4.02
South Korea	2.34	2.31	2.31	2.31	2.58	2.58	2.58	2.81	2.81	2.81
Australia and New Zealand	1.08	1.04	1.04	1.04	1.09	1.09	1.09	1.20	1.20	1.20
Total OECD	**49.35**	**47.19**	**47.36**	**47.24**	**47.24**	**47.33**	**47.50**	**48.99**	**48.90**	**49.64**
Non-OECD										
Russia	2.88	2.97	2.97	2.97	3.18	3.18	3.18	3.35	3.35	3.35
Other Europe and Eurasia[5]	2.24	2.34	2.34	2.34	2.64	2.64	2.64	2.96	2.96	2.96
China	7.63	8.50	8.50	8.50	11.29	11.29	11.29	15.08	15.08	15.08
India	2.46	2.60	2.60	2.60	3.51	3.51	3.51	4.52	4.52	4.52
Other Non-OECD Asia	6.28	6.39	6.39	6.39	7.75	7.75	7.75	9.03	9.03	9.03
Middle East	6.42	7.02	7.02	7.02	8.26	8.26	8.26	9.45	9.45	9.45
Africa	3.22	3.49	3.49	3.49	3.90	3.90	3.90	4.02	4.02	4.02
Brazil	2.37	2.55	2.55	2.55	2.84	2.84	2.84	3.32	3.32	3.32
Other Central and South America	3.35	3.60	3.60	3.60	3.73	3.73	3.73	4.04	4.04	4.04
Total Non-OECD	**36.85**	**39.46**	**39.46**	**39.46**	**47.10**	**47.10**	**47.10**	**55.77**	**55.77**	**55.77**
Total Consumption	**86.20**	**86.66**	**86.82**	**86.70**	**94.34**	**94.44**	**94.60**	**104.76**	**104.66**	**105.41**
OPEC Production[9]	34.38	34.92	35.08	34.75	39.26	39.23	38.51	43.31	43.15	43.63
Non-OPEC Production[9]	50.64	51.74	51.74	51.96	55.09	55.21	56.09	61.41	61.52	61.78
Net Eurasia Exports	9.52	10.24	10.24	10.24	12.37	12.37	12.37	13.25	13.25	13.25
OPEC Market Share (percent)	40.4	40.3	40.4	40.1	41.6	41.5	40.7	41.4	41.2	41.4

[1]Weighted average price delivered to U.S. refiners.
[2]Includes production of crude oil (including lease condensate), natural gas plant liquids, other hydrogen and hydrocarbons for refinery feedstocks, alcohol and other sources, and refinery gains.
[3]OPEC = Organization of Petroleum Exporting Countries - Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.
[4]OECD Europe = Organization for Economic Cooperation and Development - Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.
[5]Other Europe and Eurasia = Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Malta, Moldova, Montenegro, Romania, Serbia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.
[6]Other Asia = Afghanistan, Bangladesh, Bhutan, Brunei, Cambodia (Kampuchea), Fiji, French Polynesia, Guam, Hong Kong, Indonesia, Kiribati, Laos, Malaysia, Macau, Maldives, Mongolia, Myanmar (Burma), Nauru, Nepal, New Caledonia, Niue, North Korea, Pakistan, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Tonga, Vanuatu, and Vietnam.
[7]Includes liquids produced from energy crops, natural gas, coal, extra-heavy oil, oil sands, and shale. Includes both OPEC and non-OPEC producers in the regional breakdown.
[8]Includes both OPEC and non-OPEC consumers in the regional breakdown.
[9]Includes both conventional and unconventional liquids production.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2007 low sulfur light crude oil price: Energy Information Administration (EIA), Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." 2007 imported crude oil price: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). **2007 quantities and projections:** EIA, AEO2009 National Energy Modeling System runs NOSTIMLS.D041409A, STIMULUS.D041409A, and AEO2009.D120908A, and EIA, Generate World Oil Balance Model.

Report: An Updated Reference Case Reflecting Provisions of the American Recovery and Reinvestment Act
Scenario: stimulus — Reference Case with ARRA
Datekey: d041409a
Release Date: April 2009

Table 90. Renewable Energy Generation by Fuel
Mid-Atlantic Area Council

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Electric Power Sector 1/																									
Generating Capacity (gigawatts)																									
Conventional Hydropower	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste 3/	0.72	0.74	0.74	0.74	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Wood and Other Biomass 4/	0.03	0.03	0.03	0.03	0.03	0.03	0.67	1.19	1.83	2.18	2.18	2.18	2.18	2.18	2.18	2.22	2.44	2.50	2.57	2.61	2.66	2.74	2.83	2.83	3.35
Solar Thermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Photovoltaic 5/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wind	0.19	0.30	0.53	0.78	1.90	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Offshore Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Total	2.15	2.28	2.51	2.76	4.01	4.11	4.74	5.27	6.11	6.45	6.45	6.45	6.45	6.45	6.45	6.50	6.71	6.78	6.84	6.89	6.94	7.02	7.11	7.11	7.62
Electricity Generation (billion kilowatthours)																									
Conventional Hydropower	4.52	3.64	4.37	4.19	4.22	4.28	4.35	4.43	4.49	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biogenic Municipal Waste 6/	2.66	2.74	3.10	3.10	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11
Wood and Other Biomass 4/	0.19	0.18	0.32	0.13	0.26	6.59	11.02	13.61	15.79	17.40	20.32	22.81	26.53	29.91	31.92	32.37	34.09	34.54	35.05	35.42	36.03	36.40	36.57	36.67	36.81
Solar Thermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Photovoltaic 5/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wind	0.39	0.39	0.93	2.21	5.29	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.60	5.59	5.60	5.60	5.60	5.60	5.60
Offshore Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Total	7.77	6.95	8.71	9.63	13.88	20.59	25.09	27.75	30.25	32.42	35.35	37.84	41.56	44.93	46.94	47.39	49.12	49.57	50.08	50.44	51.05	51.42	51.60	51.69	51.83
Energy Consumption 7/ (quadrillion Btu)																									
Conventional Hydropower	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biogenic Municipal Waste 6/	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Wood and Other Biomass 4/	0.00	0.00	0.00	0.00	0.00	0.07	0.11	0.13	0.15	0.16	0.19	0.21	0.25	0.28	0.30	0.31	0.32	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.33
Solar Thermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Photovoltaic 5/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wind	0.00	0.00	0.01	0.02	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Offshore Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Total	0.09	0.08	0.10	0.11	0.15	0.22	0.26	0.29	0.31	0.32	0.35	0.38	0.42	0.45	0.47	0.47	0.49	0.49	0.50	0.50	0.50	0.51	0.51	0.51	0.50
End-Use Generators 8/																									
Generating Capacity (gigawatts)																									
Conventional Hydropower 9/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Wood and Other Biomass 4/	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17
Solar Photovoltaic 5/	0.02	0.03	0.04	0.09	0.16	0.22	0.34	0.47	0.62	0.90	1.20	1.20	1.21	1.22	1.24	1.25	1.27	1.28	1.30	1.32	1.34	1.38	1.42	1.47	1.55
Wind	0.00	0.00	0.00	0.02	0.04	0.07	0.11	0.16	0.20	0.28	0.36	0.36	0.36	0.37	0.38	0.38	0.39	0.40	0.41	0.41	0.42	0.43	0.44	0.45	0.46
Total	0.14	0.15	0.16	0.23	0.33	0.42	0.58	0.76	0.96	1.32	1.70	1.71	1.73	1.75	1.78	1.80	1.83	1.86	1.89	1.92	1.95	2.00	2.06	2.12	2.21
Electricity Generation (billion kilowatthours)																									
Conventional Hydropower 9/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Wood and Other Biomass 4/	0.73	0.68	0.64	0.64	0.66	0.67	0.69	0.73	0.75	0.76	0.79	0.82	0.85	0.88	0.92	0.95	0.99	1.02	1.03	1.06	1.07	1.09	1.11	1.14	1.16
Solar Photovoltaic 5/	0.02	0.04	0.05	0.12	0.23	0.31	0.48	0.69	0.90	1.34	1.79	1.80	1.81	1.83	1.85	1.87	1.89	1.92	1.95	1.98	2.01	2.06	2.13	2.21	2.32
Wind	0.00	0.00	0.00	0.03	0.06	0.10	0.16	0.22	0.29	0.40	0.52	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.63	0.64	0.65	0.67
Total	0.99	0.97	0.94	1.03	1.19	1.32	1.58	1.88	2.19	2.75	3.34	3.38	3.43	3.49	3.55	3.62	3.70	3.76	3.80	3.88	3.94	4.02	4.12	4.24	4.39
Energy Consumption (quadrillion Btu)																									
Conventional Hydropower 9/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Geothermal 2/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Wood and Other Biomass 4/	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Solar Photovoltaic 5/	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Wind	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03

1/ Includes electricity-only and combined heat and power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.
2/ Includes hydrothermal resources only (hot water and steam).
3/ Includes all municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.
4/ Includes projections for energy crops after 2010.
5/ Does not include off-grid photovoltaics (PV). Based on annual PV shipments from 1989 through 2006, EIA estimates that as much as 210 megawatts of remote electricity generation PV applications (i.e., off-grid power systems) were in service in 2006, plus an additional 526 megawatts in communications, transportation, and assorted other non-grid-connected, specialized applications. See Energy Information Administration, Annual Energy Review 2007, DOE/EIA-0384(2007) (Washington, DC, June 2008), Table 10.8 (annual PV shipments, 1989-2006). The approach used to develop the estimate, based on shipment data, provides an upper estimate of the size of the PV stock, including both grid-based and off-grid PV. It will overestimate the size of the stock, because shipments include a substantial number of units that are exported, and each year some of the PV units installed earlier will be retired from service or abandoned.
6/ Includes biogenic municipal solid waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. Only biogenic municipal waste is included. The Energy Information Administration estimates that in 2007 approximately 6 billion kilowatthours of electricity were generated from a municipal waste stream containing petroleum-derived plastics and other non-renewable sources. See Energy Information Administration, Methodology for Allocating Municipal Solid Waste to Biogenic and Non-Biogenic Energy (Washington, DC, May 2007).
7/ Actual heat rates used to determine fuel consumption for all renewable fuels except hydropower, solar, and wind. Consumption at hydroelectric, solar, and wind facilities determined by using the fossil fuel equivalent of 10,022 Btu per kilowatthour.
8/ Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid.
9/ Represents own-use industrial hydroelectric power.
Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.
Sources: 2006 and 2007 generation: EIA, Annual Energy Review 2007, DOE/EIA-0384(2007) (Washington, DC, June 2008). Projections: EIA, AEO2009 National Energy Modeling System run stimulus.d041409a.