SR/OIAF/2004-02

Summary Impacts of Modeled Provisions of the 2003 Conference Energy Bill

February 2004

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

Contacts

This report was prepared by the staff of the Office of Integrated Analysis and Forecasting, Energy Information Administration (EIA). General questions concerning the report can be directed to Mary J. Hutzler (mary.hutzler@eia.doe.gov, 202/586-2222), Director of the Office of Integrated Analysis and Forecasting, and Andy S. Kydes (akydes@eia.doe.gov, 202/586-2222), Senior Technical Advisor to the Office of Integrated Analysis and Forecasting.

Specific questions about the report can be directed to the following analysts:

Chapter 1: Background and Scope of the Analysis
- Andy S. Kydes ……(akydes@eia.doe.gov, 202/586-2222)

Chapter 2: Impacts of the Modeled Provisions of the Conference Energy Bill
- Residential……..John H. Cymbalsky (jcymbals@eia.doe.gov, 202/586-4815)
- Commercial.....Erin E. Boedecker (erin.boedecker@eia.doe.gov, 202/586-4791)
- Industrial…….T. Crawford Honeycutt (choneycu@eia.doe.gov, 202/586-1420)
- Transportation…….John D. Maples (john.maples@eia.doe.gov, 202/586-1757)
- Renewable Fuel Standards….Han-Lin Lee (han-lin.lee@eia.doe.gov, 202/586-4247)
- Nonconventional Fuels …….Ted McCallister (tmccalli@eia.doe.gov, 202/586-4820)
  James Kendell (jkendell@eia.doe.gov, 202/586-9646)
- Offshore Production……..….Dana Van Wagener (dana.van-wagener@eia.doe.gov, 202/586-4725)
  James Kendell (jkendell@eia.doe.gov, 202/586-9646)
- Alaska Natural Gas Pipeline..Joe Benneche (jbennech@eia.doe.gov, 202/586-6132)
  James Kendell (jkendell@eia.doe.gov, 202/586-9646)
- Clean Coal Incentive……..Alan Beamon (jbeamon@eia.doe.gov, 202/586-2025)
- New Nuclear Incentives…….Alan Beamon (jbeamon@eia.doe.gov, 202/586-2025)
- Renewable Production Tax Credit……..Chris Namovicz (cnamovicz@eia.doe.gov, 202/586-7120)
- Ethanol and Biodiesel ……Anthony F. Radich (anthony.radich@eia.doe.gov, 202/586-0504)

Preface

On February 2, 2004, Senator John Sununu requested that the Energy Information Administration (EIA) perform an assessment of the energy production, consumption, and price impacts of the Conference Energy Bill (CEB) of 2003 (also known as the Energy Policy Act of 2003). This report responds to that request by summarizing EIA's analysis of the CEB provisions that can be modeled using the National Energy Modeling System (NEMS) and have the potential to affect energy consumption, supply, prices, and imports. The impacts of the CEB provisions analyzed are estimated by comparing the results of those provisions to the Reference Case of the *Annual Energy Outlook 2004* (*AEO2004*).

The legislation that established EIA in 1977 vested the organization with an element of statutory independence. EIA does not take positions on policy questions. It is the responsibility of EIA to provide timely, high-quality information and to perform objective, credible analyses in support of the deliberations of both public and private decisionmakers. This report does not purport to represent the official position of the U.S. Department of Energy or the Administration.

The projections in the Reference Case used in this report are not statements of what will happen but of what might happen, given the assumptions and methodologies used. The Reference Case projections are business-as-usual trend forecasts, given known technology, technological and demographic trends, and current laws and regulations. Thus, they provide a policy-neutral starting point that can be used to analyze policy initiatives. EIA does not propose, advocate, or speculate on future legislative and regulatory changes. All laws are assumed to remain as currently enacted; however, the impacts of scheduled regulatory changes, when defined, are reflected.

Contents

Tables

Executive Summary

This report responds to a February 2, 2004, letter from Senator John Sununu, requesting that the Energy Information Administration (EIA) perform an analysis of the energy production, consumption, price, and import impacts that would result from the Conference Energy Bill (CEB). [1] It focuses on provisions of the CEB that can be modeled using EIA's National Energy Modeling System (NEMS) and have, in EIA's estimation, the potential to affect energy consumption, supply, prices, or imports.

The following CEB provisions were analyzed:

- Alaska Natural Gas Transportation System (ANGTS) construction incentives (loan guarantee, treatment plant tax credit)
- Offshore royalty relief
- Section 29 tax credits for unconventional natural gas production
- Renewable fuels standard (RFS)
- Methyl tertiary butyl ether (MTBE) ban
- Removal of oxygenate requirement for reformulated gasoline
- Production tax credit (PTC) for advanced nuclear plants
- Advanced coal generation technology incentives
- PTC extension for renewable generation
- Residential initiatives, including weatherization
- Commercial initiatives, including energy conservation product standards
- Investment tax credit for combined heat and power
- Continuation of tax credit for alternative-fueled vehicles

CEB Provisions Not Analyzed

Provisions of the CEB that are not analyzed include: (a) provisions that could not be analyzed using NEMS, including those addressing electric reliability; (b) provisions that provide authorizations, but do not provide actual funding; (c) provisions that provide authority to set standards or targets in some future date, but do not specify the standard or target; and (d) provisions that are not significant to the market as a whole or are not quantifiable. Provisions that are not addressed for one or more of the above reasons could also have potentially significant impacts on U.S. energy markets. The results and findings in this report apply specifically to the provisions that were modeled.

[1] On January 29, 2004, Senator John Sununu requested that the Energy Information Administration (EIA) provide an assessment of five specific tax provisions of the CEB, regarding their impact on incremental energy production, change in petroleum imports, and tax revenue losses. That report, *Analysis of Five Selected Tax Provisions of the Conference Energy Bill of 2003*, SR/OIAF/2004-01 (Washington, DC, February 2004) was provided to Senator Sununu on February 11, 2004.

Summary Results of the Modeled Provisions of the CEB

The impacts of the CEB provisions analyzed are estimated by comparing the results of a simulation with all of the provisions that can be modeled with NEMS to the Reference Case of the *Annual Energy Outlook 2004*[2] (*AEO2004*). The impact on total primary energy consumption is small. The maximum annual difference from the Reference Case level of primary energy consumption is no more than 0.4 quadrillion British thermal units (Btu) or 0.3 percent. From 2004 through 2020, primary energy consumption is virtually identical to the Reference Case level. After 2020, annual consumption is projected to be slightly lower than the Reference Case (by at most 0.4 quadrillion Btu). On a fuel-specific basis, changes to production, consumption, imports, and prices are negligible.

Carbon dioxide emissions are lower in the CEB Case than in the Reference Case in all years as the mix of fuels changes. In 2025, carbon dioxide emissions are 96 million metric tons (1.2 percent) lower in the CEB Case than in the Reference Case.

The following is a summary of the impacts by provision:

- ***ANGTS construction incentives (loan guarantee, treatment plant tax credit).*** These provisions reduce the price necessary to trigger the construction of the pipeline by $0.15 per thousand cubic feet (mcf) and advance the in-service date by 1 year to 2017 relative to the Reference Case.

- ***Offshore royalty relief***. This provision grants royalty relief for natural gas production from wells drilled to 15,000 feet or deeper on leases issued before January 1, 2001, in the shallow waters (less than 200 meters) of the Gulf of Mexico. Between 2004 and 2008, this provision increases offshore deep gas production in shallow water but total offshore production does not increase during this period because lower natural gas prices relative to the Reference Case that result from other CEB provisions slows the development of deepwater resources in those years.

- ***Section 29 tax credits for unconventional natural gas production.*** Section 1345 of the CEB provides a credit of $3 per barrel equivalent in 2002 dollars for qualified production from nonconventional gas sources and extends tax credits to 2006 for qualified existing wells placed in service between 1980 and 1992 and eligible through 2002. The provision also modifies Section 29 by providing tax credits for gas production from new nonconventional gas wells placed in service by 2006 for a period of 4 years prior to 2010. The provision increases profitability and drilling for nonconventional fuels, thereby increasing gas reserve additions and production while moderating prices through 2009.

- ***RFS, MTBE ban, and removal of oxygenate requirement.*** The renewable fuels provision requires 3.1 billion gallons of renewable fuel use in the transportation sector in 2005, increasing to 5 billion gallons by 2012. In 2013 and beyond, the share of renewable fuel is to remain proportional to the 2012 share of gasoline sold in the Nation thereafter.

[2] Energy Information Administration, *Annual Energy Outlook 2004*, DOE/EIA-0383 (2004) (Washington, DC, January 2004), http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2004).pdf.

The use of MTBE would be prohibited by the CEB nationwide starting in 2015 and the oxygen content requirement for reformulated gasoline (RFG) eliminated starting in 2005. The provision raises ethanol consumption by 1.81 billion gallons in 2015 and 1.96 billion gallons in 2025. In 2015, average gasoline prices relative to the reference case are 3 cents per gallon higher and average reformulated gasoline prices are 8.1 cents per gallon higher than in the Reference Case. About one-third of these price increases is due to the termination of the ethanol tax credit in 2011. Gasoline consumption is projected to be between 10,000 barrels per day and 70,000 barrels per day lower in the 2010 to 2025 period, largely because of the higher prices resulting from the RFS and the MTBE ban. Petroleum imports are reduced between 50,000 barrels per day (0.3 percent) and 230,000 barrels per day (1.2 percent) between 2015 and 2025 because of the lower demand (from higher gasoline prices) and increased use of ethanol.

- ***PTC for advanced nuclear plants***. This provision provides a 1.8-cent-per-kilowatthour tax credit, unadjusted for inflation, for electricity production from up to 6 gigawatts of new nuclear facilities. The provision makes it economic to construct 6 gigawatts of advanced nuclear capacity, but further expansion is uneconomic despite the capital cost reductions projected from their construction.

- ***Advanced coal generation technology incentives.*** This provision provides an investment tax credit (ITC) for up to 6 gigawatts of advanced clean coal power plants, 3 gigawatts of advanced integrated gasification combined cycle plants (IGCC), and 3 gigawatts of advanced pulverized coal plants. The incentive accelerates the construction of IGCC plants by reducing their capital costs and causes an additional 22 gigawatts of IGCC to be built above the Reference Case level. The ITC for pulverized coal does not increase the construction of pulverized coal plants relative to the Reference Case (in which over 100 gigawatts are expected to be constructed) because lower natural gas prices, the PTC for nuclear, the ITC for IGCC, and the PTC for advanced renewable generation all act to reduce the role of pulverized coal below the Reference Case level.

- ***PTC extension for renewable generation***. The CEB extends eligibility for the 1.8-cent-per-kilowatthour, 10-year payment period PTC for wind and "closed-loop" biomass facilities to plants coming online from January 1, 2004, to December 31, 2006. It also expands the program to include renewable electricity generated from geothermal, solar, "open-loop" biomass, municipal solid waste, and landfill gas resources but limits the PTC payment period for these technologies to a maximum of 5 years and limits payments for the open-loop biomass, municipal solid waste, and landfill gas resources to 1.2 cents per kilowatthour. Existing plants that co-fire with biomass fuel can claim the credit. Generation from biomass co-firing is 76 billion kilowatthours higher than in the Reference Case in 2008, but rapidly declines to less then 4 billion kilowatthours above the Reference Case level when the tax credit expires. Generation from wind systems in 2010 is also projected to be about 27 billion kilowatthours higher, largely as a result of accelerating the wind capacity additions that would have occurred later in the forecast. By 2025, wind generation in the CEB is only 7.2 billion kilowatthours higher due mainly to the added nuclear capacity and the expiration of the renewable PTC.

- ***Residential initiatives, including weatherization*.** These provisions provide incentives for solar, wind, and fuel cells, a new standard for torchiere lighting (limiting lighting to 190-watt bulbs), tax credits for energy-efficient existing and new homes, and increased funding for weatherization programs. Only the torchiere standard has a direct and measurable effect on residential energy demand, projected to save 5 billion kilowatthours in 2010 (2 percent of residential lighting) and 8 billion kilowatthours in 2025 (3 percent of lighting). Weatherization funding and tax credits for existing homes, solar, wind and fuel cells are not large enough to measurably affect the Reference Case. Tax credits for efficient new homes increase the number of energy-efficient homes by 16 percent over the Reference Case for the period 2004 to 2006. Because of the provisions modeled in the CEB, consumption, prices, and expenditures are lower in the CEB Case than the Reference Case.

- ***Commercial initiatives, including energy conservation product standards*.** These provisions set new appliance standards for illuminated signs and traffic signals, provide $50 million per year over 5 years to commercialize photovoltaic generation, and provide a 20-percent business ITC for fuel cells, up to $500 per 0.5 kilowatt of capacity, for new capacity added between 2004 through 2006. The commercial standards are projected to reduce electricity consumption by over 4 billion kilowatthours in 2015 and over 5 billion kilowatthours in 2025. The photovoltaic program is projected to add 50 megawatts of PV capacity by 2008 (a 26-percent increase). This capacity is expected to generate about 110 million kilowatthours annually. Since fuel cell systems would have to be operational by 2006 to receive the credit and installed systems costs in the commercial sector are over $5000 per kilowatt, adoption of the fuel cell technology is limited largely to Reference Case levels.

- ***Investment tax credit for combined heat and power*.** Section 1306 of the CEB expands the current 10-percent business ITC for solar power generation equipment to include high-efficiency CHP systems smaller then 15 megawatts. The tax credit creates an incentive to add CHP capacity and induces 98 additional megawatts (a 0.4-percent increase in installed capacity) of qualifying CHP capacity to be built in the period 2004 to 2006. Between 2004 and 2006, 290 megawatts of qualified capacity are added and would receive the ITC.

- ***Continuation of tax credit for alternate fueled vehicles*.** Section 1318 provides tax credits for the purchase of lean-burn technology, hybrid, electric, and fuel cell vehicles. The value of the credit is based on vehicle type (hybrid, fuel cell, etc.), vehicle size (gross vehicle weight rating), efficiency improvement compared to a 2002 model year vehicle, and life-time fuel savings. This provision increases electric vehicle sales by a total of 460 vehicles during the period between 2004 and 2012, from a cumulative total of 60,914 vehicles to 61,374 vehicles. There are no significant impacts on future sales of hybrid or fuel cell vehicles since most of those vehicle sales are due to the zero-emission vehicle program.

Uncertainties of the Analysis

NEMS represents energy-consuming and producing technologies with a high degree of detail; however, the pace of technology development and penetration remains a major uncertainty. To project the future of energy markets, EIA relies upon engineering evaluations of the availability, costs, and characteristics of new technologies, assuming continuing patterns of research and development; however, it is not possible to foresee with certainty how energy-using technologies will develop in the future. To be successful a technology must be developed and also penetrate the market. Barriers that may limit or slow the penetration of apparently cost-effective technologies include: lack of information, subsidies or regulated prices that may hold energy prices artificially low, differences in incentives between builders and users of energy equipment, consumer preference for other equipment attributes instead of efficiency, consumer preference for short payback periods, and uncertainties about performance, reliability, installation and maintenance costs, future technology developments, and infrastructure requirements. EIA analyzes empirical evidence to estimate consumer price response and preferences in order to project consumer reaction to changes in energy prices or improvements in energy efficiency; however, models generally cannot predict shifts in consumer tastes or market transformations associated with the rapid adoption of new technologies.

1. Background and Scope of the Analysis

This report was prepared in response to a February 2, 2004, letter from Senator John Sununu, requesting that the Energy Information Administration (EIA) perform an analysis of the energy production, consumption, price, and import impacts that would result from the Conference Energy Bill (CEB).

This report focuses on those provisions that can be modeled using EIA's National Energy Modeling System (NEMS),[3] and, in EIA's estimation, have the potential to affect energy consumption, supply, prices, and imports. The impacts of the CEB provisions analyzed are estimated by comparing the results of a simulation with all of the provisions that can be modeled with NEMS to the Reference Case of the *Annual Energy Outlook 2004*[4] (*AEO2004*).

Major Provisions of the CEB Included in the Analysis

The following provisions of the CEB were included in the modeling analysis:

- Alaska Natural Gas Transportation System (ANGTS) construction incentives (loan guarantee, treatment plant tax credit)
- Offshore royalty relief
- Section 29 tax credits for unconventional natural gas production
- Renewable fuels standard (RFS)
- Methyl tertiary butyl ether (MTBE) ban
- Removal of oxygenate requirement for reformulated gasoline (RFG)
- New production tax credit (PTC) for advanced nuclear plants
- Advanced coal generation technology incentives
- PTC extension for renewable generation
- Residential initiatives, including weatherization
- Commercial initiatives, including energy conservation product standards
- Investment tax credit for combined heat and power
- Continuation of tax credit for alternative-fueled vehicles

CEB Provisions Not Included in the Analysis

Provisions of the CEB that are not analyzed in this report generally fall into one of four categories:

(1) provisions that cannot be assessed using NEMS and/or those that can only be assessed using proprietary data. For example, NEMS does not explicitly represent electric system reliability, so it cannot be used to quantify the benefits, arguably substantial, of adoption of

[3] Energy Information Administration, The *National Energy Modeling System: An Overview 2003*, DOE/EIA-0581(2003) (Washington, DC, March 2003), web site http://www.eia.doe.gov/oiaf/aeo/overview/index.html.

[4] Energy Information Administration, *Annual Energy Outlook 2004*, DOE/EIA-0383(2004) (Washington, DC, January 2004), http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2004).pdf.

mandatory reliability rules. Other provisions that fall into this category include: standard market design provisions, State and local community programs, actions that increase natural gas market transparency, development of strategies in the Department of Housing and Urban Development, training, bilateral agreements, centers for excellence in research, treatment of nuclear threats, and international technology cooperation.

(2) provisions that provide authorizations, but do not provide funding. EIA is not able to project the level of future appropriations, and the extent to which such appropriations might be offset by reductions in funding provided under existing authorizations. The bill authorizes several research and development programs, grants, educational programs, voluntary programs, demonstration projects, direct payments for power production, and filling the Strategic Petroleum Reserve.

(3) provisions that provide authority to set standards or establish specific targets at some future date. EIA has no basis for speculating on what levels will ultimately be set. Examples of these provisions include establishment of test procedures for several products such as standby power and ceiling fans, grants to States that allow for rebates towards the purchase of energy efficient products, advanced buildings testbeds, collaboration with States, and "encouragement " of Department of Energy and Federal Energy Regulatory Commission actions.

(4) provisions that are either not significant to the market as a whole or are not quantifiable. Examples include updates to executive orders, amendments to the North American Free Trade Agreement, assessment studies, Federal purchase requirements, reimbursements for analyses, project coordination, change of Federal land permitting practices, expedited environmental and judicial reviews, pilot programs, and cooperative agreements.

Provisions that are not addressed for one or more of the above reasons could also have potentially significant impacts on U.S. energy markets. The results and findings of this report apply specifically to those provisions that were modeled.

Methodology and Uncertainties

The analysis in this report is mainly based on results of NEMS. NEMS, like all models, is a simplified representation of reality. Projections are highly dependent on the data, methodologies, model structure, and assumptions used to develop them. Because many of the events that shape energy markets are random and cannot be anticipated (including severe weather, technological breakthroughs, and geo-political disruptions), energy market projections are subject to uncertainty. Furthermore, future developments in technologies, demographics, and resources cannot be foreseen with certainty. Nevertheless, well-formulated models are valuable tools to analyze complex policies because they ensure consistency in the accounting and represent key interrelationships to provide useful insights.

EIA's projections are not statements of what will happen but what might happen, given technology and demographic trends. Because EIA's Reference Case is based on current laws and regulations, it provides a policy-neutral starting point that can be used to analyze energy

policy initiatives. EIA does not propose, advocate, or speculate on future legislative or regulatory changes within its Reference Case. Laws and regulations are assumed to remain as currently enacted or in force; however, the impacts of scheduled regulatory changes, when clearly defined, are reflected.

2. Impacts of Modeled Provisions of the Conference Energy Bill

This analysis begins with a summary, followed by a discussion of each major provision. The impacts of provisions that affect fuel production or supply and power generation markets are discussed first, followed by provisions that affect end-use markets.

The summary of impacts described in this chapter compare the *AEO2004* Reference Case to a case that contains those CEB provisions modeled in NEMS. The impact of incremental R&D investments on technological change is typically not modeled in NEMS because the relationship between any specific R&D investment and the expected technological change cannot be statistically determined. An additional case that evaluates one possible result of incremental R&D for ultra-deep offshore and unconventional resources funded by royalty payments is included as a sensitivity in the box on pages 10 and 11.

Comparison of Selected Energy Performance Indicators

The impact of the CEB provisions analyzed in this report on total primary energy consumption is small. The maximum annual difference from the Reference Case level of primary energy consumption is no more than 0.4 quadrillion British thermal units (Btu) or 0.3 percent. From 2004 through 2020, primary energy consumption is virtually identical to the Reference Case level (Table 1). After 2020, annual consumption is projected to be slightly lower than the Reference Case (by at most 0.4 quadrillion Btu).

Petroleum consumption is slightly lower, primarily due to higher prices resulting from the RFS and the ban on MTBE. Net petroleum imports are reduced by 0.3 percent in 2015 and by 1.2 percent in 2025 through a combination of increased domestic production from the ultra-deep offshore and from slightly reduced gasoline demand which results from higher gasoline prices.

Natural gas consumption is slightly lower in the period from 2009 to 2016 because the renewable and nuclear PTCs increase generation from these fuels and reduce the demand for gas during that period. Increased natural gas production from the CEB natural gas provisions (for example, the Section 29 tax provisions for unconventional gas) displaces natural gas imports and more costly domestic production. Net natural gas imports are reduced by about 0.5 quadrillion Btu in 2010. Natural gas wellhead prices are reduced slightly, resulting in slightly lower electricity prices. Coal consumption is lower at the end of the forecast period (2.5 percent in 2025) due to the PTC for nuclear and renewable technologies and the incentives to increase natural gas production.

Carbon dioxide emissions are lower in the CEB case than in the Reference Case in all years as the mix of fuels changes. In 2025 carbon dioxide emissions, are 96 million metric tons (1.2 percent)

lower in the CEB case than in the Reference Case.[5] The projected paths for some of the energy indicators identified in Table 1 tends to converge in the CEB and Reference Cases toward the end of the forecast horizon. This results because of depletion effects and the scheduled end of the CEB provisions, which are not expected to induce sufficient cost reductions to spur the additional production of alternative sources of supply beyond the timeframe of the incentives.

Table 1. Comparison of Selected Energy Measures, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Primary Energy Consumption (quadrillion Btu)	97.7	111.8	111.8	119.7	119.8	136.5	136.1
Petroleum Consumption	38.1	44.2	44.1	48.3	48.0	55.0	54.7
Natural Gas Consumption	23.4	26.8	26.6	28.7	28.6	32.2	32.3
Coal Consumption	22.2	25.2	24.8	26.3	26.1	31.7	30.9
Nuclear Power	8.2	8.3	8.3	8.5	8.9	8.5	9.0
Renewable Energy	5.8	7.2	7.9	7.8	8.1	9.0	9.1
Other	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Net Imports (quadrillion Btu)							
Petroleum	22.6	28.1	27.9	33.2	33.1	41.7	41.3
Natural Gas	3.6	5.6	5.1	6.4	6.3	7.4	7.3
Electricity Price (2002 cents per kilowatthour)	7.2	6.6	6.6	6.8	6.7	6.9	6.8
Average Wellhead Natural Gas Price (2002 dollars per thousand cubic feet)	2.95	3.40	3.41	4.19	4.10	4.40	4.40
Domestic Natural Gas Production (quadrillion Btu)	19.56	21.05	21.41	22.20	22.23	24.64	24.90
Carbon Dioxide Emissions (million metric tons)	5729	6559	6501	7028	6969	8142	8046

Note: Totals may not add due to rounding.
Sources: National Energy Modeling System, date codes aeo2004.d101703e and nrgbill00.d011304d.

Natural Gas and Oil Supply Provisions

Alaska Natural Gas Pipeline Incentives

Sections 386, 1355, and 1356 provide incentives for the construction of an Alaska natural gas pipeline to supply the lower-48 States: a Federal loan guarantee for pipeline construction, a 15-percent tax credit for the construction of a high-volume gas treatment plant, and a 7-year depreciation schedule for tax purposes for high-volume natural gas pipelines. The loan guarantee shifts the risk of the pipeline loan from the lenders to the Federal government, resulting in more favorable interest rates, which ultimately result in lower required tariffs for full cost recovery. The 15-percent tax credit for gas treatment plants reduces the expected treatment charge from $0.42 per

[5] Note that the carbon dioxide figures in this report are expressed in carbon-dioxide-equivalent terms rather than the carbon-equivalent terms used in past EIA Service Reports.

thousand cubic feet (mcf) to $0.37 per mcf (in 2002 dollars). The accelerated depreciation provision is expected to result in improved cash flow for the pipeline owners but does not appreciably alter the tariff.

The net effect of these provisions is to reduce the price necessary to trigger the construction of the pipeline by $0.15 per mcf. This provision advances the entry-into-service of the pipeline by 1 year, 2017 instead of 2018 as projected in the Reference Case.

Ultra-Deep Gas Royalty Relief in Shallow Waters

Section 314 of the CEB authorizes the Secretary of Interior to publish a final regulation to complete the rulemaking begun by the Notice of Proposed Rulemaking entitled "Relief or Reduction in Royalty Rates—Deep Gas Provisions," published in March 2003. The Minerals Management Service published this final rule on January 26, 2004, effective March 1, 2004. The rule grants royalty relief for natural gas production from wells drilled to 15,000 feet or deeper on leases issued before January 1, 2001, in the shallow waters (less than 200 meters) of the Gulf of Mexico. Production of gas from the completed deep well must begin before 5 years after the effective date of the final rule. The minimum volume of production with suspended royalty payments is 15 billion cubic feet for wells drilled to at least 15,000 feet and 25 billion cubic feet for wells drilled to more than 18,000 feet. In addition, unsuccessful wells drilled to a depth of at least 18,000 feet would receive a royalty credit for 5 billion cubic feet of natural gas. Section 314 further grants royalty suspension for volumes of not less than 35 billion cubic feet from ultra-deep wells on leases issued before January 1, 2001. An ultra-deep well is defined as a well drilled to at least 20,000 feet. Between 2004 and 2008, this provision increases offshore deep gas production in shallow water. However, total offshore production does not increase during this period, because lower natural gas prices relative to the Reference Case in these years slows the development of deepwater resources.

Extension and Modification of the Section 29 Tax Credit

Section 1345 of the CEB would extend and modify Section 29 of the Internal Revenue Code, established under the Windfall Profit Tax of 1980, under which tax credits were provided for producing fuel from nonconventional sources. Fuels that were eligible to receive the credit included: oil produced from shale and tar sands; gas from geopressurized brine, Devonian shale, coal seams, tight formations, and biomass; liquid, gaseous, or solid synthetic fuels produced from coal; fuel from qualified processed formations or biomass; and steam from agricultural products. For facilities producing gas from biomass or synthetic fuel from coal, the credit is available for production through 2007 from facilities placed in service before July 1, 1998. For all other sources to which Section 29 applied, the credit was available for production through 2002 for those facilities placed in service from 1980 to 1992.

In general, Section 1345 allows a credit of $3 (indexed for inflation with 2002 as the base year) per barrel (or Btu equivalent) for production from nonconventional sources for 4 years of production

prior to 2010 for new wells placed in service through 2006. Fuels eligible to receive the new credit include: oil produced from shale and tar sands; gas from geopressurized brine, Devonian shale, coal seams, and tight formations; landfill gas; fuels from agricultural and animal waste; refined coal; coal-mine gas; and coke and coke gas. Production from existing oil and gas wells drilled from 1980 through 1992, previously eligible through 2002, is also eligible for the credit through 2006. For smaller landfills, there is a credit of $3 for facilities placed in service after June 30, 1998, and before January 1, 2007, and the credit is reduced to $2 for larger landfills already required to add gas collection facilities. Refined coal facilities placed in service before January 1, 2008, are also eligible for 5 years of tax credit. The credit in Section 1345 is limited to an average daily production of 200,000 cubic feet of gas (or oil equivalent) per well or facility. The credit is fully effective when the price of crude oil is $35 per barrel or less and phases out gradually as the price rises to $41 per barrel.

EIA analyzed Section 1345 with respect to gas from tight formations (tight sands), Devonian shale (gas shales), and gas from coal seams (coalbed methane). EIA allowed a credit of 53 cents per mcf ($3 per barrel Btu equivalent) for 4 years of gas production prior to 2010 for new wells placed in service through 2006. The credit was represented as an increment to the wellhead price in the first 4 years of a projected price path utilized to determine the decision whether or not to drill a well.

The increased profitability of nonconventional fuels under Section 1345 of the CEB is projected to result in significant drilling increases, higher reserve levels, and, ultimately, increased production (Table 2). Section 29 credits provide significant incentives to add new unconventional reserves through 2006 and to produce from them. Once the new facilities are added, production will continue until they are no longer economic. The need for new drilling in 2009 is diminished relative to the *AEO2004* Reference Case because of the large number of wells drilled in 2006 and 2007, which continue to produce through 2010. In the CEB case, the tax credit for Section 29 wells makes more of the marginal supplies profitable to develop early and its effect is noticed in the last decade of the forecast in increased expected ultimate recovery per well (EUR) shown in Table 2. During the period for which wells are eligible for the credit, 2004 to 2006, 19 percent more nonconventional gas wells are projected to be drilled in the CEB Case than in the Reference Case. Total nonconventional reserve additions over this period are projected to be 13 percent higher in the CEB Case than in the Reference Case. With the larger reserve base, cumulative nonconventional production is projected to be 3 percent higher in the CEB Case than the Reference Case from 2004 to 2009, the period during which the credit could be claimed, for 4 consecutive years, on production from an eligible well.

Summary of Natural Gas and Oil Market Impacts from CEB Provisions

The CEB provisions for natural gas supply are expected to increase domestic production from unconventional and offshore sources, thereby placing downward pressure on wellhead prices. Table 3 provides a summary of price, production, import, and consumption impacts. The effect of the Section 29 credit is felt primarily in the short term. Cumulative unconventional gas production

Table 2. Unconventional Natural Gas Projections, *AEO2004* and CEB Case

	2004		2006		2009		2015		2025	
	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB
Total Wells Drilled	10,274	11,716	8,770	10,372	7,481	7,185	7,665	7,507	5,959	6,191
Successful Wells Drilled	8,807	10,072	7,505	8,891	6,414	6,148	6,508	6,358	4,946	5,135
Average EUR[a] per Successful Well (billion cubic feet per well)	1.222	1.146	1.331	1.28	1.425	1.482	1.373	1.404	1.580	1.586
Reserve Additions (trillion cubic feet)	10.75	11.54	9.98	11.38	9.13	9.11	8.93	8.93	7.81	8.15
Production (trillion cubic feet)	6.12	6.12	6.45	6.68	7.24	7.45	8.67	8.74	9.17	9.46
Average Wellhead Price (2002 dollars per thousand cubic feet)	3.88	3.87	3.48	3.31	3.47	3.43	4.19	4.10	4.40	4.40

[a]Estimated Ultimate Recovery.
Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

in the CEB between 2005 through 2010 is 1.3 tcf higher than in *AEO2004* and 0.68 tcf higher between 2020 and 2025. Increased unconventional production earlier drives prices below *AEO2004* by as much as $0.16 per mcf in 2006 and 2007, but then prices rise to Reference Case levels in 2010. The lower natural gas wellhead prices slightly delay some of LNG projects in the Reference Case, raising the lower-48 domestic gas prices above the Reference Case in 2010. After 2010, prices in the CEB Case fall below Reference Case levels due to other provisions of the CEB which moderate gas demand for electricity generation (e.g., the renewable and nuclear PTCs). The largest price decrease from the Reference Case to the CEB Case is projected to occur in 2018 at $0.22 per mcf. In the last 5 years of the forecast, the price difference narrows as some of the provisions of the bill end and the lower prices earlier in the forecast result in lower production from sources not benefited by provisions in the bill. Higher production levels earlier in the forecast also result in lower available resources later in the forecast. By 2025, the price of natural gas in the CEB Case is $4.40 per mcf, the same as in the Reference Case.

The natural gas supply provisions of the CEB result in increased production, lower prices, and increased demand of 0.13 trillion cubic feet (tcf) by 2025. The increase in domestic production is expected to exceed the increase in demand because increased profitability expected under the CEB allows domestic production to improve its competitive position over imported sources. Net natural gas imports are lower than the Reference Case throughout the forecast period, with the greatest decrease in 2010 at almost 0.6 tcf. The majority of this difference in most of the projection period is attributable to reductions in liquefied natural gas (LNG) imports.

Table 3. Natural Gas and Oil Supply Impacts, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB
Lower 48 Average Wellhead Gas Price (2002 dollars per thousand cubic feet)	2.95	3.40	3.41	4.19	4.10	4.40	4.40
Natural Gas Production (trillion cubic feet)							
Lower 48 Production	18.62	19.90	20.25	20.98	21.01	21.29	21.54
Onshore Conventional	7.83	7.20	7.16	7.44	7.37	7.09	7.13
Onshore Unconventional	5.93	7.28	7.51	8.67	8.74	9.16	9.46
Offshore	4.86	5.41	5.57	4.87	4.91	5.03	4.96
Alaska Production	0.43	0.60	0.60	0.64	0.64	2.71	2.71
Net Natural Gas Imports(trillion cubic feet)	3.49	5.50	4.94	6.24	6.11	7.24	7.11
Pipeline	3.33	3.34	3.25	3.02	2.97	2.44	2.35
Liquefied Natural Gas	0.17	2.16	1.69	3.22	3.14	4.80	4.76
Natural Gas Consumption (trillion cubic feet)	22.78	26.15	25.94	28.03	27.92	31.41	31.54
Lower 48 Dry Gas Reserves (trillion cubic feet)	180.03	201.2	203.03	203.74	204.66	193.51	194.50
Lower 48 Offshore Crude Oil Production (million barrels per day)	1.53	2.40	2.42	2.21	2.20	2.06	2.09

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

Increased Research and Development Spending from Sections 941 to 949 of the CEB

Two types of uncertainty characterize the effects of proposed authorizations of Federal R&D investments. First, the timing and level of the net change in federal R&D spending is often different from the authorized amount. Second, a statistically reliable relationship between the level of R&D spending for specific technologies and the actual outcome of that R&D has not been developed. Even if both of these uncertainties were resolved, the analysis is complex because the levels of private sector R&D expenditures are usually unknown but often far exceed R&D spending by the Federal government. Consequently, EIA cannot provide an estimate of the impact on technological change of an increase in Federal R&D spending. However, EIA can provide the results of a sensitivity case using an assumption of the technological impact that increased spending on R&D might have.

Sections 941 to 949 of the CEB calls for the allocation of $150 million annually into a fund (the Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research Fund) for Federally sponsored R&D. The money is to come from Federal royalty payments that are allocated in each fiscal year from 2004 through 2013 and would not go through the annual appropriations process. The R&D is to be targeted for the development of ultra-deep (greater than 1,500 meters water depth) offshore, unconventional natural gas, and other petroleum resources. Unconventional natural gas and other petroleum resources are "natural gas and other petroleum resources located onshore in an economically inaccessible geological formation, including resources of small producers."

Dedicated funding outside of the annual appropriations process implies relatively low funding-related uncertainty for this program. However, the uncertainty in relating increased Federal spending to technological progress remains important. Experts in the Department of Energy's Office of Fossil Energy (FE) believe that the new R&D funding would increase the technological progress for the affected resources (ultra-deep offshore oil and gas and unconventional gas production) by 50 percent over its value in the Reference Case. They arrived at this conclusion by verifying that the proposed additional R&D funding would bring total Federal R&D spending back to the levels represented in the Reference Case of *AEO1997* which used the same rates.[a] The CEB case with the added FE assumptions regarding accelerated technological change due to the Section 941-to-949 programs, referred to as the FE/CEB case, was run to assess the impact of the assumed accelerated technological change[b] on oil and gas supply and prices.

The pattern of natural gas wellhead prices and production in the FE/CEB case is as expected. Successful R&D increases supply from the ultra-deep and unconventional resources and lowers wellhead prices

[a]Coincidently, the Reference Case of *AEO1997* has technological change rates that are comparable to the *AEO2004* High Technology Case.
[b]This acceleration is assumed to begin 2 years after the onset of R&D funding for unconventional technologies and 5 years after the onset for ultra-deep offshore technologies.

throughout the forecast. Natural gas wellhead prices are as much as $0.30 per mcf lower than in the Reference Case and as much as $0.20 per mcf lower than in the CEB Case.

Between 2009 and 2025, cumulative crude oil production from the ultra-deep offshore is over 850 million barrels higher than in the Reference Case and over 800 million barrels higher then the CEB Case. Cumulative natural gas production is 3.8 tcf higher than in the Reference Case and 3.2 tcf higher than the CEB Case. It is important to note that the technological improvements assumed for this case would also have an impact in producing areas outside the United States, which would potentially affect world oil markets.

The Table below summarizes key comparisons between the FE/CEB Case, the CEB Case, and the *AEO2004* Case.

Impact of Increased R&D Funded by Royalty Payments on Natural Gas and Oil Supply Using Office of Fossil Energy Assumptions Regarding the Impact of Increased Federal R&D Spending

	2002	2010			2015			2025		
		AEO 2004	CEB	FE/ CEB	AEO 2004	CEB	FE/ CEB	AEO 2004	CEB	FE/ CEB
Lower 48 Average Wellhead Gas Price (2002 dollars per thousand cubic feet)	2.95	3.40	3.41	3.32	4.19	4.10	3.90	4.40	4.40	4.35
Natural Gas Production (trillion cubic feet)										
Lower 48 Production	18.62	19.90	20.25	20.42	20.98	21.01	22.00	21.29	21.54	22.20
Onshore Conventional	7.83	7.20	7.16	7.17	7.44	7.37	7.26	7.09	7.13	6.98
Onshore Unconventional	5.93	7.28	7.51	7.75	8.67	8.74	9.66	9.16	9.46	10.06
Offshore	4.86	5.41	5.57	5.50	4.87	4.91	5.09	5.03	4.96	5.16
Alaska Production	0.43	0.60	0.60	0.60	0.64	0.64	0.64	2.71	2.71	2.71
Natural Gas Consumption	22.78	26.15	25.94	26.04	28.03	27.92	28.30	31.41	31.54	32.09
Lower 48 Dry Gas Reserve Additions	24.0	21.2	21.0	22.8	20.8	20.6	23.1	19.2	19.9	20.0
Onshore Conventional	6.9	7.0	7.0	6.9	7.5	7.4	7.2	6.6	6.7	6.6
Onshore Unconventional	11.5	9.0	8.7	10.2	8.9	8.9	11.2	7.8	8.1	8.2
Offshore	5.6	5.3	5.4	5.7	4.3	4.3	4.6	4.8	5.1	5.1
Lower 48 Offshore Crude Oil Production (million barrels per day)	1.53	2.40	2.42	2.42	2.21	2.20	2.31	2.06	2.09	2.10

Sources*:* National Energy Modeling System date codes aeo2004.d101703e, nrgbill00.d011304d, and nrgbill50.d010904a.

Renewable Fuels Standard, MTBE Ban, Oxygenate Waiver, and Ethanol and Biofuel Tax Provisions

The CEB Case includes an RFS that requires 3.1 billion gallons of renewable fuels in the transportation sector in 2005, increasing to 5.0 billion gallons by 2012. For 2013 and each year thereafter, the renewable fuels required would be proportional to the total gasoline sold in the Nation.[6] Both ethanol and biodiesel are considered as renewable fuels, with a 1.5-gallon credit toward the RFS for every gallon of biomass ethanol produced. The use of MTBE would be prohibited nationwide starting in 2015.[7] The CEB Case assumes that States would not seek a waiver from the U.S. Environmental Protection Agency to allow the continued use of MTBE. If economical, merchant MTBE producers are assumed to convert to iso-octane production with grant assistance up to $250 million per year between 2005 and 2012. The CEB Case also incorporates the elimination of the oxygen content requirement for reformulated gasoline starting in 2005.[8]

Currently, there is a Federal tax credit of $0.52 per gallon of ethanol blended into gasoline, which will be reduced to $0.51 per gallon for 2005 and 2006 and expire in 2007. The Federal tax credit for ethanol has been extended several times in the past, and the *AEO2004* Reference Case assumes the tax credit would be extended indefinitely. The CEB extends the ethanol tax credit to December 31, 2010. Because the RFS requirements would assure the increasing use of ethanol in transportation fuels, the CEB Case assumes the ethanol tax credit would end as stated in the CEB starting in 2011. A tax credit of $0.50 per gallon of biodiesel produced from recycled oil or $1.00 per gallon of biodiesel produced from virgin oil or virgin animal fat applies to biodiesel blended with petroleum diesel. The credit is effective from December 31, 2003, through December 31, 2005.

Table 4 summarizes the major impacts of the CEB on the petroleum market.[9] The RFS requirements would increase the ethanol consumption by 0.86 billion gallons in 2010, 1.81 billion gallons in 2015, and 1.96 billion gallons in 2025. Relative to the ethanol consumption of 2.04 billion gallons in 2002, it represents an increase in ethanol consumption of 113 percent by 2010, 173 percent by 2015, and 205 percent by 2025. Ethanol accounts for essentially all of the additional renewable transportation fuels consumption compared to the Reference Case. Biodiesel supply is not expected to be affected significantly by the RFS nor by the short-term tax incentives for biodiesel.

Net petroleum imports would be reduced by 100,000 barrels per day (0.8 percent) in 2010, 50,000 barrels per day (0.3 percent) in 2015, and 230,000 barrels per day (1.2 percent) in 2025.

[6] Small refineries with a capacity not exceeding 75,000 barrels per calendar day and the States of Alaska and Hawaii are exempted from the renewable fuels standard.
[7] The Reference Case includes MTBE bans in 17 States (mainly in California, New York, Connecticut, Missouri, and Kentucky), which collectively accounted for about 45 percent of the Nation's MTBE consumption in 2002.
[8] The oxygenate waiver would take effect 270 days after enactment of the CEB, except for California, which would receive the exemption immediately. Because 2005 is the first forecast year for the Petroleum Market Module of NEMS, the oxygenate waiver is effective in that year.
[9] The incremental production of corn requires energy inputs to till the land and fertilize, harvest, and transport the corn. These additional requirements are not accounted for in NEMS.

This is partially attributable to the increase in renewable fuels use in the transportation sector and partly due to reduced demand for gasoline as the result of higher prices. Slightly lower domestic petroleum use contributes to the reduction in petroleum imports, which are also affected by other provisions in the CEB not related to the RFS or MTBE ban.

Table 4. Oil Production, Net Petroleum Imports, and Gasoline Prices, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Ethanol Consumption (billion gallons per year)	2.04	3.49	4.35	3.76	5.57	4.26	6.22
Renewable Fuels Consumption[a] (billion gallons per year)	2.06	3.53	4.39	3.81	5.61	4.32	6.28
Domestic Crude Oil Production (million barrels per day)	5.62	5.93	5.95	5.53	5.52	4.61	4.65
Net Petroleum Imports[b] (million barrels per day)	10.54	13.16	13.06	15.52	15.47	19.68	19.45
Average Gasoline Price Differential (2002 cents per gallon)							
CEB Case over *AEO2004* Reference Case			0.3		3.0		2.9
Impact of Termination of Ethanol Tax Credit[c]			0.0		1.2		0.9
Net Impact of RFS and MTBE Ban			0.3		1.8		2.0
Average RFG Price Differential (2002 cents per gallon)							
CEB Case over *AEO2004* Reference Case			0.4		8.1		7.5
Impact of Termination of Ethanol Tax Credit			0.0		2.7		2.0
Net Impact of RFS and MTBE Ban			0.4		5.4		5.5

a. Renewable fuels consumption includes both ethanol and biodiesel. For the CEB Case, the total renewable fuels consumption is slightly less than the 4.4 billion gallons specified for 2010 because of a small amount of biomass ethanol, which accounts for 1.5 gallons of renewable fuel for each gallon of biomass ethanol produced.
b. Net petroleum imports include both net crude and net product imports.
c. The impact of the ethanol tax credit declines over time because it is specified in nominal terms.
Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

The CEB Case projects an increase of 0.3 cents per gallon in the average gasoline price and an increase of 0.4 cents per gallon in the average RFG price compared to the Reference Case in 2010. These estimated price increases result mainly from the RFS which would require additional renewable fuels in the gasoline pool (essentially more ethanol blended into conventional gasoline). Because ethanol would incur a vapor pressure penalty of roughly 1 pound per square inch (psi), it would cost slightly more to produce the gasoline blendstock for ethanol blending in order to maintain limits on volatile organic compound (VOC) emissions.

By 2015, the CEB Case projects an increase of 3.0 cents per gallon in the average gasoline price and 8.1 cents per gallon in the average RFG price, relative to the Reference Case. Included in this price is the elimination of the ethanol tax credit in 2011 which is expected to increase the

gasoline price by the amount of ethanol blended, about 1.2 cents per gallon for all gasoline (including conventional gasoline and RFG) and 2.7 cents per gallon for all RFG.[10] The remaining cost increases result from the phase-out of MTBE use by 2015. Because of the MTBE ban, cost increases of about 1.8 cents per gallon for all gasoline and 5.4 cents per gallon for average RFG in 2015 are expected. The volume loss of 11 percent for RFG due to the MTBE ban would favor the blending of ethanol in most RFG areas to make up the loss of volume and octane. Because of the vapor pressure penalty from blending ethanol and much stricter vapor pressure specifications for the RFG, it would be harder and more costly to provide RFG blendstock for ethanol blending. Thus, the MTBE ban has a greater price impact than the effect of the RFS.

Electric Power Provisions

The key CEB provisions analyzed affecting electricity include:

- a 3-year extension of the PTC for qualified renewables,
- a clean coal technology ITC for 6 gigawatts of new capacity, and
- a PTC for 6 gigawatts of new advanced nuclear capacity.

Renewables

The CEB contains numerous provisions relating to renewable energy, especially with respect to renewable energy used for electric power production. The 1.8-cent-per-kilowatthour, 10-year payment period PTC for wind and "closed-loop"[11] biomass plants expired on December 31, 2003. The CEB would extend eligibility to plants coming online from January 1, 2004, to December 31, 2006. It also expands the program to include renewable electricity generated from geothermal, solar, "open-loop" biomass[12], municipal solid waste, and landfill gas resources. Some of the newly eligible technologies would only be able to claim two-thirds of the value of the PTC for wind and closed-loop biomass, that is, 1.2 cents, and each of these program additions are limited to a 5-year payment period. Since the CEB specifies no earliest in-service date for plants utilizing open-loop biomass fuel, existing plants that co-fire with biomass fuel can claim the credit.

---

[10] Gasoline blended with more ethanol would experience a higher price impact (e.g., gasohol with 10-percent ethanol would experience a price impact of 5.1 cents per gallon) than gasoline containing no ethanol.

[11] According to 26 USC 45, "The term ``closed-loop biomass'' means any organic material from a plant which is planted exclusively for purposes of being used at a qualified facility to produce electricity." Such a supply is also sometimes referred to as "energy crops".

[12] Open-loop biomass refers to a variety of waste and by-product sources including agricultural wastes, forestry and mill waste, urban wood waste, and landscape trimmings, but not from municipal solid waste, recyclable paper, or sources specifically planted to provide energy. According to the CEB, "The term 'open-loop biomass' means (i) any agricultural livestock waste nutrients, or (ii) any solid, nonhazardous, cellulosic waste material which is segregated from other waste materials and which is derived from (I) any of the following forest- related resources: mill and harvesting residues, precommercial thinnings, slash, and brush, (II) solid wood waste materials, including waste pallets, crates, dunnage, manufacturing and construction wood wastes (other than pressure-treated, chemically-treated, or painted wood wastes), and landscape or right-of-way tree trimmings, but not including municipal solid waste, gas derived from the bio-degradation of solid waste, or paper that is commonly recycled, or (III) agriculture sources, including orchard tree crops, vineyard, grain, legumes, sugar, and other crop by-products or residues."

The PTC extension and expansion does support significant growth in generation from wind and biomass co-firing (Table 5). By 2010, generation from wind with the PTC extension is more than double the generation in the Reference Case. However, much of the additional construction of wind capacity is due to the accelerated construction of units that would have occurred later in the Reference Case. By 2025, the level of renewable generation with the PTC extension is only 14 percent above the Reference Case.

By allowing existing plants to claim the PTC for burning "open-loop" biomass, significant co-firing in existing coal facilities is induced. Some coal facilities are able to quickly modify operations, while others may take a couple of years to make the small capital investments (about $200 per kilowatthour) necessary to take advantage of this provision. At the peak PTC-eligibility year of 2008, there are 85 billion kilowatthours of biomass generation in co-fired facilities, compared to only 9 billion kilowatthours in the same year for the Reference Case. However, once the 5-year payment period for the credit has ended, it is no longer economical to utilize most of the incremental biomass fuel. With minimal investment cost to recover, co-firing operations are greatly reduced, although they remain somewhat higher than in the Reference Case throughout the projection period.

Table 5. Nonhydroelectric Renewable Generation and Capacity, *AEO2004* and CEB Case

		2008		2010		2015		2025	
	2003	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB
Renewable Generation (billion kilowatthours)									
Geothermal	13.82	19.14	19.14	23.25	23.10	32.31	32.52	46.66	45.66
Municipal Solid Waste	25.58	27.81	28.56	28.11	28.68	28.18	28.73	28.50	28.83
Wood and Other Biomass	15.74	21.64	99.23	23.53	63.75	25.07	28.53	29.16	30.74
Dedicated Plants	10.75	12.56	13.95	13.26	14.00	14.03	14.13	22.90	21.69
Cofiring	4.99	9.07	85.27	10.26	49.74	11.05	14.40	6.25	9.05
Solar Thermal	0.52	0.82	0.82	0.84	0.84	0.97	0.97	1.11	1.11
Solar Photovoltaic	0.08	0.28	0.28	0.36	0.36	0.57	0.57	1.02	1.02
Wind	17.38	22.46	32.31	24.07	50.64	32.95	56.55	53.16	60.39
Renewable Capacity (gigawatts)									
Geothermal	2.90	3.51	3.51	4.01	3.99	5.11	5.14	6.84	6.72
Municipal Solid Waste	3.61	3.89	3.98	3.92	3.99	3.92	3.99	3.95	3.99
Wood and Other Biomass	1.85	2.09	2.09	2.20	2.14	2.32	2.37	3.74	3.60
Solar Thermal	0.33	0.43	0.43	0.43	0.43	0.47	0.47	0.52	0.52
Solar Photovoltaic	0.04	0.12	0.12	0.15	0.15	0.24	0.24	0.41	0.41
Wind	6.5	7.6	10.39	8.01	15.41	10.48	16.99	15.99	18.02

Sources: National Energy Modeling System date codes aeo2004.d101703e, nrgbill00.d011304d.

Coal

Section 1351 of the CEB provides a 17.5-percent ITC for new coal-fired generating units employing advanced clean coal technologies, such as advanced pulverized coal, fluidized bed, or IGCC. The tax credit applies to facilities placed in service before January 1, 2017, and is limited to 6 gigawatts. The 6-gigawatt cap is to be divided evenly between advanced IGCC plants and advanced pulverized coal plants. To qualify as an advanced clean coal technology, a plant must meet a minimum technology-specific energy conversion efficiency and carbon dioxide emission rate.

The ITC for advanced IGCC units is expected to increase this capacity by about 22 gigawatts above the Reference Case level. While the ITC is only available to the first 3 gigawatts of IGCC capacity, it causes plants to be built earlier than otherwise expected, making the technology more competitive in later years of the projections. An ITC is also specified for 3 gigawatts of advanced pulverized coal capacity, but more than 3 gigawatts are expected without the ITC, so the CEB does not cause more advanced pulverized coal capacity to be built. Overall, the total pulverized coal capacity is actually lower in the CEB case because the combination of lower natural gas prices that make natural gas capacity more economical and the tax credits that bring on more nuclear and renewable capacity dampen the additions of new pulverized coal capacity.

Nuclear

Section 1310 of the CEB adds Section 45L to U.S. Code Title 26, Section 45, which provides a 1.8-cent-per-kilowatthour tax credit (unadjusted for inflation) for production from advanced nuclear facilities for the first 8 years of their operation. To receive the credit, new facilities must be built before January 1, 2021. The total amount of the credit is limited to $125 million annually per 1 gigawatt of new capacity, and the total amount of new capacity that can receive the credit is 6 gigawatts. The CEB is projected to lead to the addition of 6 gigawatts of advanced nuclear capacity through 2025. However, no additional nuclear capacity beyond the 6 gigawatts eligible for the tax incentive is expected.

Summary of Electric Sector Impacts

Taken together, the CEB tax credit provisions affecting renewables, nuclear, and coal generation result in slightly lower electricity prices and a slight shift in the mix of capacity added to meet the demand for electricity through 2025 (Tables 5 and 6). The change in electricity prices is driven by lower fuel prices, while the CEB tax incentives drive the capacity mix changes. In 2025, electricity sales in the CEB case are 9 billion kilowatthours lower than in the Reference Case even though electricity prices are slightly lower. This is primarily due to the torchiere efficiency standard, which is expected to reduce electricity demand by 8 billion kilowatthours in the residential sector.

Table 6. Electric Power Sector Results, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Electricity Price (2002 cents per kilowatthour)	7.24	6.64	6.60	6.82	6.72	6.91	6.84
Electricity Sales (billion kilowatthours)	3,492	4,055	4,051	4,429	4,424	5,207	5,198
Electric Generating Capacity (gigawatts)							
Pulverized Coal	310.4	309.8	307.5	321.0	315.8	405.5	374.5
Advanced Coal	0.5	0.5	3.7	0.5	4.7	6.8	28.3
Oil/Gas	373.0	402.6	400.3	452.5	444.0	512.2	513.6
Nuclear	98.7	100.6	100.6	102.1	108.1	102.6	108.6
Renewable	91.7	97.4	104.6	101.2	107.9	110.1	111.9
Other[a]	20.2	20.8	20.9	22.8	23.3	32.7	33.8
Total	894.5	931.7	937.7	1,000.2	1,003.8	1,169.9	1,170.7
Generation (billion kilowatthours)							
Coal	1,907	2,235	2,200	2,352	2,331	3,008	2,942
Oil/Gas	683	880	839	1,087	1,038	1,197	1,203
Nuclear	780	794	799	812	854	816	864
Renewable	309	405	472	425	452	464	473
Other[a]	-9	-9	-9	-8	-8	-4	-4
Total	3,670	4,304	4,300	4,667	4,666	5,482	5,478

[a]Other includes pump storage and distributed generation.

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

End-Use Demand Provisions

Residential Sector

Of all the provisions in the CEB for the residential sector that meet the criteria for inclusion in the modeling analysis, only the torchiere lighting standard has a direct and measurable effect on residential energy demand. The standard, effective January 1, 2005, limits the output of torchiere lights to 190 watts per bulb. Today, torchiere bulbs in the 300-watt range are common in the marketplace, allowing room for future energy savings. In 2010, the torchiere standard is projected to save 5 billion kilowatthours (2 percent of residential lighting demand), increasing to 8 billion kilowatthours by 2025 (3 percent of lighting demand).

The remaining residential sector provisions in the CEB that could be analyzed have little or no effect on energy demand. Increases in funding for weatherization programs and tax credits for existing homes are projected to reduce heating and cooling requirements by less than one-tenth of one percent. The tax credits for solar, wind, and fuel cell equipment are not sizable enough to

bring about any additional purchases of these relatively expensive products. As a result, the tax credit would be given to purchasers of this equipment who would be expected to purchase it without the tax credit, without encouraging additional expansion of the market. The tax credit for new homes spurs the construction of an additional 107 thousand homes that meet or exceed the Energy Star requirement. This represents a 16-percent increase over the number of homes built to these specifications in the Reference Case and about 2 percent of the homes built in the 2004 to 2006 time period.

Residential consumers are also affected by CEB provisions directed towards energy suppliers that lower the energy prices, partially offsetting the energy demand reductions in the CEB Case, relative to the Reference Case. Table 7 confirms the reduction in energy consumption, prices, and expenditures in the CEB Case, relative to the Reference Case.

Table 7. Residential Sector Results, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Delivered Energy Consumption (quadrillion Btu)	11.28	12.58	12.56	13.06	13.06	14.17	14.15
Average Energy Prices (2002 dollars per million Btu)	14.73	14.21	14.16	14.93	14.75	15.38	15.28
Energy Expenditures (2002 dollars per household)	1,454	1,444	1,436	1,499	1,480	1,536	1,524

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

Commercial Sector

Section 133 of the CEB provides specific conservation standards for illuminated exit signs and low voltage dry-type transformers manufactured on or after January 1, 2005. The provision requires exit signs to meet Version 2.0 Energy Star performance requirements, power usage of 5 watts or less with size and luminance levels also specified. Low voltage dry-type transformers must meet the Class I Efficiency Levels specified by the National Electrical Manufacturers Association. The provision also requires traffic signal modules manufactured on or after January 1, 2006, to meet Energy Star performance requirements. To estimate the impacts of these standards, electricity use reductions relative to reference case assumptions were estimated and included in the CEB Case. The standards are projected to reduce commercial delivered electricity demand in the "Other Uses" category by 8 trillion Btu or 2 billion kilowatthours in 2010, 15 trillion Btu in 2015, and 18 trillion Btu (over 5 billion kilowatthours) annually in 2025 as the existing equipment stock is replaced and the effects of the standards are realized. However, reduced electricity prices due to other provisions of the CEB result in slightly higher projected commercial electricity use in the CEB Case than in the Reference Case.

Section 205 of the CEB establishes a photovoltaic energy commercialization program, including the installation of at least 150 megawatts cumulative capacity in public buildings from 2004 through 2008. The provision authorizes $50 million per year for the 5-year program, about one-third of the funds needed to install the full 150 megawatts specified in the bill. To estimate the impact of the provision, extra "program-driven" commercial photovoltaic capacity was added over the 5-year program equal to about 50 megawatts, the capacity consistent with the authorized funding. The additional photovoltaic capacity installed for this provision is projected to generate about 110 million kilowatthours of electricity annually post-2007. Using the current Federal Energy Management Program discount rate, the investment results in a levelized generation price of more than 16 cents per kilowatthour, not including operating and maintenance costs.

Section 1303 provides a 20-percent business ITC for fuel cell systems up to a maximum of $500 per 0.5 kilowatt of capacity. Qualifying equipment must have electrical capacity of at least 0.5 kilowatts and be placed in service from 2004 through 2006. Fuel cell adoption is limited because current system costs are more than $5,000 per kilowatt and the timeframe of the credit is short. Very few additional sales of fuel cells would be purchased as a result of the tax credit.

Supply-driven energy price effects for commercial consumers, similar to those projected for the residential sector, also occur. Composite energy prices and expenditures are projected to be one percent lower in 2025 (Table 8).

Table 8. Commercial Sector Results, *AEO2004* and CEB Case

	2002	2010		2015		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Delivered Energy Consumption (quadrillion Btu)	8.25	9.74	9.74	10.51	10.52	12.19	12.19
Average Energy Prices (2002 dollars per million Btu)	$14.68	$13.77	$13.69	$14.62	$14.40	$15.28	$15.14
Energy Expenditures (2002 dollars per thousand square feet)	$1,660	$1,583	$1,575	$1,692	$1,669	$1,815	$1,797

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

Industrial Sector

Section 1306 of the CEB expands the current 10-percent business ITC for solar power generation equipment to include combined heat and power (CHP) systems. Qualifying equipment must have electrical capacity of not more than 15 megawatts or mechanical energy no greater than 2,000 horsepower. Qualifying equipment must produce at least 20 percent of its useful output as thermal energy and at least 20 percent as electricity. Such equipment must also have a system efficiency of at least 60 percent. The credit would be effective from 2004 through 2006. The tax

credit creates an incentive to increase CHP capacity, but that incentive is diminished by the relatively small size limit for qualifying facilities and the short timeframe of the credit.

To estimate the impact of the CHP ITC, the initial cost of industrial CHP plants was reduced by 10 percent during the 2004 through 2006 period. The tax credit was factored into the cash flow calculations for commercial CHP plants. The tax credit is projected to increase CHP capacity additions by 98 megawatts, 51 percent higher than additions of 15-megawatt or smaller CHP systems in the Reference Case. However, the total qualifying capacity added from 2004 through 2006 is projected to be 290 megawatts. Consequently, about 66 percent of the tax credits would be given to purchasers of CHP who would have purchased the equipment without the tax credit.

The overall impact of the CEB on the industrial sector is summarized in Table 9. Generally, the CEB reduces energy prices and energy expenditures slightly compared with the Reference Case (0.7 percent less for both). However, the positive impact of the CHP tax credit is offset by slightly lower average energy prices in the later years of the forecast mainly due to the natural gas provisions, resulting in a slight reduction in end-use CHP capacity in 2025 compared with the Reference Case (0.8 percent).

Table 9. Industrial Sector and End-Use CHP Results, *AEO2004* and CEB Case

	2002	2006		2010		2015		2025	
		AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB	AEO 2004	CEB
Delivered Energy Consumption (quadrillion Btu)	24.94	26.15	26.18	27.53	27.57	29.32	29.30	33.35	33.29
Average Energy Price (2002 dollars per million Btu)	6.31	6.36	6.28	6.44	6.42	6.96	6.89	7.42	7.37
Energy Expenditures (billion 2002 dollars)	121.0	126.2	124.7	132.7	132.5	152.5	150.9	185.6	184.3
End-Use CHP (gigawatts)	25.5	28.5	28.6	31.7	31.8	35.8	35.8	45.3	44.9

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

Transportation

Section 1318 provides tax credits for the purchase of lean-burn technology, hybrid, electric, and fuel cell vehicles. The value of the credit is based on vehicle type (hybrid, fuel cell, etc.), vehicle size (gross vehicle weight rating), efficiency improvement compared to a 2002 model year vehicle, and life-time fuel savings. On average, EIA assumes for the CEB Case that a hybrid vehicle will receive a $1,600 tax credit, fuel cell and electric vehicles will receive a $9,000 tax

credit, and lean-burn technology vehicles will receive a $400 tax credit. Tax credits available for hybrid vehicles are limited to 80,000 vehicles per manufacturer.

As a result of the tax credits electric vehicle sales increased by 460 vehicles, from a cumulative total of 60,914 vehicles to 61,374 vehicles, during the period between 2004 and 2012. There are no significant impacts on the sales of hybrid or fuel cell vehicles. This is due primarily to sales requirements for these vehicles mandated under the zero-emission vehicle program, which increases the sales of hybrid, electric, and fuel cell vehicles beyond the market penetration that would be expected without the mandate.

Because the tax credits have no significant impact on the sales of advanced technology, light-duty vehicles, projections of energy use and fuel expenditures show little change between the Reference and CEB Cases (Table 10). Energy use in the CEB Case is slightly lower (0.5 percent by 2025) compared to the Reference Case, but because fuel prices are higher (1.9 percent by 2025) throughout the projection period due to the RFS and MTBE ban, light-duty vehicle fuel expenditures increase by 1.4 percent by 2025.

Table 10. Light-Duty Vehicle Energy Use and Fuel Expenditures, *AEO2004* and CEB Case

		2010		2015		2025	
		AEO		AEO		AEO	
	2002	2004	CEB	2004	CEB	2004	CEB
Gasoline Price (2002 dollars per gallon)	1.381	1.469	1.472	1.468	1.498	1.492	1.521
Energy Use (million barrels per day)	8.51	10.32	10.31	11.31	11.30	13.23	13.17
Fuel Expenditures (billions of 2002 dollars)	178.6	230.3	230.6	252.6	257.0	300.5	304.6

Sources: National Energy Modeling System date codes aeo2004.d101703e and nrgbill00.d011304d.

Appendix A

Request Letter from Senator John Sununu

JOHN E. SUNUNU
New Hampshire

DEPUTY WHIP

BANKING, HOUSING, AND URBAN AFFAIRS

COMMERCE, SCIENCE, AND TRANSPORTATION

FOREIGN RELATIONS

GOVERNMENTAL AFFAIRS

JOINT ECONOMIC COMMITTEE

UNITED STATES SENATE

60 Pleasant Street
Berlin, NH 03570
(603) 752-6074

50 Tremont Square
Claremont, NH 03743
(603) 542-4872

1589 Elm Street, Suite 3
Manchester, NH 03101
(603) 647-7500

One New Hampshire Avenue, Suite 120
Portsmouth, NH 03801
(603) 430-9560

111 Russell Senate Office Building
Washington, DC 20510
(202) 224-2841

February 2, 2004

Mr. Guy F. Caruso
Administrator
Energy Information Administration
U.S. Department of Energy
1000 Independence Ave. SW
Washington, DC 20585

Dear Mr. Caruso:

As a follow-up to my letter of January 29, 2004, I would like to receive additional information on the impacts of the conference report of the Energy Policy Act of 2003.

Please provide a comprehensive analysis and estimates of the impacts of the Energy Policy Act compared to EIA's 2004 annual energy outlook (AEO) reference case released in January 2004. This should include supply estimates (by fuel), demand estimates (by sector), and import estimates (by fuel type) for the provisions of the bill that have impacts.

I would appreciate receiving your estimates by February 9, 2004. Please do not hesitate to call my office if you have questions regarding this request.

With best regards,

John E. Sununu
United States Senator

Appendix B

Comparison of AEO2004 Reference Case and the CEB Case

Table B1. Total Energy Supply and Disposition Summary

(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Production									
Crude Oil and Lease Condensate	11.91	12.56	12.60	11.71	11.69	10.49	10.58	9.77	9.83
Natural Gas Plant Liquids	2.56	3.10	3.14	3.20	3.21	3.47	3.49	3.47	3.51
Dry Natural Gas	19.56	21.05	21.41	22.20	22.23	24.43	24.57	24.64	24.90
Coal	22.70	25.25	24.86	26.14	25.89	27.92	27.64	31.10	30.34
Nuclear Power	8.15	8.29	8.34	8.48	8.91	8.53	9.02	8.53	9.02
Renewable Energy[1]	5.84	7.18	7.85	7.84	8.13	8.45	8.60	9.00	9.06
Other[2]	1.13	0.88	0.88	0.79	0.64	0.81	0.91	0.84	0.95
Total	**71.85**	**78.30**	**79.08**	**80.36**	**80.70**	**84.09**	**84.80**	**87.33**	**87.61**
Imports									
Crude Oil[3]	19.84	24.51	24.47	29.37	29.18	31.55	31.14	34.21	33.90
Petroleum Products[4]	4.75	5.76	5.61	6.00	6.05	7.83	7.81	9.63	9.50
Natural Gas	4.10	6.54	5.98	7.29	7.17	7.56	7.37	8.29	8.21
Other Imports[5]	0.52	0.95	0.95	1.06	1.05	1.12	1.12	1.18	1.18
Total	**29.21**	**37.76**	**37.00**	**43.72**	**43.46**	**48.06**	**47.43**	**53.30**	**52.79**
Exports									
Petroleum[6]	2.03	2.15	2.14	2.18	2.18	2.13	2.12	2.15	2.14
Natural Gas	0.52	0.91	0.92	0.90	0.92	0.93	0.97	0.88	0.93
Coal	1.03	0.89	0.89	0.80	0.80	0.69	0.74	0.56	0.59
Total	**3.58**	**3.95**	**3.95**	**3.88**	**3.89**	**3.75**	**3.83**	**3.59**	**3.65**
Discrepancy[7]	**-0.24**	**0.34**	**0.30**	**0.46**	**0.43**	**0.48**	**0.50**	**0.56**	**0.63**
Consumption									
Petroleum Products[8]	38.11	44.15	44.09	48.26	47.99	51.35	51.12	54.99	54.73
Natural Gas	23.37	26.82	26.61	28.74	28.63	31.21	31.11	32.21	32.34
Coal	22.18	25.23	24.84	26.32	26.07	28.30	27.98	31.73	30.94
Nuclear Power	8.15	8.29	8.34	8.48	8.91	8.53	9.02	8.53	9.02
Renewable Energy[1]	5.84	7.18	7.85	7.84	8.13	8.46	8.60	9.00	9.06
Other[9]	0.07	0.11	0.10	0.11	0.10	0.07	0.07	0.03	0.02
Total	**97.72**	**111.77**	**111.83**	**119.75**	**119.84**	**127.92**	**127.90**	**136.48**	**136.12**
Net Imports - Petroleum	**22.56**	**28.13**	**27.93**	**33.20**	**33.06**	**37.25**	**36.83**	**41.69**	**41.26**
Prices (2002 dollars per unit)									
World Oil Price (dollars per barrel)[10]	23.68	24.17	24.18	25.07	25.14	26.02	26.07	27.00	27.01
Natural Gas Wellhead Price (dollars per thousand cubic feet)[11]	2.95	3.40	3.41	4.19	4.10	4.28	4.16	4.40	4.40
Coal Minemouth Price (dollars per ton)	17.90	16.88	16.87	16.47	16.46	16.32	16.48	16.57	16.42
Average Electricity Price (cents per kilowatthour)	7.2	6.6	6.6	6.8	6.7	6.9	6.8	6.9	6.8

[1]Includes grid-connected electricity from conventional hydroelectric; wood and wood waste; landfill gas; municipal solid waste; other biomass; wind; photovoltaic and solar thermal sources; non-electric energy from renewable sources, such as active and passive solar systems, and wood; and both the ethanol and gasoline components of E85, but not the ethanol components of blends less than 85 percent. Excludes electricity imports using renewable sources and nonmarketed renewable energy. See Table B18 for selected nonmarketed residential and commercial renewable energy.

[2]Includes liquid hydrogen, methanol, supplemental natural gas, and some domestic inputs to refineries.

[3]Includes imports of crude oil for the Strategic Petroleum Reserve.

[4]Includes imports of finished petroleum products, unfinished oils, alcohols, ethers, and blending components.

[5]Includes coal, coal coke (net), and electricity (net).

[6]Includes crude oil and petroleum products.

[7]Balancing item. Includes unaccounted for supply, losses, gains, net storage withdrawals, heat loss when natural gas is converted to liquid fuel, and heat loss when coal is converted to liquid fuel.

[8]Includes natural gas plant liquids, crude oil consumed as a fuel, and nonpetroleum-based liquids for blending, such as ethanol.

[9]Includes net electricity imports, methanol, and liquid hydrogen.

[10]Average refiner acquisition cost for imported crude oil.

[11]Represents lower 48 onshore and offshore supplies.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.

Sources: 2002 natural gas supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2003/06) (Washington, DC, June 2003). 2002 petroleum supply values: EIA, *Petroleum Supply Annual 2002,* DOE/EIA-0340(2002)/1 (Washington, DC, June 2003). Other 2002 values: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002) and EIA, *Quarterly Coal Report, October-December 2002*, DOE/EIA-0121(2002/4Q) (Washington, DC, March 2003). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B2. Energy Consumption by Sector and Source

(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Energy Consumption									
Residential									
Distillate Fuel	0.89	0.93	0.93	0.89	0.89	0.85	0.85	0.80	0.80
Kerosene	0.07	0.11	0.11	0.11	0.11	0.10	0.10	0.09	0.09
Liquefied Petroleum Gas	0.53	0.56	0.56	0.59	0.58	0.61	0.61	0.64	0.64
Petroleum Subtotal	1.48	1.60	1.60	1.59	1.58	1.56	1.56	1.53	1.53
Natural Gas	5.06	5.69	5.69	5.84	5.85	6.08	6.10	6.26	6.26
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Renewable Energy[1]	0.39	0.40	0.40	0.41	0.40	0.41	0.41	0.41	0.40
Electricity	4.33	4.87	4.86	5.22	5.21	5.60	5.59	5.96	5.94
Delivered Energy	**11.28**	**12.58**	**12.56**	**13.06**	**13.06**	**13.66**	**13.67**	**14.17**	**14.15**
Electricity Related Losses	9.60	10.48	10.47	10.92	10.96	11.43	11.44	11.95	11.87
Total	**20.88**	**23.06**	**23.03**	**23.98**	**24.02**	**25.10**	**25.11**	**26.12**	**26.02**
Commercial									
Distillate Fuel	0.49	0.62	0.62	0.65	0.65	0.67	0.67	0.70	0.69
Residual Fuel	0.08	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Kerosene	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Liquefied Petroleum Gas	0.09	0.10	0.10	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
Petroleum Subtotal	0.72	0.92	0.92	0.95	0.95	0.97	0.97	1.00	0.99
Natural Gas	3.21	3.57	3.58	3.72	3.74	3.94	3.96	4.16	4.17
Coal	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Renewable Energy[3]	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Electricity	4.12	5.05	5.05	5.64	5.64	6.24	6.24	6.83	6.83
Delivered Energy	**8.25**	**9.74**	**9.74**	**10.51**	**10.52**	**11.35**	**11.37**	**12.19**	**12.19**
Electricity Related Losses	9.15	10.86	10.88	11.79	11.86	12.73	12.76	13.70	13.66
Total	**17.40**	**20.60**	**20.62**	**22.30**	**22.38**	**24.07**	**24.13**	**25.89**	**25.84**
Industrial[4]									
Distillate Fuel	1.16	1.17	1.17	1.27	1.26	1.34	1.34	1.43	1.43
Liquefied Petroleum Gas	2.22	2.35	2.36	2.53	2.53	2.74	2.74	2.94	2.94
Petrochemical Feedstock	1.22	1.35	1.35	1.43	1.43	1.54	1.54	1.62	1.62
Residual Fuel	0.20	0.21	0.21	0.23	0.22	0.22	0.22	0.23	0.23
Motor Gasoline[2]	0.16	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19
Other Petroleum[5]	4.03	4.38	4.38	4.68	4.61	4.93	4.88	5.17	5.08
Petroleum Subtotal	9.00	9.63	9.63	10.31	10.23	10.95	10.89	11.59	11.48
Natural Gas	7.43	8.62	8.63	9.12	9.18	9.84	9.87	10.58	10.60
Lease and Plant Fuel[6]	1.35	1.40	1.42	1.48	1.48	1.65	1.65	1.69	1.70
Natural Gas Subtotal	8.78	10.02	10.05	10.60	10.66	11.49	11.52	12.27	12.31
Metallurgical Coal	0.62	0.64	0.65	0.58	0.58	0.52	0.52	0.47	0.47
Steam Coal	1.47	1.41	1.41	1.43	1.43	1.45	1.45	1.47	1.47
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Coal Subtotal	2.12	2.06	2.07	2.01	2.01	1.97	1.97	1.95	1.95
Renewable Energy[7]	1.66	2.00	2.00	2.26	2.26	2.48	2.48	2.70	2.70
Electricity	3.39	3.82	3.83	4.15	4.15	4.47	4.47	4.85	4.85
Delivered Energy	**24.94**	**27.53**	**27.57**	**29.32**	**29.30**	**31.36**	**31.34**	**33.35**	**33.29**
Electricity Related Losses	7.53	8.22	8.24	8.67	8.73	9.12	9.14	9.72	9.70
Total	**32.47**	**35.75**	**35.81**	**37.99**	**38.03**	**40.48**	**40.48**	**43.07**	**42.99**

Table B2. Energy Consumption by Sector and Source (Continued)

(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Transportation									
Distillate Fuel[8]	5.12	6.42	6.42	7.25	7.26	8.02	8.03	8.94	8.95
Jet Fuel[9]	3.34	3.93	3.93	4.36	4.36	4.69	4.69	4.91	4.92
Motor Gasoline[2]	16.62	19.88	19.87	21.62	21.55	23.11	23.01	24.98	24.82
Residual Fuel	0.71	0.79	0.79	0.80	0.80	0.82	0.82	0.83	0.83
Liquefied Petroleum Gas	0.02	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09
Other Petroleum[10]	0.24	0.25	0.26	0.27	0.27	0.30	0.30	0.32	0.32
Petroleum Subtotal	26.06	31.34	31.33	34.37	34.31	37.00	36.91	40.07	39.93
Pipeline Fuel Natural Gas	0.65	0.69	0.70	0.72	0.71	0.83	0.83	0.86	0.86
Compressed Natural Gas	0.01	0.06	0.06	0.08	0.08	0.10	0.10	0.11	0.11
Renewable Energy (E85)[11]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12
Delivered Energy	**26.79**	**32.18**	**32.18**	**35.28**	**35.21**	**38.05**	**37.95**	**41.16**	**41.03**
Electricity Related Losses	0.17	0.19	0.19	0.21	0.21	0.22	0.22	0.24	0.24
Total	**26.96**	**32.37**	**32.37**	**35.48**	**35.42**	**38.27**	**38.18**	**41.40**	**41.27**
Delivered Energy Consumption for All Sectors									
Distillate Fuel	7.66	9.15	9.15	10.07	10.06	10.88	10.88	11.88	11.88
Kerosene	0.09	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13
Jet Fuel[9]	3.34	3.93	3.93	4.36	4.36	4.69	4.69	4.91	4.92
Liquefied Petroleum Gas	2.86	3.07	3.07	3.28	3.28	3.53	3.53	3.76	3.76
Motor Gasoline[2]	16.83	20.09	20.08	21.84	21.77	23.34	23.24	25.22	25.06
Petrochemical Feedstock	1.22	1.35	1.35	1.43	1.43	1.54	1.54	1.62	1.62
Residual Fuel	1.00	1.13	1.13	1.16	1.15	1.17	1.17	1.19	1.18
Other Petroleum[12]	4.26	4.61	4.61	4.93	4.86	5.21	5.15	5.46	5.37
Petroleum Subtotal	37.26	43.48	43.47	47.22	47.07	50.50	50.33	54.18	53.94
Natural Gas	15.71	17.94	17.97	18.76	18.85	19.95	20.03	21.11	21.14
Lease and Plant Fuel Plant[6]	1.35	1.40	1.42	1.48	1.48	1.65	1.65	1.69	1.70
Pipeline Natural Gas	0.65	0.69	0.70	0.72	0.71	0.83	0.83	0.86	0.86
Natural Gas Subtotal	17.72	20.03	20.08	20.96	21.04	22.43	22.51	23.66	23.70
Metallurgical Coal	0.62	0.64	0.65	0.58	0.58	0.52	0.52	0.47	0.47
Steam Coal	1.58	1.52	1.52	1.54	1.54	1.56	1.56	1.58	1.58
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Coal Subtotal	2.23	2.17	2.18	2.12	2.12	2.08	2.08	2.06	2.06
Renewable Energy[13]	2.15	2.50	2.50	2.76	2.76	2.99	2.99	3.21	3.21
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	11.92	13.83	13.82	15.11	15.09	16.41	16.41	17.77	17.73
Delivered Energy	**71.27**	**82.03**	**82.05**	**88.17**	**88.09**	**94.42**	**94.34**	**100.87**	**100.64**
Electricity Related Losses	26.45	29.75	29.78	31.57	31.75	33.50	33.56	35.61	35.47
Total	**97.72**	**111.77**	**111.83**	**119.75**	**119.84**	**127.92**	**127.90**	**136.48**	**136.12**
Electric Power[14]									
Distillate Fuel	0.16	0.16	0.14	0.44	0.34	0.26	0.25	0.27	0.24
Residual Fuel	0.69	0.51	0.48	0.60	0.58	0.59	0.54	0.54	0.55
Petroleum Subtotal	0.85	0.66	0.61	1.04	0.93	0.85	0.79	0.81	0.79
Natural Gas	5.65	6.79	6.53	7.78	7.59	8.78	8.59	8.55	8.63
Steam Coal	19.96	23.05	22.66	24.20	23.94	26.22	25.90	29.67	28.88
Nuclear Power	8.15	8.29	8.34	8.48	8.91	8.53	9.02	8.53	9.02
Renewable Energy[15]	3.69	4.68	5.35	5.08	5.37	5.47	5.61	5.79	5.85
Electricity Imports	0.07	0.11	0.10	0.11	0.10	0.07	0.07	0.03	0.02
Total	**38.36**	**43.58**	**43.60**	**46.68**	**46.85**	**49.92**	**49.97**	**53.37**	**53.20**

Table B2. Energy Consumption by Sector and Source (Continued)

(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Total Energy Consumption									
Distillate Fuel	7.82	9.31	9.28	10.51	10.41	11.14	11.13	12.15	12.12
Kerosene	0.09	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13
Jet Fuel[9]	3.34	3.93	3.93	4.36	4.36	4.69	4.69	4.91	4.92
Liquefied Petroleum Gas	2.86	3.07	3.07	3.28	3.28	3.53	3.53	3.76	3.76
Motor Gasoline[2]	16.83	20.09	20.08	21.84	21.77	23.34	23.24	25.22	25.06
Petrochemical Feedstock	1.22	1.35	1.35	1.43	1.43	1.54	1.54	1.62	1.62
Residual Fuel	1.69	1.64	1.61	1.76	1.73	1.76	1.71	1.72	1.73
Other Petroleum[12]	4.26	4.61	4.61	4.93	4.86	5.21	5.15	5.46	5.37
Petroleum Subtotal	38.11	44.15	44.09	48.26	47.99	51.35	51.12	54.99	54.73
Natural Gas	21.36	24.73	24.50	26.54	26.44	28.73	28.63	29.66	29.78
Lease and Plant Fuel[6]	1.35	1.40	1.42	1.48	1.48	1.65	1.65	1.69	1.70
Pipeline Natural Gas	0.65	0.69	0.70	0.72	0.71	0.83	0.83	0.86	0.86
Natural Gas Subtotal	23.37	26.82	26.61	28.74	28.63	31.21	31.11	32.21	32.34
Metallurgical Coal	0.62	0.64	0.65	0.58	0.58	0.52	0.52	0.47	0.47
Steam Coal	21.54	24.57	24.18	25.74	25.48	27.78	27.45	31.25	30.46
Net Coal Coke Imports	0.03	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
Coal Subtotal	22.18	25.23	24.84	26.32	26.07	28.30	27.98	31.73	30.94
Nuclear Power	8.15	8.29	8.34	8.48	8.91	8.53	9.02	8.53	9.02
Renewable Energy[16]	5.84	7.18	7.85	7.84	8.13	8.46	8.60	9.00	9.06
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Imports	0.07	0.11	0.10	0.11	0.10	0.07	0.07	0.03	0.02
Total	**97.72**	**111.77**	**111.83**	**119.75**	**119.84**	**127.92**	**127.90**	**136.48**	**136.12**
Energy Use and Related Statistics									
Delivered Energy Use	71.27	82.03	82.05	88.17	88.09	94.42	94.34	100.87	100.64
Total Energy Use	97.72	111.77	111.83	119.75	119.84	127.92	127.90	136.48	136.12
Population (millions)	288.93	309.28	309.28	321.95	321.95	334.61	334.61	347.53	347.53
Gross Domestic Product (billion 1996 dollars)	9440	12190	12194	14101	14101	16188	16192	18520	18516
Carbon Dioxide Emissions (million metric tons)	5729.4	6558.8	6501.2	7028.4	6969.2	7535.6	7473.5	8142.0	8045.9

[1]Includes wood used for residential heating. See Table B18 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]Includes commercial sector consumption of wood and wood waste, landfill gas, municipal solid waste, and other biomass for combined heat and power. See Table B18 for estimates of nonmarketed renewable energy consumption for solar thermal hot water heating and solar photovoltaic electricity generation.

[4]Fuel consumption includes consumption for combined heat and power, which produces electricity, both for sale to the grid and for own use, and other useful thermal energy.

[5]Includes petroleum coke, asphalt, road oil, lubricants, still gas, and miscellaneous petroleum products.

[6]Represents natural gas used in the field gathering and processing plant machinery.

[7]Includes consumption of energy from hydroelectric, wood and wood waste, municipal solid waste, and other biomass.

[8]Diesel fuel containing 500 parts per million (ppm) or 15 ppm sulfur.

[9]Includes only kerosene type.

[10]Includes aviation gasoline and lubricants.

[11]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 actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

[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 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, municipal solid waste, other biomass, petroleum coke, wind, photovoltaic and solar thermal sources. Excludes net electricity imports.

[16]Includes hydroelectric, geothermal, wood and wood waste, municipal solid waste, other biomass, wind, photovoltaic and solar thermal sources. Includes ethanol components of E85; excludes ethanol blends (10 percent or less) in motor gasoline. Excludes 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 2002 are model results and may differ slightly from official EIA data reports. Consumption values of 0.00 are values that round to 0.00, because they are less than 0.005.

Sources: 2002 consumption based on: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). 2002 population and gross domestic product: Global Insight macroeconomic model T250803. 2002 carbon dioxide emissions: EIA, *Emissions of Greenhouse Gases in the United States 2002,* DOE/EIA-0573(2002) (Washington, DC, October 2003). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B3. Energy Prices by Sector and Source

(2002 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Residential	**14.73**	**14.21**	**14.16**	**14.93**	**14.75**	**15.08**	**14.91**	**15.38**	**15.28**
Primary Energy[1]	8.14	8.15	8.14	8.72	8.65	8.76	8.68	8.89	8.88
Petroleum Products[2]	9.87	9.90	9.91	10.38	10.40	10.86	10.88	11.26	11.26
Distillate Fuel	8.23	7.82	7.84	8.06	8.08	8.39	8.39	8.53	8.53
Liquefied Petroleum Gas	12.92	13.89	13.88	14.46	14.51	14.79	14.84	15.19	15.18
Natural Gas	7.65	7.67	7.66	8.29	8.19	8.24	8.14	8.32	8.32
Electricity	24.73	23.30	23.19	23.77	23.45	23.73	23.45	23.88	23.68
Commercial	**14.68**	**13.77**	**13.69**	**14.62**	**14.40**	**14.93**	**14.71**	**15.28**	**15.14**
Primary Energy[1]	6.35	6.48	6.47	7.04	6.98	7.11	7.03	7.22	7.22
Petroleum Products[2]	6.88	6.34	6.35	6.53	6.56	6.83	6.86	6.98	6.99
Distillate Fuel	6.07	5.45	5.46	5.66	5.66	6.01	6.01	6.15	6.14
Residual Fuel	4.21	4.13	4.13	4.27	4.28	4.41	4.41	4.55	4.55
Natural Gas	6.37	6.64	6.63	7.32	7.22	7.31	7.21	7.41	7.40
Electricity	22.82	20.39	20.26	21.02	20.70	21.21	20.90	21.48	21.24
Industrial[3]	**6.31**	**6.44**	**6.42**	**6.96**	**6.89**	**7.21**	**7.14**	**7.42**	**7.37**
Primary Energy	4.77	5.14	5.14	5.64	5.59	5.88	5.83	6.07	6.04
Petroleum Products[2]	6.35	6.84	6.84	7.15	7.16	7.54	7.57	7.81	7.76
Distillate Fuel	6.21	5.68	5.68	5.85	5.85	6.24	6.25	6.40	6.38
Liquefied Petroleum Gas	8.28	9.72	9.72	10.29	10.36	10.66	10.68	11.11	11.03
Residual Fuel	3.89	3.74	3.74	3.88	3.90	4.03	4.03	4.17	4.18
Natural Gas[4]	3.75	4.05	4.05	4.81	4.71	4.89	4.76	4.99	4.99
Metallurgical Coal	1.87	1.96	1.95	1.90	1.90	1.84	1.84	1.77	1.76
Steam Coal	1.52	1.58	1.57	1.55	1.55	1.53	1.54	1.53	1.51
Electricity	14.74	13.36	13.26	13.81	13.58	13.99	13.77	14.09	13.94
Transportation	**9.91**	**10.50**	**10.51**	**10.53**	**10.69**	**10.54**	**10.66**	**10.69**	**10.84**
Primary Energy	9.88	10.48	10.49	10.50	10.66	10.52	10.64	10.67	10.82
Petroleum Products[2]	9.88	10.48	10.49	10.50	10.66	10.52	10.64	10.67	10.82
Distillate Fuel[5]	9.41	10.12	10.12	10.16	10.19	10.00	9.99	10.03	10.06
Jet Fuel[6]	5.97	5.76	5.77	5.85	5.86	6.06	6.04	6.21	6.18
Motor Gasoline[7]	11.15	11.87	11.89	11.87	12.12	11.90	12.11	12.06	12.30
Residual Fuel	3.77	3.60	3.60	3.73	3.74	3.88	3.88	4.02	4.02
Liquefied Petroleum Gas[8]	15.00	14.96	14.95	15.39	15.42	15.51	15.58	15.83	15.81
Natural Gas[9]	7.38	8.26	8.25	9.07	8.98	9.06	8.95	9.09	9.08
Ethanol (E85)[10]	15.19	17.22	17.61	17.79	21.22	18.28	21.04	18.58	22.06
Electricity	21.10	19.57	19.46	20.25	19.96	20.03	19.79	19.92	19.74
Average End-Use Energy	**10.10**	**10.23**	**10.21**	**10.61**	**10.60**	**10.76**	**10.73**	**10.96**	**10.97**
Primary Energy	7.70	8.22	8.22	8.53	8.59	8.64	8.67	8.82	8.89
Electricity	21.20	19.47	19.35	19.99	19.69	20.10	19.82	20.26	20.05
Electric Power[11]									
Fossil Fuel Average	1.89	1.92	1.89	2.16	2.11	2.18	2.13	2.11	2.12
Petroleum Products	4.32	4.21	4.20	4.54	4.49	4.67	4.68	4.88	4.83
Distillate Fuel	5.58	4.92	4.90	5.09	5.07	5.47	5.47	5.62	5.60
Residual Fuel	4.04	3.99	3.99	4.14	4.14	4.31	4.33	4.50	4.49
Natural Gas	3.77	4.04	4.02	4.78	4.69	4.85	4.72	4.92	4.93
Steam Coal	1.26	1.22	1.22	1.22	1.21	1.20	1.20	1.22	1.21

Table B3. Energy Prices by Sector and Source (Continued)

(2002 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Average Price to All Users[12]									
Petroleum Products[2]	8.94	9.57	9.58	9.65	9.79	9.81	9.91	10.01	10.11
Distillate Fuel	8.52	8.93	8.94	8.97	9.03	9.07	9.08	9.18	9.21
Jet Fuel	5.97	5.76	5.77	5.85	5.86	6.06	6.04	6.21	6.18
Liquefied Petroleum Gas	9.27	10.65	10.65	11.21	11.27	11.55	11.58	11.96	11.90
Motor Gasoline[7]	11.15	11.87	11.89	11.87	12.12	11.90	12.11	12.06	12.30
Residual Fuel	3.92	3.78	3.78	3.93	3.94	4.08	4.08	4.23	4.23
Natural Gas	5.07	5.27	5.27	5.93	5.84	5.93	5.82	6.03	6.02
Coal	1.28	1.25	1.24	1.24	1.23	1.22	1.22	1.24	1.22
Ethanol (E85)[10]	15.19	17.22	17.61	17.79	21.22	18.28	21.04	18.58	22.06
Electricity	21.20	19.47	19.35	19.99	19.69	20.10	19.82	20.26	20.05
Non-Renewable Energy Expenditures by Sector (billion 2002 dollars)									
Residential	160.37	173.01	172.14	189.01	186.60	199.98	197.76	211.69	209.92
Commercial	119.67	132.72	132.04	152.16	150.07	167.90	165.78	184.74	182.99
Industrial	120.96	132.71	132.52	152.53	150.91	169.02	167.19	185.61	184.28
Transportation	259.11	330.65	330.94	363.66	368.63	392.36	395.79	430.99	435.42
Total Non-Renewable Expenditures	660.11	769.08	767.64	857.37	856.22	929.26	926.52	1013.03	1012.60
Transportation Renewable Expenditures	0.01	0.03	0.03	0.05	0.04	0.06	0.05	0.07	0.07
Total Expenditures	**660.12**	**769.11**	**767.67**	**857.41**	**856.26**	**929.32**	**926.58**	**1013.10**	**1012.67**

[1]Weighted average price includes fuels below as well as coal.
[2]This quantity is the weighted average for all petroleum products, not just those listed below.
[3]Includes combined heat and power, which produces electricity and other useful thermal energy.
[4]Excludes use for lease and plant fuel.
[5]Diesel fuel containing 500 parts per million (ppm) or 15 ppm sulfur. Price includes Federal and State taxes while excluding county and local taxes.
[6]Kerosene-type jet fuel. Price includes Federal and State taxes while excluding county and local taxes.
[7]Sales weighted-average price for all grades. Includes Federal, State and local taxes.
[8]Includes Federal and State taxes while excluding county and local taxes.
[9]Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes.
[10]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 actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.
[11]Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.
[12]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.
Note: Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 prices for motor gasoline, distillate, and jet fuel are based on: Energy Information Administration (EIA), *Petroleum Marketing Annual 2002*, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_marketing_annual/current/pdf/pmaall.pdf (August 2003). 2002 residential, commercial, and transportation natural gas delivered prices: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2003/06) (Washington, DC, June 2003). 2002 electric power sector natural gas prices: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2002 industrial natural gas delivered prices based on: EIA, *Manufacturing Energy Consumption Survey 1998*. 2002 coal prices based on EIA, *Quarterly Coal Report, October-December 2002*, DOE/EIA-0121(2002/4Q) (Washington, DC, March 2003) and EIA, AEO2004 National Energy Modeling System run AEO2004.D101703E. 2002 electricity prices: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). 2002 ethanol prices derived from weekly spot prices in the Oxy Fuel News. **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B4. Residential Sector Key Indicators and End-Use Consumption

(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Key Indicators									
Households (millions)									
Single-Family	74.77	82.87	82.88	87.68	87.68	92.09	92.09	96.32	96.31
Multifamily	29.20	30.71	30.72	31.84	31.84	33.07	33.08	34.36	34.36
Mobile Homes	6.31	6.25	6.25	6.60	6.60	6.88	6.88	7.12	7.12
Total	**110.28**	**119.84**	**119.85**	**126.12**	**126.12**	**132.04**	**132.05**	**137.79**	**137.78**
Average House Square Footage	**1689**	**1731**	**1731**	**1752**	**1752**	**1771**	**1771**	**1788**	**1788**
Energy Intensity									
(million Btu per household)									
Delivered Energy Consumption	102.3	105.0	104.8	103.6	103.5	103.5	103.5	102.8	102.7
Total Energy Consumption	189.4	192.4	192.2	190.1	190.5	190.1	190.1	189.5	188.8
(thousand Btu per square foot)									
Delivered Energy Consumption	60.6	60.6	60.6	59.1	59.1	58.4	58.5	57.5	57.4
Total Energy Consumption	112.1	111.1	111.0	108.5	108.7	107.3	107.4	106.0	105.6
Delivered Energy Consumption by Fuel									
Electricity									
Space Heating	0.40	0.43	0.43	0.44	0.44	0.45	0.45	0.46	0.46
Space Cooling	0.71	0.69	0.69	0.72	0.72	0.76	0.77	0.80	0.80
Water Heating	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.35	0.35
Refrigeration	0.42	0.37	0.37	0.36	0.36	0.36	0.36	0.37	0.37
Cooking	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13
Clothes Dryers	0.24	0.25	0.25	0.26	0.26	0.26	0.27	0.27	0.28
Freezers	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Lighting	0.75	0.87	0.85	0.92	0.90	0.97	0.95	1.02	0.99
Clothes Washers[1]	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06
Dishwashers[1]	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Color Televisions	0.12	0.18	0.18	0.22	0.22	0.26	0.26	0.27	0.27
Personal Computers	0.06	0.08	0.08	0.10	0.10	0.11	0.11	0.14	0.14
Furnace Fans	0.08	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11
Other Uses[2]	0.88	1.25	1.25	1.44	1.44	1.63	1.63	1.83	1.83
Delivered Energy	**4.33**	**4.87**	**4.86**	**5.22**	**5.21**	**5.60**	**5.59**	**5.96**	**5.94**
Natural Gas									
Space Heating	3.54	4.01	4.01	4.13	4.14	4.33	4.34	4.48	4.48
Space Cooling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Heating	1.15	1.25	1.25	1.25	1.25	1.27	1.28	1.28	1.28
Cooking	0.21	0.23	0.23	0.24	0.24	0.26	0.26	0.27	0.27
Clothes Dryers	0.07	0.09	0.09	0.10	0.10	0.11	0.11	0.11	0.11
Other Uses[3]	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12
Delivered Energy	**5.06**	**5.69**	**5.69**	**5.84**	**5.85**	**6.08**	**6.10**	**6.26**	**6.26**
Distillate									
Space Heating	0.77	0.81	0.81	0.78	0.78	0.75	0.75	0.71	0.71
Water Heating	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.09
Other Uses[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Delivered Energy	**0.89**	**0.93**	**0.93**	**0.89**	**0.89**	**0.85**	**0.85**	**0.80**	**0.80**
Liquefied Petroleum Gas									
Space Heating	0.30	0.30	0.30	0.31	0.30	0.31	0.31	0.31	0.31
Water Heating	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Cooking	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Other Uses[3]	0.15	0.18	0.18	0.20	0.20	0.23	0.23	0.25	0.25
Delivered Energy	**0.53**	**0.56**	**0.56**	**0.59**	**0.58**	**0.61**	**0.61**	**0.64**	**0.64**
Marketed Renewables (wood)[5]	0.39	0.40	0.40	0.41	0.40	0.41	0.41	0.41	0.40
Other Fuels[6]	0.08	0.12	0.12	0.12	0.12	0.11	0.11	0.10	0.10

Table B4. Residential Sector Key Indicators and End-Use Consumption (Continued)

(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Delivered Energy Consumption by End-Use									
Space Heating	5.48	6.08	6.07	6.18	6.19	6.35	6.37	6.46	6.46
Space Cooling	0.71	0.69	0.69	0.72	0.72	0.76	0.77	0.80	0.80
Water Heating	1.69	1.79	1.79	1.78	1.78	1.78	1.79	1.77	1.77
Refrigeration	0.42	0.37	0.37	0.36	0.36	0.36	0.36	0.37	0.37
Cooking	0.34	0.37	0.37	0.39	0.39	0.41	0.41	0.42	0.42
Clothes Dryers	0.31	0.34	0.34	0.35	0.36	0.37	0.37	0.39	0.39
Freezers	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Lighting	0.75	0.87	0.85	0.92	0.90	0.97	0.95	1.02	0.99
Clothes Washers	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.06	0.06
Dishwashers	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Color Televisions	0.12	0.18	0.18	0.22	0.22	0.26	0.26	0.27	0.27
Personal Computers	0.06	0.08	0.08	0.10	0.10	0.11	0.11	0.14	0.14
Furnace Fans	0.08	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11
Other Uses[7]	1.13	1.54	1.54	1.75	1.76	1.97	1.98	2.20	2.20
Delivered Energy	**11.28**	**12.58**	**12.56**	**13.06**	**13.06**	**13.66**	**13.67**	**14.17**	**14.15**
Electricity Related Losses	**9.60**	**10.48**	**10.47**	**10.92**	**10.96**	**11.43**	**11.44**	**11.95**	**11.87**
Total Energy Consumption by End-Use									
Space Heating	6.36	6.99	6.99	7.10	7.11	7.27	7.29	7.37	7.37
Space Cooling	2.29	2.19	2.19	2.23	2.25	2.32	2.33	2.41	2.40
Water Heating	2.51	2.58	2.59	2.54	2.56	2.52	2.53	2.46	2.46
Refrigeration	1.37	1.16	1.16	1.10	1.11	1.09	1.09	1.11	1.11
Cooking	0.57	0.61	0.61	0.63	0.63	0.66	0.66	0.68	0.68
Clothes Dryers	0.83	0.89	0.89	0.89	0.90	0.91	0.91	0.94	0.94
Freezers	0.43	0.37	0.37	0.36	0.36	0.36	0.36	0.37	0.37
Lighting	2.41	2.73	2.68	2.84	2.78	2.95	2.89	3.07	2.98
Clothes Washers	0.10	0.12	0.12	0.15	0.15	0.18	0.18	0.19	0.19
Dishwashers	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
Color Televisions	0.40	0.58	0.58	0.68	0.69	0.78	0.79	0.82	0.82
Personal Computers	0.21	0.25	0.25	0.30	0.30	0.35	0.35	0.41	0.41
Furnace Fans	0.25	0.28	0.28	0.30	0.30	0.32	0.32	0.33	0.33
Other Uses[7]	3.09	4.22	4.23	4.76	4.79	5.29	5.32	5.87	5.86
Total	**20.88**	**23.06**	**23.03**	**23.98**	**24.02**	**25.10**	**25.11**	**26.12**	**26.02**
Non-Marketed Renewables									
Geothermal[8]	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Solar[9]	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
Total	**0.02**	**0.03**	**0.03**	**0.04**	**0.04**	**0.04**	**0.04**	**0.05**	**0.05**

[1]Does not include electric water heating portion of load.
[2]Includes small electric devices, heating elements, and motors.
[3]Includes such appliances as swimming pool heaters, outdoor grills, and outdoor lighting (natural gas).
[4]Includes such appliances as swimming pool and hot tub heaters.
[5]Includes wood used for primary and secondary heating in wood stoves or fireplaces as reported in the *Residential Energy Consumption Survey 2001*.
[6]Includes kerosene and coal.
[7]Includes all other uses listed above.
[8]Includes primary energy displaced by geothermal heat pumps in space heating and cooling applications.
[9]Includes primary energy displaced by solar thermal water heaters and electricity generated using photovoltaics.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 based on: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B5. Commercial Sector Key Indicators and Consumption

(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Key Indicators									
Total Floorspace (billion square feet)									
Surviving	68.9	81.1	81.1	87.3	87.3	93.1	93.1	98.8	98.9
New Additions	3.2	2.7	2.7	2.6	2.6	2.8	2.8	3.0	3.0
Total	**72.1**	**83.8**	**83.8**	**89.9**	**89.9**	**95.9**	**95.9**	**101.8**	**101.8**
Energy Consumption Intensity (thousand Btu per square foot)									
Delivered Energy Consumption	114.5	116.2	116.2	116.9	117.0	118.3	118.5	119.7	119.7
Electricity Related Losses	126.9	129.6	129.8	131.0	131.8	132.7	133.1	134.6	134.1
Total Energy Consumption	241.4	245.8	246.0	247.9	248.8	251.0	251.6	254.3	253.8
Delivered Energy Consumption by Fuel									
Purchased Electricity									
Space Heating[1]	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Space Cooling[1]	0.46	0.45	0.45	0.46	0.46	0.48	0.48	0.49	0.49
Water Heating[1]	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Ventilation	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19
Cooking	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Lighting	1.12	1.30	1.31	1.36	1.37	1.40	1.41	1.43	1.44
Refrigeration	0.20	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25
Office Equipment (PC)	0.14	0.24	0.24	0.29	0.29	0.34	0.34	0.37	0.37
Office Equipment (non-PC)	0.31	0.46	0.46	0.58	0.58	0.71	0.71	0.87	0.87
Other Uses[2]	1.41	1.86	1.85	2.21	2.19	2.55	2.54	2.91	2.89
Delivered Energy	**4.12**	**5.05**	**5.05**	**5.64**	**5.64**	**6.24**	**6.24**	**6.83**	**6.83**
Natural Gas									
Space Heating[1]	1.42	1.56	1.57	1.58	1.59	1.64	1.65	1.69	1.70
Space Cooling[1]	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
Water Heating[1]	0.59	0.70	0.70	0.74	0.74	0.79	0.80	0.84	0.84
Cooking	0.26	0.30	0.31	0.32	0.32	0.34	0.35	0.36	0.36
Other Uses[3]	0.93	0.99	0.99	1.06	1.07	1.14	1.14	1.24	1.24
Delivered Energy	**3.21**	**3.57**	**3.58**	**3.72**	**3.74**	**3.94**	**3.96**	**4.16**	**4.17**
Distillate									
Space Heating[1]	0.17	0.24	0.24	0.27	0.27	0.29	0.29	0.31	0.31
Water Heating[1]	0.07	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09
Other Uses[4]	0.24	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29
Delivered Energy	**0.49**	**0.62**	**0.62**	**0.65**	**0.65**	**0.67**	**0.67**	**0.70**	**0.69**
Other Fuels[5]	**0.33**	**0.39**	**0.39**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**	**0.40**
Marketed Renewable Fuels									
Biomass	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Delivered Energy	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**
Delivered Energy Consumption by End-Use									
Space Heating[1]	1.74	1.97	1.97	2.01	2.02	2.09	2.10	2.16	2.16
Space Cooling[1]	0.48	0.47	0.47	0.48	0.49	0.50	0.51	0.52	0.52
Water Heating[1]	0.80	0.93	0.93	0.97	0.98	1.03	1.03	1.08	1.08
Ventilation	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19
Cooking	0.29	0.34	0.34	0.35	0.35	0.37	0.37	0.39	0.39
Lighting	1.12	1.30	1.31	1.36	1.37	1.40	1.41	1.43	1.44
Refrigeration	0.20	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25
Office Equipment (PC)	0.14	0.24	0.24	0.29	0.29	0.34	0.34	0.37	0.37
Office Equipment (non-PC)	0.31	0.46	0.46	0.58	0.58	0.71	0.71	0.87	0.87
Other Uses[6]	3.01	3.63	3.63	4.06	4.05	4.48	4.47	4.94	4.92
Delivered Energy	**8.25**	**9.74**	**9.74**	**10.51**	**10.52**	**11.35**	**11.37**	**12.19**	**12.19**

Table B5. Commercial Sector Key Indicators and Consumption (Continued)

(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Electricity Related Losses	**9.15**	**10.86**	**10.88**	**11.79**	**11.86**	**12.73**	**12.76**	**13.70**	**13.66**
Total Energy Consumption by End-Use									
Space Heating[1]	2.07	2.31	2.31	2.34	2.35	2.41	2.42	2.47	2.48
Space Cooling[1]	1.51	1.43	1.44	1.45	1.46	1.48	1.49	1.50	1.50
Water Heating[1]	1.11	1.25	1.25	1.28	1.29	1.33	1.34	1.37	1.37
Ventilation	0.52	0.56	0.56	0.55	0.56	0.56	0.56	0.57	0.57
Cooking	0.36	0.40	0.40	0.41	0.41	0.43	0.43	0.44	0.44
Lighting	3.60	4.10	4.12	4.20	4.24	4.25	4.30	4.30	4.32
Refrigeration	0.65	0.70	0.70	0.71	0.72	0.73	0.74	0.75	0.75
Office Equipment (PC)	0.44	0.76	0.76	0.89	0.90	1.03	1.03	1.10	1.10
Office Equipment (non-PC)	1.00	1.46	1.46	1.79	1.80	2.16	2.16	2.61	2.61
Other Uses[6]	6.14	7.63	7.61	8.67	8.66	9.69	9.66	10.77	10.71
Total	**17.40**	**20.60**	**20.62**	**22.30**	**22.38**	**24.07**	**24.13**	**25.89**	**25.84**
Non-Marketed Renewable Fuels									
Solar[7]	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Total	**0.02**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**

[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 electric generators, combined heat and power in commercial buildings, and manufacturing performed in commercial buildings.
[4]Includes miscellaneous uses, such as cooking, emergency electric generators, and combined heat and power in commercial buildings.
[5]Includes residual fuel oil, liquefied petroleum gas, coal, motor gasoline, and kerosene.
[6]Includes miscellaneous uses, such as service station equipment, automated teller machines, telecommunications equipment, medical equipment, pumps, emergency electric generators, combined heat and power in commercial buildings, manufacturing performed in commercial buildings, and cooking (distillate), plus residual fuel oil, liquefied petroleum gas, coal, motor gasoline, and kerosene.
[7]Includes primary 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 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 based on: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B6. Industrial Sector Key Indicators and Consumption

(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Key Indicators									
Value of Shipments (billion 1996 dollars)									
Manufacturing	4064	5013	5015	5760	5758	6634	6632	7636	7631
Nonmanufacturing	1222	1425	1427	1585	1584	1710	1711	1855	1852
Total	**5285**	**6439**	**6442**	**7345**	**7342**	**8344**	**8343**	**9491**	**9483**
Energy Prices (2002 dollars per million Btu)									
Distillate Oil	6.21	5.68	5.68	5.85	5.85	6.24	6.25	6.40	6.38
Liquefied Petroleum Gas	8.28	9.72	9.72	10.29	10.36	10.66	10.68	11.11	11.03
Residual Oil	3.89	3.74	3.74	3.88	3.90	4.03	4.03	4.17	4.18
Motor Gasoline	11.04	11.84	11.87	11.84	12.08	11.87	12.07	12.03	12.27
Natural Gas	3.75	4.05	4.05	4.81	4.71	4.89	4.76	4.99	4.99
Metallurgical Coal	1.87	1.96	1.95	1.90	1.90	1.84	1.84	1.77	1.76
Steam Coal	1.52	1.58	1.57	1.55	1.55	1.53	1.54	1.53	1.51
Electricity	14.74	13.36	13.26	13.81	13.58	13.99	13.77	14.09	13.94
Energy Consumption[1]									
Distillate	1.16	1.17	1.17	1.27	1.26	1.34	1.34	1.43	1.43
Liquefied Petroleum Gas	2.22	2.35	2.36	2.53	2.53	2.74	2.74	2.94	2.94
Petrochemical Feedstocks	1.22	1.35	1.35	1.43	1.43	1.54	1.54	1.62	1.62
Residual Fuel	0.20	0.21	0.21	0.23	0.22	0.22	0.22	0.23	0.23
Other Petroleum[2]	4.19	4.54	4.54	4.85	4.79	5.12	5.06	5.36	5.27
Petroleum Subtotal	9.00	9.63	9.63	10.31	10.23	10.95	10.89	11.59	11.48
Natural Gas	7.43	8.62	8.63	9.12	9.18	9.84	9.87	10.58	10.60
Lease and Plant Fuel[3]	1.35	1.40	1.42	1.48	1.48	1.65	1.65	1.69	1.70
Natural Gas Subtotal	8.78	10.02	10.05	10.60	10.66	11.49	11.52	12.27	12.31
Metallurgical Coal and Coke[4]	0.65	0.66	0.66	0.59	0.59	0.52	0.53	0.48	0.48
Steam Coal	1.47	1.41	1.41	1.43	1.43	1.45	1.45	1.47	1.47
Coal Subtotal	2.12	2.06	2.07	2.01	2.01	1.97	1.97	1.95	1.95
Renewables[5]	1.66	2.00	2.00	2.26	2.26	2.48	2.48	2.70	2.70
Purchased Electricity	3.39	3.82	3.83	4.15	4.15	4.47	4.47	4.85	4.85
Delivered Energy	**24.94**	**27.53**	**27.57**	**29.32**	**29.30**	**31.36**	**31.34**	**33.35**	**33.29**
Electricity Related Losses	7.53	8.22	8.24	8.67	8.73	9.12	9.14	9.72	9.70
Total	**32.47**	**35.75**	**35.81**	**37.99**	**38.03**	**40.48**	**40.48**	**43.07**	**42.99**
Energy Consumption per dollar of Shipments[1] **(thousand Btu per 1996 dollars)**									
Distillate	0.22	0.18	0.18	0.17	0.17	0.16	0.16	0.15	0.15
Liquefied Petroleum Gas	0.42	0.37	0.37	0.34	0.34	0.33	0.33	0.31	0.31
Petrochemical Feedstocks	0.23	0.21	0.21	0.19	0.20	0.18	0.18	0.17	0.17
Residual Fuel	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.02
Other Petroleum[2]	0.79	0.71	0.70	0.66	0.65	0.61	0.61	0.56	0.56
Petroleum Subtotal	1.70	1.50	1.49	1.40	1.39	1.31	1.31	1.22	1.21
Natural Gas	1.41	1.34	1.34	1.24	1.25	1.18	1.18	1.11	1.12
Lease and Plant Fuel[3]	0.26	0.22	0.22	0.20	0.20	0.20	0.20	0.18	0.18
Natural Gas Subtotal	1.66	1.56	1.56	1.44	1.45	1.38	1.38	1.29	1.30
Metallurgical Coal and Coke[4]	0.12	0.10	0.10	0.08	0.08	0.06	0.06	0.05	0.05
Steam Coal	0.28	0.22	0.22	0.19	0.19	0.17	0.17	0.15	0.16
Coal Subtotal	0.40	0.32	0.32	0.27	0.27	0.24	0.24	0.21	0.21
Renewables[5]	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.28	0.28
Purchased Electricity	0.64	0.59	0.59	0.56	0.56	0.54	0.54	0.51	0.51
Delivered Energy	**4.72**	**4.28**	**4.28**	**3.99**	**3.99**	**3.76**	**3.76**	**3.51**	**3.51**
Electricity Related Losses	1.42	1.28	1.28	1.18	1.19	1.09	1.10	1.02	1.02
Total	**6.14**	**5.55**	**5.56**	**5.17**	**5.18**	**4.85**	**4.85**	**4.54**	**4.53**

[1]Fuel consumption 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]Represents natural gas used in the field gathering and processing plant machinery.
[3]Includes net coal coke imports.
[4]Includes petroleum coke, asphalt, road oil, lubricants, motor gasoline, still gas, and miscellaneous petroleum products.
[5]Includes consumption of energy from hydroelectric, wood and wood waste, municipal solid waste, and other biomass.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 prices for motor gasoline and distillate are based on: Energy Information Administration (EIA), *Petroleum Marketing Annual 2002*, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_marketing_annual/current/pdf/pmaall.pdf (August 2003). 2002 coal prices are based on EIA, *Quarterly Coal Report, October-December 2002*, DOE/EIA-0121(2002/4Q) (Washington, DC, March 2003) and EIA, AEO2004 National Energy Modeling System run AEO2004.D101703E. 2002 electricity prices: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). 2002 natural gas prices based on: EIA, *Manufacturing Energy Consumption Survey 1998*. 2002 consumption values based on: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). 2002 shipments: Global Insight macroeconomic model T250803. **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B7. Transportation Sector Key Indicators and Delivered Energy Consumption

Key Indicators and Consumption	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Key Indicators									
Level of Travel (billions)									
Light-Duty Vehicles <8,500 pounds (VMT)	2504	3041	3040	3409	3398	3768	3756	4173	4157
Commercial Light Trucks (VMT)[1]	65	79	79	90	90	101	101	114	114
Freight Trucks >10,000 pounds (VMT)	196	242	242	276	276	313	313	354	354
Air (seat miles available)	909	1122	1123	1327	1327	1455	1455	1521	1521
Rail (ton miles traveled)	1336	1545	1534	1690	1681	1852	1842	2056	2033
Domestic Shipping (ton miles traveled)	724	805	807	857	856	918	919	977	975
Energy Efficiency Indicators									
New Light-Duty Vehicle (miles per gallon)[2]	23.8	25.3	25.3	26.0	26.1	26.5	26.6	26.9	27.0
New Car (miles per gallon)[2]	28.2	28.8	28.8	29.9	29.9	30.4	30.5	30.8	30.9
New Light Truck (miles per gallon)[2]	20.5	22.8	22.8	23.5	23.6	24.1	24.2	24.7	24.8
Light-Duty Fleet (miles per gallon)[3]	19.7	19.6	19.6	20.0	20.0	20.5	20.5	20.9	20.9
New Commercial Light Truck (MPG)[1]	13.9	15.1	15.1	15.6	15.6	16.0	16.1	16.4	16.5
Stock Commercial Light Truck (MPG)[1]	13.8	14.5	14.5	15.0	15.0	15.5	15.5	15.9	16.0
Aircraft Efficiency (seat miles per gallon)	54.8	59.9	59.9	63.3	63.3	65.4	65.4	67.0	66.8
Freight Truck Efficiency (miles per gallon)	6.0	6.0	6.0	6.1	6.1	6.4	6.4	6.5	6.5
Rail Efficiency (ton miles per thousand Btu)	2.9	3.1	3.1	3.3	3.3	3.4	3.4	3.6	3.6
(ton miles per thousand Btu)	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4
Energy Use by Mode									
(quadrillion Btu)									
Light-Duty Vehicles	15.58	18.91	18.90	20.75	20.70	22.34	22.24	24.28	24.14
Commercial Light Trucks[1]	0.59	0.68	0.68	0.75	0.75	0.82	0.81	0.90	0.89
Bus Transportation	0.24	0.25	0.25	0.26	0.26	0.26	0.26	0.26	0.26
Freight Trucks	4.09	5.03	5.03	5.62	5.62	6.15	6.15	6.82	6.81
Rail, Passenger	0.11	0.13	0.13	0.14	0.14	0.16	0.16	0.17	0.17
Rail, Freight	0.47	0.50	0.50	0.52	0.52	0.54	0.54	0.57	0.57
Shipping, Domestic	0.32	0.35	0.35	0.36	0.36	0.39	0.39	0.41	0.41
Shipping, International	0.64	0.72	0.72	0.72	0.72	0.73	0.73	0.74	0.74
Recreational Boats	0.31	0.34	0.34	0.35	0.35	0.37	0.37	0.39	0.39
Air	2.84	3.35	3.35	3.76	3.76	4.09	4.09	4.30	4.32
Military Use	0.66	0.77	0.77	0.79	0.79	0.81	0.81	0.82	0.82
Lubricants	0.20	0.21	0.21	0.23	0.23	0.25	0.25	0.28	0.28
Pipeline Fuel	0.65	0.69	0.70	0.72	0.71	0.83	0.83	0.86	0.86
Total	**26.70**	**31.93**	**31.94**	**35.00**	**34.93**	**37.73**	**37.63**	**40.79**	**40.65**
(million barrels per day oil equivalent)									
Light-Duty Vehicles	8.20	9.96	9.95	10.92	10.90	11.74	11.70	12.75	12.70
Commercial Light Trucks[1]	0.31	0.36	0.36	0.40	0.40	0.43	0.43	0.47	0.47
Bus Transportation	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Freight Trucks	1.94	2.38	2.38	2.66	2.66	2.91	2.91	3.22	3.22
Rail, Passenger	0.05	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08
Rail, Freight	0.22	0.24	0.23	0.24	0.24	0.25	0.25	0.27	0.27
Shipping, Domestic	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19
Shipping, International	0.28	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Recreational Boats	0.16	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20
Air	1.38	1.62	1.62	1.82	1.82	1.98	1.98	2.08	2.09
Military Use	0.32	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.39
Lubricants	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13
Pipeline Fuel	0.33	0.35	0.35	0.36	0.36	0.42	0.42	0.43	0.44
Total	**13.54**	**16.20**	**16.20**	**17.75**	**17.73**	**19.13**	**19.09**	**20.68**	**20.62**

[1]Commercial trucks 8,500 to 10,000 pounds.
[2]Environmental Protection Agency rated miles per gallon.
[3]Combined car and light truck "on-the-road" estimate.
Btu = British thermal unit.
VMT=Vehicle miles traveled.
MPG = Miles per gallon.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.

Sources: 2002: Energy Information Administration (EIA), *Natural Gas Annual 2001*, DOE/EIA-0131(2001) (Washington, DC, February 2003); Federal Highway Administration, *Highway Statistics 2000* (Washington, DC, November 2001); Oak Ridge National Laboratory, Transportation Energy Data Book: *Edition 22 and Annual* (Oak Ridge, TN, September 2002); National Highway Traffic and Safety Administration, *Summary of Fuel Economy Performance* (Washington, DC, February 2000); EIA, *Household Vehicle Energy Consumption 1994*, DOE/EIA-0464(94) (Washington, DC, August 1997); U.S. Department of Commerce, Bureau of the Census, "Vehicle Inventory and Use Survey" EC97TV (Washington, DC, October 1999); EIA, *Describing Current and Potential Markets for Alternative-Fuel Vehicles*, DOE/EIA-0604(96) (Washington, DC, March 1996); EIA, *Alternatives to Traditional Transportation Fuels 1998*, http://www.eia.doe.gov/cneaf/alt_trans98/table1.html; EIA, *State Energy Data Report 2000*, DOE/EIA-0214(2000) (Washington, DC, August 2003); U.S. Department of Transportation, Research and Special Programs Administration, *Air Carrier Statistics Monthly, December 2002/2001* (Washington, DC, 2002); EIA, *Fuel Oil and Kerosene Sales 2001*, http://www.eia.doe.gov/oil_gas/petroleum/data_publications/fuel_oil_and_kerosene_sales/historical/foks.html; and United States Department of Defense, Defense Fuel Supply Center. **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B8. Electricity Supply, Disposition, Prices, and Emissions

(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Generation by Fuel Type									
Electric Power Sector[1]									
Power Only[2]									
Coal	1875	2201	2167	2318	2298	2560	2534	2975	2909
Petroleum	77	62	57	103	91	82	75	77	75
Natural Gas[3]	450	642	611	814	776	972	943	969	977
Nuclear Power	780	794	799	812	854	816	864	816	864
Pumped Storage/Other	-9	-9	-9	-9	-9	-9	-9	-9	-9
Renewable Sources[4]	304	400	468	420	448	442	457	460	468
Distributed Generation (Natural Gas)	0	0	0	1	1	3	4	5	6
Non-Utility Generation for Own Use	-34	-37	-37	-37	-37	-37	-37	-37	-37
Total	**3443**	**4054**	**4055**	**4423**	**4422**	**4829**	**4831**	**5257**	**5252**
Combined Heat and Power[5]									
Coal	32	33	33	34	33	33	33	33	33
Petroleum	6	1	1	5	3	2	2	2	2
Natural Gas	148	174	169	165	167	159	160	149	149
Renewable Sources	5	4	4	4	4	4	4	4	4
Non-Utility Generation for Own Use	-11	-24	-24	-24	-24	-24	-24	-24	-24
Total	**183**	**188**	**183**	**183**	**184**	**175**	**175**	**164**	**164**
Net Available to the Grid	**3626**	**4242**	**4238**	**4606**	**4605**	**5004**	**5006**	**5421**	**5417**
End-Use Sector Generation									
Combined Heat and Power[6]									
Coal	21	21	21	21	21	21	21	21	21
Petroleum	5	12	12	15	14	17	18	18	18
Natural Gas	84	109	110	129	129	153	152	181	179
Other Gaseous Fuels[7]	5	9	9	11	11	12	12	13	13
Renewable Sources[4]	30	39	39	45	45	50	50	54	54
Other[8]	11	11	11	11	11	11	11	11	11
Total	**157**	**202**	**202**	**231**	**231**	**264**	**264**	**299**	**296**
Other End-Use Generators[9]	4	5	5	5	5	5	5	7	7
Generation for Own Use	-134	-158	-159	-173	-173	-190	-189	-210	-209
Total Sales to the Grid	**27**	**48**	**49**	**63**	**63**	**80**	**80**	**95**	**94**
Total Electricity Generation	**3831**	**4510**	**4507**	**4904**	**4902**	**5335**	**5335**	**5787**	**5780**
Net Imports	**22**	**31**	**30**	**32**	**31**	**21**	**20**	**8**	**7**
Electricity Sales by Sector									
Residential	1268	1428	1424	1531	1527	1641	1639	1747	1740
Commercial	1208	1480	1479	1653	1652	1828	1829	2003	2001
Industrial	994	1120	1121	1216	1216	1310	1310	1422	1421
Transportation	22	26	26	29	29	32	32	35	35
Total	**3492**	**4055**	**4051**	**4429**	**4424**	**4811**	**4811**	**5207**	**5198**
End-Use Prices[10] **(2002 cents per kilowatthour)**									
Residential	8.4	7.9	7.9	8.1	8.0	8.1	8.0	8.1	8.1
Commercial	7.8	7.0	6.9	7.2	7.1	7.2	7.1	7.3	7.2
Industrial	5.0	4.6	4.5	4.7	4.6	4.8	4.7	4.8	4.8
Transportation	7.2	6.7	6.6	6.9	6.8	6.8	6.8	6.8	6.7
All Sectors Average	**7.2**	**6.6**	**6.6**	**6.8**	**6.7**	**6.9**	**6.8**	**6.9**	**6.8**
Prices by Service Category[10] **(2002 cents per kilowatthour)**									
Generation	4.6	4.1	4.1	4.4	4.3	4.5	4.4	4.5	4.5
Transmission	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Distribution	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7

Table B8. Electricity Supply, Disposition, Prices, and Emissions (Continued)

(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Electric Power Sector Emissions[1]									
Sulfur Dioxide (million tons)	10.54	9.90	10.11	8.95	8.94	8.94	8.95	8.95	8.94
Nitrogen Oxide (million tons)	4.39	3.50	3.49	3.60	3.57	3.67	3.64	3.75	3.69
Mercury (tons)	50.95	52.20	52.06	52.65	52.26	53.59	53.54	54.37	54.42

[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.
[2]Includes plants that only produce electricity.
[3]Includes electricity generation from fuel cells.
[4]Includes conventional hydroelectric, geothermal, wood, wood waste, municipal solid waste, landfill gas, other biomass, solar, and wind power.
[5]Includes combined heat and power plants whose primary business is to sell electricity and heat to the public (i.e., those that report NAICS code 22).
[6]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors.
[7]Other gaseous fuels include refinery and still gas.
[8]Other includes batteries, chemicals, hydrogen, pitch, purchased steam, sulfur and miscellaneous technologies.
[9]Other end-use generators include 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.
[10]Prices represent average revenue per kilowatthour.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Source: 2002 power only and combined heat and power generation, sales to utilities, net imports, residential, industrial, and total electricity sales, and emissions: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002), and supporting databases. 2002 commercial and transportation electricity sales: EIA estimates based on Oak Ridge National Laboratory, *Transportation Energy Data Book 21* (Oak Ridge, TN, September 2001). 2002 prices: EIA, National Energy Modeling System run AEO2004.D101703E. **Projections**: EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B9. Electricity Generating Capacity

(Gigawatts)

Net Summer Capacity[1]	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Electric PowerSector[2]									
Power Only[3]									
Coal Steam	305.7	305.1	306.1	316.4	315.4	348.4	346.0	407.2	397.6
Other Fossil Steam[4]	132.5	105.0	106.3	101.6	101.2	100.0	99.5	95.4	97.0
Combined Cycle	81.0	127.1	124.2	158.8	148.8	184.4	179.1	202.3	198.9
Combustion Turbine/Diesel	123.5	131.1	130.2	152.7	154.5	163.9	166.3	175.0	178.3
Nuclear Power[5]	98.7	100.6	100.6	102.1	108.1	102.6	108.6	102.6	108.6
Pumped Storage	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
Fuel Cells	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewable Sources[6]	91.4	97.1	104.5	101.0	107.6	105.7	109.3	109.9	111.7
Distributed Generation[7]	0.0	0.5	0.5	2.4	2.9	7.6	8.5	12.4	13.5
Total	**853.1**	**886.8**	**892.9**	**955.3**	**959.0**	**1032.9**	**1037.6**	**1125.1**	**1125.9**
Combined Heat and Power[8]									
Coal Steam	5.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Other Fossil Steam[4]	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Combined Cycle	29.4	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9
Combustion Turbine/Diesel	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Renewable Sources[6]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	**41.4**	**44.8**	**44.8**	**44.8**	**44.8**	**44.8**	**44.8**	**44.8**	**44.8**
Total Electric Power Industry	**894.5**	**931.7**	**937.7**	**1000.2**	**1003.8**	**1077.7**	**1082.4**	**1169.9**	**1170.7**
Cumulative Planned Additions[9]									
Coal Steam	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Other Fossil Steam[4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5
Combustion Turbine/Diesel	0.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Cells	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewable Sources[6]	0.0	4.3	4.3	4.6	4.6	4.7	4.7	4.8	4.8
Distributed Generation[7]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**0.0**	**57.1**	**57.1**	**57.4**	**57.4**	**57.5**	**57.5**	**57.6**	**57.6**
Cumulative Unplanned Additions[9]									
Coal Steam	0.0	5.7	6.6	17.5	16.5	50.7	48.3	110.6	101.1
Other Fossil Steam[4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	6.6	4.9	38.3	29.5	64.0	59.7	81.9	79.5
Combustion Turbine/Diesel	0.0	10.5	9.7	32.8	35.0	46.0	48.1	59.1	61.8
Nuclear Power	0.0	0.0	0.0	0.0	6.0	0.0	6.0	0.0	6.0
Pumped Storage	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
Renewable Sources[6]	0.0	1.1	8.5	4.6	11.3	9.3	12.9	13.3	15.1
Distributed Generation[7]	0.0	0.5	0.5	2.4	2.9	7.6	8.5	12.4	13.5
Total	**0.0**	**24.3**	**30.3**	**95.7**	**101.2**	**177.5**	**183.6**	**277.2**	**277.1**
Cumulative Total Additions	**0.0**	**81.4**	**87.3**	**153.0**	**158.6**	**235.0**	**241.0**	**334.8**	**334.7**
Cumulative Retirements[10]									
Coal Steam	0.0	7.5	7.5	8.0	8.0	9.3	9.3	10.4	10.4
Other Fossil Steam[4]	0.0	25.6	24.3	29.0	29.4	30.6	31.1	35.2	33.6
Combined Cycle	0.0	1.1	2.3	1.1	2.3	1.1	2.3	1.1	2.3
Combustion Turbine/Diesel	0.0	10.2	10.3	11.0	11.3	13.0	12.7	14.9	14.3
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pumped Storage	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
Renewable Sources[6]	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	**0.0**	**44.6**	**44.4**	**49.3**	**51.1**	**54.2**	**55.5**	**61.8**	**60.8**

Table B9. Electricity Generating Capacity (Continued)

(Gigawatts)

Net Summer Capacity[1]	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
End-Use Sector									
Combined Heat and Power[11]									
Coal	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Petroleum	1.0	1.6	1.6	1.9	1.8	2.2	2.3	2.3	2.3
Natural Gas	14.1	17.8	17.9	20.4	20.4	23.7	23.5	27.6	27.2
Other Gaseous Fuels	1.8	2.2	2.2	2.4	2.4	2.6	2.5	2.7	2.7
Renewable Sources[6]	4.2	5.6	5.6	6.7	6.7	7.5	7.5	8.3	8.3
Other	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	**25.5**	**31.7**	**31.8**	**35.8**	**35.8**	**40.5**	**40.3**	**45.3**	**44.9**
Other End-Use Generators[12]									
Renewable Sources[13]	1.1	1.4	1.5	1.4	1.5	1.6	1.7	2.1	2.2
Cumulative Additions[9]									
Combined Heat and Power[11]	0.0	6.2	6.3	10.4	10.3	15.0	14.8	19.8	19.4
Other End-Use Generators[12]	0.0	0.3	0.4	0.4	0.4	0.5	0.6	1.1	1.1

[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 (CHP) 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 capability.
[5]Nuclear capacity reflects operating capacity of existing units, including 3.9 gigawatts of uprates through 2025.
[6]Includes conventional hydroelectric, geothermal, wood, wood waste, municipal solid 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 NAICS code 22).
[9]Cumulative additions after December 31, 2002.
[10]Cumulative total retirements after December 31, 2002.
[11]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors.
[12]Other end-use generators include 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.
[13]See Table B17 for more detail.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model estimates and may differ slightly from official EIA data reports.
Source: 2002 electric generating capacity and projected planned additions: Energy Information Administration (EIA), Form EIA-860: "Annual Electric Generator Report" (preliminary). **Projections**: EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B10. Electricity Trade

(Billion Kilowatthours, Unless Otherwise Noted)

Electricity Trade	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Interregional Electricity Trade									
Gross Domestic Firm Power Trade	138.9	107.1	107.1	70.7	70.7	41.5	41.5	41.5	41.5
Gross Domestic Economy Trade	209.9	229.7	225.4	221.2	221.7	218.4	219.8	183.4	201.9
Gross Domestic Trade	**348.8**	**336.8**	**332.5**	**291.8**	**292.4**	**259.9**	**261.4**	**224.9**	**243.5**
Gross Domestic Firm Power Sales (million 2002 dollars)	6932.4	5345.8	5345.8	3528.2	3528.2	2074.2	2074.2	2074.2	2074.2
Gross Domestic Economy Sales (million 2002 dollars)	6809.8	7629.6	7408.0	8674.0	8495.7	8663.8	8654.3	7319.5	8066.8
Gross Domestic Sales (million 2002 dollars)	**13742.1**	**12975.3**	**12753.8**	**12202.2**	**12024.0**	**10738.0**	**10728.5**	**9393.7**	**10141.0**
International Electricity Trade									
Firm Power Imports From Canada and Mexico	9.5	5.8	5.8	2.6	2.6	0.0	0.0	0.0	0.0
Economy Imports From Canada and Mexico	26.8	41.3	40.7	40.9	39.5	28.9	27.6	15.1	14.8
Gross Imports From Canada and Mexico	**36.3**	**47.2**	**46.6**	**43.5**	**42.1**	**28.9**	**27.6**	**15.2**	**14.8**
Firm Power Exports To Canada and Mexico	5.6	8.7	8.7	3.9	3.9	0.0	0.0	0.0	0.0
Economy Exports To Canada and Mexico	8.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Gross Exports To Canada and Mexico	**14.3**	**16.4**	**16.4**	**11.5**	**11.5**	**7.7**	**7.7**	**7.7**	**7.7**

Note: Totals may not equal sum of components due to independent rounding. Data for 2002 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.

Source: Energy Information Administration, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B11. Petroleum Supply and Disposition Balance

(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Crude Oil									
Domestic Crude Production[1]	5.62	5.93	5.95	5.53	5.52	4.95	5.00	4.61	4.65
Alaska	0.98	0.92	0.92	0.93	0.94	0.72	0.72	0.51	0.51
Lower 48 States	4.64	5.01	5.03	4.59	4.59	4.23	4.27	4.11	4.14
Net Imports	9.13	11.21	11.19	13.47	13.38	14.50	14.31	15.74	15.59
Gross Imports	9.14	11.29	11.27	13.53	13.44	14.53	14.34	15.76	15.61
Exports	0.01	0.08	0.08	0.06	0.06	0.03	0.04	0.02	0.02
Other Crude Supply[2]	0.07	0.00	-0.04	0.00	-0.12	0.00	0.00	0.00	0.00
Total Crude Supply	**14.83**	**17.15**	**17.11**	**19.00**	**18.79**	**19.45**	**19.31**	**20.35**	**20.24**
Natural Gas Plant Liquids	**1.88**	**2.24**	**2.28**	**2.31**	**2.31**	**2.48**	**2.50**	**2.47**	**2.50**
Other Inputs[3]	**0.67**	**0.47**	**0.53**	**0.44**	**0.51**	**0.46**	**0.52**	**0.48**	**0.55**
Refinery Processing Gain[4]	**0.98**	**0.88**	**0.88**	**0.97**	**0.97**	**1.00**	**0.98**	**1.04**	**1.01**
Net Product Imports[5]	**1.41**	**1.95**	**1.87**	**2.05**	**2.09**	**2.99**	**2.99**	**3.94**	**3.86**
Gross Refined Product Imports[6]	1.92	2.17	2.12	2.29	2.41	2.82	2.90	3.60	3.52
Unfinished Oil Imports	0.41	0.72	0.70	0.74	0.66	1.15	1.07	1.34	1.35
Ether Imports	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exports	0.97	0.94	0.94	0.98	0.98	0.98	0.98	1.01	1.00
Total Primary Supply[7]	**19.77**	**22.69**	**22.67**	**24.77**	**24.66**	**26.38**	**26.29**	**28.27**	**28.16**
Refined Petroleum Products Supplied									
Motor Gasoline[8]	8.86	10.59	10.58	11.51	11.49	12.30	12.26	13.30	13.23
Jet Fuel[9]	1.61	1.90	1.90	2.10	2.10	2.27	2.27	2.37	2.38
Distillate Fuel[10]	3.68	4.38	4.37	4.94	4.89	5.24	5.23	5.71	5.70
Residual Fuel	0.74	0.71	0.70	0.77	0.76	0.77	0.75	0.75	0.76
Other[11]	4.72	5.13	5.13	5.48	5.44	5.84	5.81	6.16	6.12
Total	**19.61**	**22.71**	**22.69**	**24.80**	**24.69**	**26.41**	**26.31**	**28.30**	**28.18**
Refined Petroleum Products Supplied									
Residential and Commercial	1.22	1.38	1.37	1.39	1.39	1.40	1.40	1.40	1.40
Industrial[12]	4.80	5.14	5.14	5.50	5.46	5.86	5.83	6.21	6.16
Transportation	13.21	15.91	15.90	17.44	17.43	18.77	18.73	20.32	20.27
Electric Generators[13]	0.38	0.29	0.27	0.47	0.42	0.38	0.35	0.36	0.35
Total	**19.61**	**22.71**	**22.69**	**24.80**	**24.69**	**26.41**	**26.31**	**28.30**	**28.18**
Discrepancy[14]	**0.16**	**-0.02**	**-0.02**	**-0.03**	**-0.03**	**-0.04**	**-0.02**	**-0.03**	**-0.02**
World Oil Price (2002 dollars per barrel)[15]	**23.68**	**24.17**	**24.18**	**25.07**	**25.14**	**26.02**	**26.07**	**27.00**	**27.01**
Import Share of Product Supplied	**0.54**	**0.58**	**0.58**	**0.63**	**0.63**	**0.66**	**0.66**	**0.70**	**0.69**
Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2002 dollars)	**90.38**	**118.31**	**117.16**	**143.82**	**144.85**	**168.99**	**168.45**	**200.24**	**199.30**
Domestic Refinery Distillation Capacity[16]	**16.8**	**18.7**	**18.7**	**20.4**	**20.2**	**20.8**	**20.7**	**21.8**	**21.6**
Capacity Utilization Rate (percent)	**91.0**	**93.1**	**93.0**	**94.7**	**94.5**	**94.8**	**94.7**	**94.8**	**94.8**

[1]Includes lease condensate.
[2]Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude stock withdrawals minus crude products supplied.
[3]Includes alcohols, ethers, petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, natural gas converted to liquid fuel, and coal converted to liquid fuel.
[4]Represents volumetric gain in refinery distillation and cracking processes.
[5]Includes net imports of finished petroleum products, unfinished oils, other hydrocarbons, alcohols, ethers, and blending components.
[6]Includes other hydrocarbons, alcohols, and blending components.
[7]Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.
[8]Includes ethanol and ethers blended into gasoline.
[9]Includes only kerosene type.
[10]Includes distillate and kerosene.
[11]Includes aviation gasoline, liquefied petroleum gas, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, 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 (CHP) 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]Average refiner acquisition cost for imported crude oil.
[16]End-of-year capacity.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). Other 2002 data: EIA, *Petroleum Supply Annual 2002,* DOE/EIA-0340(2002)/1 (Washington, DC, June 2003). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B12. Petroleum Product Prices

(2002 Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
World Oil Price (2002 dollars per barrel)	**23.68**	**24.17**	**24.18**	**25.07**	**25.14**	**26.02**	**26.07**	**27.00**	**27.01**
Delivered Sector Product Prices									
Residential									
Distillate Fuel	114.2	108.4	108.7	111.8	112.0	116.4	116.4	118.4	118.3
Liquefied Petroleum Gas	110.8	119.1	119.1	124.1	124.5	126.9	127.3	130.3	130.3
Commercial									
Distillate Fuel	84.1	75.6	75.8	78.4	78.5	83.3	83.4	85.3	85.2
Residual Fuel	63.1	61.8	61.8	64.0	64.1	66.1	66.1	68.1	68.1
Residual Fuel (2002 dollars per barrel)	26.48	25.97	25.95	26.87	26.92	27.75	27.75	28.59	28.62
Industrial[1]									
Distillate Fuel	86.2	78.8	78.8	81.1	81.1	86.6	86.7	88.8	88.5
Liquefied Petroleum Gas	71.1	83.4	83.4	88.3	88.8	91.4	91.7	95.3	94.6
Residual Fuel	58.3	56.0	56.0	58.2	58.4	60.3	60.4	62.4	62.5
Residual Fuel (2002 dollars per barrel)	24.48	23.54	23.53	24.42	24.51	25.34	25.36	26.22	26.25
Transportation									
Diesel Fuel (distillate)[2]	130.6	140.3	140.4	140.9	141.3	138.6	138.5	139.0	139.5
Jet Fuel[3]	80.6	77.8	77.9	79.0	79.1	81.8	81.5	83.9	83.4
Motor Gasoline[4]	138.1	146.9	147.2	146.8	149.8	147.3	149.7	149.2	152.1
Liquid Petroleum Gas	128.7	128.3	128.3	132.0	132.3	133.0	133.7	135.8	135.6
Residual Fuel	56.5	53.9	53.9	55.9	56.1	58.0	58.1	60.2	60.2
Residual Fuel (2002 dollars per barrel)	23.71	22.62	22.62	23.48	23.54	24.37	24.41	25.28	25.30
Ethanol (E85)[5]	135.8	153.9	157.4	159.1	189.6	163.4	188.0	166.1	197.2
Electric Power[6]									
Distillate Fuel	77.4	68.2	68.0	70.5	70.3	75.8	75.8	77.9	77.6
Residual Fuel	60.4	59.7	59.8	61.9	62.0	64.5	64.7	67.4	67.3
Residual Fuel (2002 dollars per barrel)	25.38	25.07	25.10	26.01	26.03	27.07	27.19	28.30	28.25
Refined Petroleum Product Prices[7]									
Distillate Fuel	118.1	123.8	124.0	124.4	125.2	125.9	125.9	127.3	127.7
Jet Fuel[3]	80.6	77.8	77.9	79.0	79.1	81.8	81.5	83.9	83.4
Liquefied Petroleum Gas	79.6	91.3	91.3	96.1	96.7	99.1	99.3	102.6	102.1
Motor Gasoline[4]	138.1	146.9	147.2	146.8	149.8	147.3	149.7	149.2	152.1
Residual Fuel	58.6	56.6	56.5	58.8	58.9	61.1	61.1	63.3	63.4
Residual Fuel (2002 dollars per barrel)	24.62	23.76	23.74	24.71	24.75	25.65	25.67	26.60	26.61
Average	**116.1**	**123.9**	**124.1**	**124.8**	**126.6**	**126.3**	**127.5**	**128.6**	**130.0**

[1]Includes combined heat and power, which produces electricity and other useful thermal energy.
[2] Diesel fuel containing 500 part per million (ppm) or 15 ppm sulfur. Includes Federal and State taxes while excluding county and local taxes.
[3]Kerosene-type jet fuel.
[4]Sales weighted-average price for all grades. Includes Federal, State and local taxes.
[5]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 actually varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.
[6]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.
[7]Weighted averages of end-use fuel prices are derived from the prices in each sector and the corresponding sectoral consumption.
Note: Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources:. 2002 prices for motor gasoline, distillate, and jet fuel are based on: EIA, *Petroleum Marketing Annual 2002*, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/petroleum_marketing_annual/current/pdf/pmaall.pdf (August 2003). 2002 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." 2002 electric power prices based on: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2002 ethanol prices derived from weekly spot prices in the Oxy Fuel News. 2002 world oil price: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). **Projections**: EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B13. Natural Gas Supply and Disposition
(Trillion Cubic Feet per Year)

Supply and Disposition	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Production									
Dry Gas Production[1]	19.05	20.50	20.85	21.62	21.64	23.79	23.92	23.99	24.25
Supplemental Natural Gas[2]	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Net Imports	**3.49**	**5.50**	**4.94**	**6.24**	**6.11**	**6.47**	**6.24**	**7.24**	**7.11**
Canada	3.59	3.68	3.60	3.17	3.13	2.51	2.52	2.56	2.52
Mexico	-0.26	-0.34	-0.35	-0.15	-0.16	-0.18	-0.22	-0.12	-0.17
Liquefied Natural Gas	0.17	2.16	1.69	3.22	3.14	4.14	3.93	4.80	4.76
Total Supply	**22.62**	**26.09**	**25.88**	**27.95**	**27.85**	**30.36**	**30.26**	**31.33**	**31.45**
Consumption by Sector									
Residential	4.92	5.53	5.54	5.68	5.69	5.92	5.93	6.09	6.09
Commercial	3.12	3.48	3.48	3.62	3.64	3.83	3.86	4.04	4.05
Industrial[3]	7.23	8.39	8.40	8.87	8.93	9.57	9.60	10.29	10.31
Electric Generators[4]	5.55	6.66	6.41	7.64	7.45	8.61	8.43	8.39	8.47
Transportation[5]	0.01	0.06	0.06	0.08	0.08	0.10	0.10	0.11	0.11
Pipeline Fuel	0.63	0.67	0.68	0.70	0.70	0.81	0.81	0.84	0.84
Lease and Plant Fuel[6]	1.32	1.36	1.38	1.44	1.44	1.61	1.61	1.65	1.66
Total	**22.78**	**26.15**	**25.94**	**28.03**	**27.92**	**30.44**	**30.34**	**31.41**	**31.54**
Natural Gas to Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discrepancy[7]	**-0.16**	**-0.06**	**-0.06**	**-0.07**	**-0.07**	**-0.08**	**-0.08**	**-0.09**	**-0.08**

[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 consumption for combined heat and power, which produces electricity and other useful thermal energy.
[4]Includes consumption of energy by 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.
[5]Compressed natural gas used as vehicle fuel.
[6]Represents natural gas used in the field gathering and processing plant machinery.
[7]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, 2002 values include net storage injections.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2003/06) (Washington, DC, June 2003). 2002 consumption based on: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B14. Natural Gas Prices, Margins, and Revenue

(2002 Dollars per Thousand Cubic Feet, Unless Otherwise Noted)

Prices, Margins, and Revenue	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Source Price									
Average Lower 48 Wellhead Price[1]	2.95	3.40	3.41	4.19	4.10	4.28	4.16	4.40	4.40
Average Import Price	3.14	3.78	3.75	4.59	4.48	4.58	4.43	4.67	4.65
Average[2]	**2.98**	**3.49**	**3.48**	**4.29**	**4.20**	**4.35**	**4.23**	**4.47**	**4.46**
Delivered Prices									
Residential	7.86	7.88	7.88	8.52	8.42	8.47	8.36	8.56	8.55
Commercial	6.55	6.83	6.82	7.52	7.43	7.52	7.41	7.62	7.61
Industrial[3]	3.85	4.16	4.17	4.94	4.85	5.02	4.89	5.13	5.13
Electric Generators[4]	3.85	4.12	4.10	4.87	4.78	4.94	4.81	5.01	5.02
Transportation[5]	7.58	8.49	8.48	9.32	9.23	9.32	9.20	9.34	9.34
Average[6]	**5.21**	**5.41**	**5.41**	**6.09**	**6.00**	**6.09**	**5.98**	**6.19**	**6.19**
Transmission & Distribution Margins[7]									
Residential	4.88	4.40	4.40	4.23	4.23	4.11	4.14	4.09	4.09
Commercial	3.56	3.34	3.34	3.23	3.23	3.17	3.18	3.15	3.15
Industrial[3]	0.87	0.68	0.69	0.65	0.65	0.67	0.66	0.66	0.67
Electric Generators[4]	0.86	0.63	0.62	0.58	0.58	0.59	0.58	0.54	0.56
Transportation[5]	4.60	5.00	5.00	5.03	5.03	4.96	4.98	4.87	4.88
Average[6]	**2.23**	**1.92**	**1.93**	**1.80**	**1.81**	**1.74**	**1.75**	**1.72**	**1.72**
Transmission & Distribution Revenue (billion 2002 dollars)									
Residential	24.02	24.33	24.33	24.02	24.05	24.34	24.56	24.89	24.91
Commercial	11.12	11.61	11.64	11.71	11.75	12.13	12.27	12.72	12.77
Industrial[3]	6.27	5.67	5.76	5.78	5.80	6.42	6.38	6.80	6.86
Electric Generators[4]	4.78	4.21	3.94	4.46	4.31	5.10	4.92	4.54	4.72
Transportation[5]	0.06	0.28	0.29	0.40	0.40	0.48	0.48	0.54	0.54
Total	**46.25**	**46.11**	**45.96**	**46.37**	**46.31**	**48.46**	**48.61**	**49.49**	**49.80**

[1]Represents lower 48 onshore and offshore supplies.
[2]Quantity-weighted average of the average lower 48 wellhead price and the average price of imports at the U.S. border.
[3]Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.
[4]Includes consumption of energy by 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.
[5]Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes.
[6]Weighted average prices and margins. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.
[7]Within the table, "transmission and distribution" margins equal the difference between the delivered price and the source price (average of the wellhead price and the price of imports at the U.S. border) of natural gas and, thus, reflect the total cost of bringing natural gas to market. When the term "transmission and distribution" margins is used in today's natural gas market, it generally does not include the cost of independent natural gas marketers or costs associated with aggregation of supplies, provisions of storage, and other services. As used here, the term includes the cost of all services and the cost of pipeline fuel used in compressor stations.

Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.

Sources: 2002 electric generators delivered price: Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." 2002 industrial delivered prices based on Energy Information Administration (EIA), *Manufacturing Energy Consumption Survey 1998*. 2002 residential, commercial, and transportation delivered prices, average lower 48 wellhead price, and average import price: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2003/06) (Washington, DC, June 2003). Other 2002 values**:** EIA, Office of Integrated Analysis and Forecasting. **Projections**: EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B15. Oil and Gas Supply

Production and Supply	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Crude Oil									
Lower 48 Average Wellhead Price[1] (2002 dollars per barrel)	**24.54**	**23.61**	**23.64**	**24.56**	**24.71**	**25.82**	**25.86**	**26.72**	**26.86**
Production (million barrels per day)[2]									
U.S. Total	**5.62**	**5.93**	**5.95**	**5.53**	**5.52**	**4.95**	**5.00**	**4.61**	**4.65**
Lower 48 Onshore	3.11	2.61	2.61	2.38	2.38	2.20	2.20	2.04	2.04
Lower 48 Offshore	1.53	2.40	2.42	2.21	2.20	2.03	2.08	2.06	2.09
Alaska	0.98	0.92	0.92	0.93	0.94	0.72	0.72	0.51	0.51
Lower 48 End of Year Reserves (billion barrels)[2]	**19.05**	**18.36**	**18.40**	**17.13**	**17.11**	**16.20**	**16.19**	**14.98**	**15.05**
Natural Gas									
Lower 48 Average Wellhead Price[1] (2002 dollars per thousand cubic feet)	**2.95**	**3.40**	**3.41**	**4.19**	**4.10**	**4.28**	**4.16**	**4.40**	**4.40**
Dry Production (trillion cubic feet)[3]									
U.S. Total	**19.05**	**20.50**	**20.85**	**21.62**	**21.65**	**23.79**	**23.92**	**23.99**	**24.25**
Lower 48 Onshore	13.76	14.48	14.68	16.11	16.10	16.41	16.38	16.26	16.59
Associated-Dissolved[4]	1.60	1.41	1.40	1.31	1.31	1.23	1.23	1.17	1.17
Non-Associated	12.16	13.08	13.28	14.81	14.79	15.18	15.15	15.09	15.42
Conventional	6.23	5.80	5.77	6.13	6.06	6.07	6.01	5.92	5.96
Unconventional	5.93	7.28	7.51	8.67	8.74	9.11	9.13	9.16	9.46
Lower 48 Offshore	4.86	5.41	5.57	4.87	4.91	5.09	5.25	5.03	4.96
Associated-Dissolved[4]	1.05	1.61	1.63	1.33	1.33	1.34	1.36	1.43	1.42
Non-Associated	3.81	3.80	3.94	3.54	3.57	3.75	3.89	3.60	3.54
Alaska	0.43	0.60	0.60	0.64	0.64	2.29	2.29	2.71	2.71
Lower 48 End of Year Dry Reserves[3] (trillion cubic feet)	**180.03**	**201.20**	**203.03**	**203.74**	**204.66**	**200.97**	**202.08**	**193.51**	**194.50**
Supplemental Gas Supplies (trillion cubic feet)[5]	**0.08**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**
Total Lower 48 Wells (thousands)	**24.47**	**24.78**	**24.35**	**26.80**	**26.53**	**26.83**	**26.48**	**26.00**	**26.29**

[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 reserves 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 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: Energy Information Administration (EIA), *Petroleum Supply Annual 2002,* DOE/EIA-0340(2002)/1 (Washington, DC, June 2003). 2002 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2003/06) (Washington, DC, June 2003). Other 2002 values: EIA, Office of Integrated Analysis and Forecasting. **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B16. Coal Supply, Disposition, and Prices

(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Production[1]									
Appalachia	408	408	407	395	395	402	404	419	414
Interior	147	169	170	162	163	170	171	178	174
West	550	653	633	728	712	805	784	946	914
East of the Mississippi	504	524	522	505	507	522	526	547	540
West of the Mississippi	601	706	688	780	763	854	834	996	964
Total	**1105**	**1230**	**1210**	**1285**	**1270**	**1377**	**1360**	**1543**	**1503**
Net Imports									
Imports	17	33	33	38	38	42	42	46	46
Exports	40	35	35	32	32	27	29	23	24
Total	**-23**	**-2**	**-2**	**6**	**6**	**14**	**12**	**23**	**22**
Total Supply[2]	**1083**	**1228**	**1209**	**1291**	**1276**	**1391**	**1372**	**1566**	**1525**
Consumption by Sector									
Residential and Commercial	4	5	5	5	5	5	5	5	5
Industrial[3]	63	65	65	65	65	66	66	67	67
of which: Coal to Liquids	0	0	0	0	0	0	0	0	0
Coke Plants	23	23	24	21	21	19	19	17	17
Electric Generators[4]	976	1136	1116	1200	1185	1301	1283	1477	1436
Total	**1066**	**1229**	**1209**	**1291**	**1276**	**1391**	**1373**	**1567**	**1526**
Discrepancy and Stock Change[5]	**17**	**0**	**0**	**0**	**0**	**0**	**-1**	**-1**	**-1**
Average Minemouth Price									
(2002 dollars per short ton)	17.90	16.88	16.87	16.47	16.46	16.32	16.48	16.57	16.42
(2002 dollars per million Btu)	0.87	0.82	0.82	0.81	0.81	0.80	0.81	0.82	0.81
Delivered Prices (2002 dollars per short ton)[6]									
Industrial	33.24	34.46	34.30	33.83	33.73	33.43	33.51	33.33	33.03
Coke Plants	51.27	53.68	53.55	52.13	52.04	50.45	50.35	48.42	48.37
Electric Generators									
(2002 dollars per short ton)	25.96	24.67	24.50	24.34	24.20	24.01	24.00	24.31	24.05
(2002 dollars per million Btu)	1.26	1.22	1.22	1.22	1.21	1.20	1.20	1.22	1.21
Average	**26.93**	**25.74**	**25.59**	**25.28**	**25.16**	**24.83**	**24.83**	**24.96**	**24.72**
Exports[7]	40.44	36.47	36.33	35.25	35.17	34.13	34.38	32.34	32.11

[1]Includes anthracite, bituminous coal, lignite, and waste coal delivered to independent power producers. Waste coal deliveries totaled 11.1 million tons in 2002.
[2]Production plus net imports plus net storage withdrawals.
[3]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.
[4]Includes all electricity-only and combined heat and power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public.
[5]Balancing item: the sum of production, net imports, and net storage withdrawals minus total consumption.
[6]Sectoral prices weighted by consumption tonnage; weighted average excludes residential/ commercial prices and export free-alongside-ship (f.a.s.) prices.
[7]F.a.s. price at U.S. port of exit.
Btu = British thermal unit.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 data based on Energy Information Administration (EIA), *Quarterly Coal Report, October-December 2002*, DOE/EIA-0121(2002/4Q) (Washington, DC, March 2003); EIA, *Annual Coal Report 2002*, DOE/EIA-0584(2002) (Washington, DC, November 2003); and EIA, AEO2004 National Energy Modeling System run AEO2004.D101703E.
Projections: EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B17. Renewable Energy Generating Capacity and Generation
(Gigawatts, Unless Otherwise Noted)

Capacity and Generation	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Electric Power Sector[1]									
Net Summer Capacity									
Conventional Hydropower	78.29	78.69	78.69	78.68	78.68	78.68	78.68	78.68	78.68
Geothermal[2]	2.89	4.01	3.99	5.11	5.14	6.06	5.97	6.84	6.72
Municipal Solid Waste[3]	3.49	3.92	3.99	3.92	3.99	3.95	3.99	3.95	3.99
Wood and Other Biomass[4,5]	1.83	2.20	2.14	2.31	2.37	3.04	2.68	3.74	3.60
Solar Thermal	0.33	0.43	0.43	0.47	0.47	0.49	0.49	0.52	0.52
Solar Photovoltaic[5]	0.02	0.15	0.15	0.24	0.24	0.32	0.32	0.41	0.41
Wind	4.83	8.01	15.41	10.48	16.99	13.39	17.39	15.99	18.02
Total	**91.69**	**97.42**	**104.81**	**101.22**	**107.88**	**105.93**	**109.53**	**110.13**	**111.94**
Generation (billion kilowatthours)									
Conventional Hydropower	255.78	304.37	304.37	304.48	304.47	304.63	304.63	304.80	304.80
Geothermal[2]	13.36	23.25	23.10	32.31	32.52	40.14	39.43	46.66	45.66
Municipal Solid Waste[3]	20.02	28.11	28.68	28.18	28.73	28.44	28.77	28.50	28.83
Wood and Other Biomass[5]	8.67	23.53	63.75	25.07	28.53	27.64	28.29	29.16	30.74
Dedicated Plants	6.32	13.26	14.00	14.03	14.13	18.47	16.18	22.90	21.69
Cofiring	2.35	10.26	49.74	11.05	14.40	9.17	12.11	6.25	9.05
Solar Thermal	0.54	0.84	0.84	0.97	0.97	1.04	1.04	1.11	1.11
Solar Photovoltaic[6]	0.00	0.36	0.36	0.57	0.57	0.79	0.79	1.02	1.02
Wind	10.51	24.07	50.64	32.95	56.55	43.54	58.02	53.16	60.39
Total	**308.87**	**404.52**	**471.74**	**424.54**	**452.35**	**446.22**	**460.97**	**464.40**	**472.55**
End- Use Sector									
Net Summer Capacity									
Combined Heat and Power[7]									
Municipal Solid Waste	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Biomass	3.91	5.36	5.36	6.44	6.44	7.26	7.26	8.03	8.03
Total	**4.16**	**5.61**	**5.61**	**6.69**	**6.70**	**7.51**	**7.51**	**8.29**	**8.29**
Other End-Use Generators[8]									
Conventional Hydropower[9]	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Photovoltaic	0.04	0.39	0.44	0.42	0.48	0.58	0.63	1.13	1.17
Total	**1.06**	**1.41**	**1.46**	**1.45**	**1.50**	**1.61**	**1.65**	**2.15**	**2.19**
Generation (billion kilowatthours)									
Combined Heat and Power[7]									
Municipal Solid Waste	1.84	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Biomass	28.16	36.63	36.64	42.96	42.98	47.72	47.74	52.26	52.26
Total	**30.00**	**38.73**	**38.74**	**45.06**	**45.08**	**49.82**	**49.84**	**54.36**	**54.36**
Other End-Use Generators[8]									
Conventional Hydropower[9]	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solar Photovoltaic	0.09	0.82	0.93	0.91	1.02	1.26	1.35	2.42	2.51
Total	**4.20**	**4.93**	**5.04**	**5.02**	**5.13**	**5.37**	**5.46**	**6.53**	**6.61**

[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.
[2]Includes hydrothermal resources only (hot water and steam).
[3]Includes landfill gas.
[4]Facilities co-firing biomass and coal are classified as coal.
[5]Includes projections for energy crops after 2010.
[6]Does not include off-grid photovoltaics (PV). See Annual Energy Review 2002 Table 10.6 for estimates of 1989-2001 PV shipments, including exports, for both grid-connected and off-grid applications.
[7]Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors.
[8]Includes 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 2002 are model results and may differ slightly from official EIA data reports. Net summer capacity has been estimated for nonutility generators for AEO2004. Net summer capacity is used to be consistent with electric utility capacity estimates. Additional retirements are determined on the basis of the size and age of the units.
Sources: 2002 capacity: Energy Information Administration (EIA), Form EIA-860: "Annual Electric Generator Report" (preliminary). 2002 generation: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B18. Renewable Energy Consumption by Sector and Source[1]

(Quadrillion Btu per Year)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Marketed Renewable Energy[2]									
Residential	**0.39**	**0.40**	**0.40**	**0.41**	**0.40**	**0.41**	**0.41**	**0.41**	**0.40**
Wood	0.39	0.40	0.40	0.41	0.40	0.41	0.41	0.41	0.40
Commercial	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**	**0.10**
Biomass	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Industrial[3]	**1.66**	**2.00**	**2.00**	**2.26**	**2.26**	**2.48**	**2.48**	**2.70**	**2.70**
Conventional Hydroelectric	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Municipal Solid Waste	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Biomass	1.60	1.95	1.95	2.20	2.20	2.43	2.43	2.65	2.65
Transportation	**0.17**	**0.29**	**0.36**	**0.31**	**0.46**	**0.33**	**0.48**	**0.35**	**0.52**
Ethanol used in E85[4]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethanol used in Gasoline Blending	0.17	0.29	0.36	0.31	0.46	0.33	0.48	0.35	0.52
Electric Generators[5]	**3.69**	**4.68**	**5.35**	**5.08**	**5.37**	**5.47**	**5.61**	**5.79**	**5.85**
Conventional Hydroelectric	2.75	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13
Geothermal	0.30	0.61	0.60	0.90	0.90	1.15	1.13	1.36	1.33
Municipal Solid Waste[6]	0.34	0.39	0.39	0.39	0.40	0.39	0.40	0.39	0.40
Biomass	0.17	0.29	0.69	0.30	0.34	0.33	0.34	0.34	0.35
Dedicated Plants	0.11	0.15	0.13	0.16	0.15	0.21	0.18	0.26	0.24
Cofiring	0.06	0.14	0.56	0.15	0.19	0.12	0.16	0.08	0.11
Solar Thermal	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	0.00	0.00
Wind	0.13	0.25	0.52	0.34	0.58	0.45	0.60	0.55	0.62
Total Marketed Renewable Energy	**6.01**	**7.47**	**8.22**	**8.15**	**8.59**	**8.78**	**9.07**	**9.35**	**9.58**
Sources of Ethanol									
From Corn	0.17	0.29	0.36	0.30	0.45	0.31	0.46	0.31	0.47
From Cellulose	0.00	0.00	0.00	0.01	0.01	0.02	0.02	0.05	0.05
Total	**0.17**	**0.29**	**0.36**	**0.31**	**0.46**	**0.33**	**0.48**	**0.35**	**0.52**
Non-Marketed Renewable Energy[7]									
Selected Consumption									
Residential	**0.02**	**0.03**	**0.03**	**0.04**	**0.04**	**0.04**	**0.04**	**0.05**	**0.05**
Solar Hot Water Heating	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04
Geothermal Heat Pumps	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Solar Photovoltaic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Commercial	**0.02**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**
Solar Thermal	0.02	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	0.00	0.00	0.00	0.01	0.01

[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 10,280 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 B8.

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

[4]Excludes motor gasoline component of E85.

[5]Includes consumption of energy by 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.

[6]Includes landfill gas.

[7]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 2002 are model results and may differ slightly from official EIA data reports.

Sources: 2002 ethanol: Energy Information Administration (EIA), *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, DC, October 2002). 2002 electric generators: EIA, Form EIA-860: "Annual Electric Generator Report" (preliminary). Other 2002 values: EIA, Office of Integrated Analysis and Forecasting. **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Table B19. Carbon Dioxide Emissions by Sector and Source
(Million Metric Tons)

Sector and Source	2002	Projections							
		2010		2015		2020		2025	
		AEO2004	CEB	AEO2004	CEB	AEO2004	CEB	AEO2004	CEB
Residential									
Petroleum	104.0	110.4	110.2	109.1	108.9	107.1	107.0	104.5	104.3
Natural Gas	267.2	300.4	300.4	308.1	308.7	321.2	322.1	330.7	330.8
Coal	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0
Electricity	816.7	905.3	884.4	954.0	937.8	1019.9	1003.0	1106.7	1080.5
Total	**1189.0**	**1317.2**	**1296.3**	**1372.3**	**1356.5**	**1449.2**	**1433.1**	**1543.0**	**1516.6**
Commercial									
Petroleum	52.6	66.2	66.0	68.6	68.3	70.2	69.7	72.2	71.7
Natural Gas	169.4	188.7	189.1	196.5	197.5	207.9	209.3	219.4	220.0
Coal	9.2	9.3	9.3	9.3	9.3	9.2	9.2	9.2	9.2
Electricity	778.0	938.4	919.1	1030.1	1014.4	1135.5	1119.3	1269.2	1242.5
Total	**1009.1**	**1202.5**	**1183.5**	**1304.4**	**1289.4**	**1422.9**	**1407.6**	**1570.1**	**1543.4**
Industrial[1]									
Petroleum	412.8	365.4	365.2	388.2	382.8	408.0	404.5	428.4	422.7
Natural Gas[2]	432.7	522.1	523.7	552.2	555.4	598.6	600.5	639.4	641.3
Coal	185.1	191.9	192.1	187.1	187.3	183.3	183.5	181.1	181.3
Electricity	640.0	710.3	696.4	757.4	746.6	813.8	801.6	900.7	882.5
Total	**1670.6**	**1789.6**	**1777.4**	**1885.0**	**1872.0**	**2003.6**	**1990.1**	**2149.5**	**2127.8**
Transportation									
Petroleum[3]	1811.2	2193.2	2187.7	2406.2	2391.3	2590.9	2574.0	2805.8	2784.7
Natural Gas[4]	35.2	39.5	40.0	42.4	42.1	49.1	49.1	51.3	51.4
Other[5]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	14.2	16.7	16.4	18.1	17.8	19.9	19.6	22.4	22.0
Total	**1860.6**	**2249.5**	**2244.0**	**2466.7**	**2451.2**	**2659.9**	**2642.7**	**2879.5**	**2858.0**
Total Carbon Dioxide Emissions by Delivered Fuel									
Petroleum[3]	2380.5	2735.2	2729.1	2972.0	2951.2	3176.2	3155.2	3410.9	3383.4
Natural Gas	904.4	1050.7	1053.2	1099.2	1103.6	1176.8	1181.0	1240.8	1243.5
Coal	195.4	202.4	202.5	197.5	197.7	193.6	193.9	191.4	191.6
Other[5]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	2249.0	2570.6	2516.3	2759.6	2716.6	2989.0	2943.4	3299.0	3227.4
Total	**5729.3**	**6558.8**	**6501.2**	**7028.4**	**6969.2**	**7535.6**	**7473.5**	**8142.0**	**8045.9**
Electric Power[6]									
Petroleum	72.2	51.0	47.2	78.6	70.3	65.2	60.3	61.6	60.4
Natural Gas	299.1	358.5	344.8	410.9	400.9	463.3	453.7	451.6	455.8
Coal	1877.8	2161.2	2124.3	2270.2	2245.4	2460.5	2429.4	2785.8	2711.2
Total	**2249.0**	**2570.6**	**2516.3**	**2759.6**	**2716.6**	**2989.0**	**2943.4**	**3299.0**	**3227.4**
Total Carbon Dioxide Emissions by Primary Fuel[7]									
Petroleum[3]	2452.7	2786.1	2776.3	3050.6	3021.5	3241.4	3215.5	3472.5	3443.7
Natural Gas	1203.4	1409.2	1398.0	1510.1	1504.5	1640.1	1634.7	1692.4	1699.4
Coal	2073.2	2363.6	2326.8	2467.7	2443.1	2654.1	2623.3	2977.1	2902.8
Other[5]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**5729.4**	**6558.8**	**6501.2**	**7028.4**	**6969.2**	**7535.6**	**7473.5**	**8142.0**	**8045.9**
Carbon Dioxide Emissions (tons per person)	**19.8**	**21.2**	**21.0**	**21.8**	**21.6**	**22.5**	**22.3**	**23.4**	**23.2**

[1]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.
[2]Includes lease and plant fuel.
[3]This includes international bunker fuel, which by convention are excluded from the international accounting of carbon dioxide emissions. In the years from 1990 through 2000, international bunker fuels accounted for 24 to 30 million metric tons of carbon dioxide annually.
[4]Includes pipeline fuel natural gas and compressed natural gas used as vehicle fuel.
[5]Includes methanol and liquid hydrogen.
[6]Includes electricity-only and combined heat and power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Does not include emissions from the nonbiogenic component of municipal solid waste because under international guidelines these are accounted for as waste, not energy.
[7]Emissions from electric power generators are distributed to the primary fuels.
Note: Totals may not equal sum of components due to independent rounding. Data for 2002 are model results and may differ slightly from official EIA data reports.
Sources: 2002 emissions and emission factors: Energy Information Administration (EIA), *Emissions of Greenhouse Gases in the United States 2002,* DOE/EIA-0573(2002) (Washington, DC, October 2003). **Projections:** EIA, AEO2004 National Energy Modeling System runs AEO2004.D101703E, and NRGBILL00.D011304D.

Appendix C

Annual Results of the CEB Case

Table 1. Total Energy Supply and Disposition Summary
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production																								
Crude Oil & Lease Condensate.	11.91	12.04	12.27	12.41	12.59	12.92	12.99	12.90	12.60	12.32	12.10	11.99	11.77	11.69	11.46	11.16	11.15	10.97	10.58	10.22	9.96	10.11	9.98	9.83
Natural Gas Plant Liquids....	2.56	2.35	2.70	3.00	3.03	3.08	3.08	3.09	3.14	3.15	3.15	3.18	3.19	3.21	3.19	3.30	3.43	3.47	3.49	3.44	3.43	3.43	3.46	3.51
Dry Natural Gas.....	19.56	20.06	20.05	20.17	20.40	20.81	20.90	20.98	21.41	21.57	21.60	21.89	22.06	22.23	22.18	23.01	24.04	24.38	24.57	24.20	24.18	24.21	24.48	24.90
Coal.....	22.70	22.64	23.05	23.25	23.44	23.76	23.91	24.32	24.86	25.22	25.40	25.50	25.65	25.89	26.15	26.45	26.73	27.14	27.64	28.11	28.68	29.43	29.89	30.34
Nuclear Power.....	8.15	8.06	8.19	8.26	8.29	8.30	8.32	8.33	8.34	8.35	8.38	8.53	8.71	8.91	8.98	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02
Renewable Energy 1/.....	5.84	5.97	6.44	6.78	7.36	7.68	7.82	7.93	7.85	7.69	7.75	7.89	8.02	8.13	8.25	8.33	8.40	8.50	8.60	8.68	8.78	8.84	8.94	9.06
Other 2/.....	1.13	0.94	0.98	0.50	0.73	0.75	0.95	0.99	0.88	0.67	0.67	0.63	0.75	0.64	0.69	0.90	0.87	0.90	0.91	0.92	0.93	0.94	0.94	0.95
Total.....	71.85	72.07	73.68	74.38	75.84	77.30	77.96	78.53	79.08	78.98	79.06	79.61	80.16	80.70	80.90	82.16	83.64	84.39	84.80	84.58	84.98	85.98	86.71	87.61
Imports																								
Crude Oil 3/.....	19.84	20.68	21.15	21.57	22.06	22.54	22.89	23.49	24.47	25.83	26.82	27.76	28.65	29.18	29.83	30.22	30.29	30.63	31.14	32.06	32.86	33.21	33.53	33.90
Petroleum Products 4/.....	4.75	4.87	5.26	5.39	5.35	5.29	5.48	5.49	5.61	5.49	5.60	5.71	5.72	6.05	6.31	6.49	6.88	7.29	7.81	8.06	8.29	8.49	9.01	9.50
Natural Gas.....	4.10	4.29	4.50	4.76	5.09	5.18	5.65	5.82	5.98	6.40	6.87	6.93	7.07	7.17	7.64	7.50	7.27	7.28	7.37	7.67	7.82	7.93	8.17	8.21
Other Imports 5/.....	0.52	0.69	0.70	0.76	0.79	0.84	0.87	0.92	0.95	0.98	1.00	1.02	1.03	1.05	1.06	1.07	1.09	1.07	1.12	1.13	1.14	1.16	1.17	1.18
Total.....	29.21	30.52	31.61	32.49	33.29	33.84	34.89	35.72	37.00	38.69	40.29	41.42	42.48	43.46	44.83	45.29	45.54	46.27	47.43	48.92	50.12	50.80	51.88	52.79
Exports																								
Petroleum 6/.....	2.03	2.03	2.08	2.07	2.08	2.11	2.12	2.14	2.14	2.11	2.14	2.16	2.16	2.18	2.16	2.14	2.14	2.13	2.12	2.12	2.12	2.13	2.13	2.14
Natural Gas.....	0.52	0.70	0.81	0.82	0.84	0.86	0.88	0.91	0.92	0.92	0.92	0.92	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.97	0.96	0.95	0.94	0.93
Coal.....	1.03	1.07	1.04	1.02	1.00	0.98	0.95	0.92	0.89	0.84	0.80	0.78	0.79	0.80	0.81	0.81	0.82	0.77	0.74	0.68	0.68	0.69	0.68	0.59
Total.....	3.58	3.79	3.93	3.90	3.92	3.94	3.96	3.97	3.95	3.88	3.86	3.86	3.86	3.89	3.90	3.89	3.90	3.86	3.83	3.77	3.77	3.76	3.76	3.65
Discrepancy 7/.....	-0.24	0.70	1.15	0.22	0.25	0.28	0.28	0.30	0.30	0.32	0.32	0.30	0.35	0.43	0.46	0.46	0.45	0.49	0.50	0.54	0.59	0.62	0.63	0.63
Consumption																								
Petroleum Products 8/.....	38.11	38.73	39.18	40.48	41.32	42.08	42.85	43.37	44.09	44.85	45.71	46.63	47.40	47.99	48.67	49.28	49.86	50.45	51.12	51.85	52.57	53.24	53.97	54.73
Natural Gas.....	23.37	22.63	23.78	24.19	24.73	25.22	25.77	26.02	26.61	27.18	27.70	28.05	28.38	28.63	29.04	29.72	30.50	30.85	31.11	31.05	31.19	31.35	31.87	32.34
Coal.....	22.18	22.57	22.52	22.92	23.17	23.54	23.77	24.24	24.84	25.28	25.52	25.67	25.82	26.07	26.33	26.66	26.96	27.42	27.98	28.54	29.13	29.90	30.38	30.94
Nuclear Power.....	8.15	8.06	8.19	8.26	8.29	8.30	8.32	8.33	8.34	8.35	8.38	8.53	8.71	8.91	8.98	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02
Renewable Energy 1/.....	5.84	5.97	6.44	6.78	7.36	7.68	7.82	7.93	7.85	7.69	7.75	7.89	8.02	8.13	8.25	8.33	8.40	8.51	8.60	8.68	8.78	8.84	8.94	9.06
Other 9/.....	0.07	0.13	0.10	0.11	0.09	0.09	0.09	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.08	0.06	0.07	0.06	0.04	0.04	0.03	0.02
Total.....	97.72	98.10	100.2	102.7	105.0	106.9	108.6	110.0	111.8	113.5	115.2	116.9	118.4	119.8	121.4	123.1	124.8	126.3	127.9	129.2	130.7	132.4	134.2	136.1
Net Imports - Petroleum.....	22.56	23.52	24.33	24.89	25.33	25.72	26.24	26.84	27.93	29.20	30.28	31.31	32.21	33.06	33.98	34.57	35.04	35.79	36.83	37.99	39.03	39.58	40.41	41.26
Prices (2002 dollars per unit)																								
World Oil Price ($ per bbl) 10/	23.68	27.25	23.84	23.32	23.48	23.67	23.85	24.01	24.18	24.39	24.57	24.77	24.97	25.14	25.34	25.52	25.71	25.89	26.07	26.26	26.44	26.62	26.80	27.01
Gas Wellhead Price($ / Mcf) 11/	2.95	4.88	3.87	3.50	3.31	3.37	3.57	3.43	3.41	3.59	3.76	3.88	3.95	4.10	4.14	4.05	3.95	4.03	4.16	4.39	4.47	4.51	4.43	4.40
Coal Minemouth Price ($ / ton).	17.90	17.82	17.60	17.20	16.98	16.79	16.78	16.67	16.87	16.93	16.75	16.63	16.44	16.46	16.34	16.07	16.29	16.35	16.48	16.47	16.54	16.40	16.45	16.42
Aver. Electricity (cents / Kwh)	7.2	7.1	6.9	6.8	6.7	6.5	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.7	6.8	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.8	6.8

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 2. Energy Consumption by Sector and Source
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Energy Consumption																								
Residential																								
Distillate Fuel	0.89	0.92	0.95	0.95	0.95	0.95	0.94	0.94	0.93	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
Kerosene	0.07	0.08	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09
Liquefied Petroleum Gas	0.53	0.50	0.51	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.57	0.57	0.58	0.58	0.59	0.59	0.60	0.61	0.61	0.62	0.62	0.63	0.63	0.64
Petroleum Subtotal	1.48	1.51	1.58	1.59	1.60	1.60	1.61	1.60	1.60	1.60	1.60	1.59	1.59	1.58	1.58	1.57	1.57	1.56	1.56	1.55	1.55	1.54	1.54	1.53
Natural Gas	5.06	5.21	5.32	5.36	5.45	5.52	5.58	5.63	5.69	5.73	5.77	5.78	5.81	5.85	5.90	5.93	5.99	6.04	6.10	6.11	6.13	6.17	6.23	6.26
Coal	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
Renewable Energy 1/	0.39	0.41	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.40
Electricity	4.33	4.37	4.44	4.50	4.57	4.64	4.73	4.79	4.86	4.93	5.01	5.06	5.14	5.21	5.29	5.35	5.43	5.50	5.59	5.65	5.71	5.78	5.88	5.94
Delivered Energy	11.28	11.52	11.76	11.86	12.03	12.18	12.34	12.43	12.56	12.67	12.80	12.86	12.96	13.06	13.19	13.27	13.41	13.53	13.67	13.72	13.81	13.91	14.06	14.15
Electricity Related Losses	9.60	9.70	9.79	9.90	10.04	10.18	10.33	10.36	10.47	10.55	10.68	10.76	10.87	10.96	11.08	11.15	11.21	11.32	11.44	11.47	11.57	11.66	11.80	11.87
Total	20.88	21.22	21.55	21.76	22.07	22.36	22.67	22.78	23.03	23.22	23.48	23.61	23.83	24.02	24.27	24.42	24.62	24.85	25.11	25.19	25.37	25.57	25.86	26.02
Commercial																								
Distillate Fuel	0.49	0.57	0.56	0.58	0.59	0.60	0.61	0.61	0.62	0.63	0.63	0.64	0.64	0.65	0.65	0.66	0.66	0.66	0.67	0.67	0.68	0.68	0.69	0.69
Residual Fuel	0.08	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Kerosene	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	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Liquefied Petroleum Gas	0.09	0.09	0.09	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	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	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
Petroleum Subtotal	0.72	0.85	0.85	0.87	0.88	0.89	0.90	0.91	0.92	0.92	0.93	0.94	0.94	0.95	0.95	0.96	0.96	0.96	0.97	0.97	0.98	0.98	0.99	0.99
Natural Gas	3.21	3.26	3.20	3.26	3.36	3.42	3.47	3.52	3.58	3.63	3.66	3.68	3.71	3.74	3.77	3.82	3.87	3.92	3.96	3.99	4.02	4.06	4.11	4.17
Coal	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Renewable Energy 3/	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Electricity	4.12	4.14	4.28	4.42	4.56	4.68	4.81	4.92	5.05	5.17	5.29	5.41	5.52	5.64	5.74	5.86	5.99	6.12	6.24	6.36	6.47	6.58	6.70	6.83
Delivered Energy	8.25	8.44	8.52	8.76	8.99	9.20	9.37	9.55	9.74	9.92	10.07	10.22	10.38	10.52	10.67	10.83	11.02	11.20	11.37	11.52	11.67	11.82	11.99	12.19
Electricity Related Losses	9.15	9.18	9.42	9.72	10.02	10.27	10.50	10.66	10.88	11.07	11.28	11.49	11.69	11.86	12.03	12.21	12.38	12.58	12.76	12.93	13.09	13.26	13.45	13.66
Total	17.40	17.61	17.94	18.48	19.01	19.47	19.87	20.21	20.62	20.99	21.35	21.71	22.06	22.38	22.69	23.05	23.39	23.78	24.13	24.45	24.76	25.08	25.44	25.84
Industrial 4/																								
Distillate Fuel	1.16	1.17	1.14	1.15	1.15	1.16	1.16	1.16	1.17	1.19	1.21	1.23	1.25	1.26	1.28	1.29	1.31	1.32	1.34	1.35	1.37	1.39	1.41	1.43
Liquefied Petroleum Gas	2.22	2.12	2.16	2.21	2.24	2.29	2.32	2.33	2.36	2.39	2.43	2.48	2.50	2.53	2.57	2.61	2.66	2.70	2.74	2.78	2.81	2.85	2.89	2.94
Petrochemical Feedstocks	1.22	1.27	1.28	1.30	1.32	1.34	1.34	1.33	1.35	1.37	1.39	1.41	1.42	1.43	1.45	1.48	1.50	1.52	1.54	1.55	1.57	1.58	1.60	1.62
Residual Fuel	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23
Motor Gasoline 2/	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19
Other Petroleum 5/	4.03	4.05	3.96	4.23	4.32	4.38	4.41	4.37	4.38	4.38	4.42	4.51	4.60	4.61	4.67	4.72	4.78	4.81	4.88	4.95	4.99	5.04	5.05	5.08
Petroleum Subtotal	9.00	8.98	8.90	9.26	9.40	9.53	9.61	9.57	9.63	9.71	9.82	10.01	10.15	10.23	10.36	10.50	10.64	10.74	10.89	11.03	11.16	11.28	11.37	11.48
Natural Gas	7.43	7.41	7.76	7.94	8.10	8.22	8.29	8.45	8.63	8.80	8.91	9.00	9.08	9.18	9.29	9.47	9.65	9.76	9.87	9.94	10.07	10.23	10.41	10.60
Lease and Plant Fuel 6/	1.35	1.03	1.02	1.09	1.15	1.22	1.28	1.34	1.42	1.43	1.44	1.45	1.47	1.48	1.48	1.54	1.62	1.64	1.65	1.64	1.65	1.66	1.68	1.70
Natural Gas Subtotal	8.78	8.43	8.78	9.03	9.25	9.44	9.57	9.79	10.05	10.23	10.34	10.46	10.54	10.66	10.77	11.01	11.27	11.40	11.52	11.58	11.72	11.89	12.08	12.31
Metallurgical Coal	0.62	0.68	0.69	0.68	0.68	0.67	0.66	0.66	0.65	0.63	0.62	0.61	0.59	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.50	0.49	0.48	0.47
Steam Coal	1.47	1.40	1.40	1.41	1.41	1.41	1.41	1.40	1.41	1.41	1.42	1.42	1.43	1.43	1.43	1.44	1.44	1.44	1.45	1.45	1.45	1.46	1.46	1.47
Net Coal Coke Imports	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Coal Subtotal	2.12	2.11	2.11	2.11	2.10	2.09	2.08	2.07	2.07	2.06	2.05	2.04	2.03	2.01	2.00	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.95
Renewable Energy 7/	1.66	1.66	1.72	1.79	1.84	1.87	1.91	1.95	2.00	2.05	2.10	2.16	2.21	2.26	2.30	2.35	2.40	2.44	2.48	2.52	2.56	2.60	2.65	2.70
Electricity	3.39	3.34	3.42	3.51	3.59	3.67	3.72	3.77	3.83	3.89	3.95	4.03	4.09	4.15	4.22	4.29	4.36	4.41	4.47	4.53	4.60	4.68	4.76	4.85
Delivered Energy	24.94	24.51	24.94	25.71	26.18	26.60	26.89	27.15	27.57	27.94	28.27	28.69	29.01	29.30	29.66	30.15	30.67	30.97	31.34	31.62	31.99	32.40	32.81	33.29
Electricity Related Losses	7.53	7.40	7.54	7.73	7.90	8.04	8.13	8.15	8.24	8.33	8.44	8.55	8.64	8.73	8.83	8.94	9.02	9.07	9.14	9.21	9.32	9.43	9.55	9.70
Total	32.47	31.91	32.48	33.43	34.08	34.65	35.01	35.30	35.81	36.27	36.71	37.24	37.66	38.03	38.48	39.09	39.69	40.03	40.48	40.83	41.31	41.84	42.36	42.99

Table 2. Energy Consumption by Sector and Source (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Transportation																								
Distillate Fuel 8/	5.12	5.16	5.37	5.58	5.76	5.93	6.08	6.24	6.42	6.60	6.78	6.95	7.11	7.26	7.41	7.58	7.74	7.87	8.03	8.17	8.35	8.53	8.73	8.95
Jet Fuel 9/	3.34	3.26	3.34	3.45	3.56	3.65	3.74	3.83	3.93	4.01	4.11	4.20	4.29	4.36	4.42	4.49	4.56	4.63	4.69	4.75	4.80	4.84	4.89	4.92
Motor Gasoline 2/	16.62	16.95	17.54	18.02	18.44	18.79	19.14	19.51	19.87	20.21	20.56	20.94	21.25	21.55	21.84	22.13	22.42	22.71	23.01	23.34	23.68	24.02	24.40	24.82
Residual Fuel	0.71	0.78	0.78	0.78	0.79	0.79	0.79	0.79	0.79	0.80	0.80	0.80	0.80	0.80	0.81	0.81	0.81	0.81	0.82	0.82	0.82	0.82	0.82	0.83
Liquefied Petroleum Gas	0.02	0.02	0.03	0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.09
Other Petroleum 10/	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.27	0.27	0.28	0.28	0.29	0.29	0.30	0.30	0.31	0.31	0.31	0.32
Petroleum Subtotal	26.06	26.41	27.30	28.11	28.83	29.45	30.05	30.67	31.33	31.94	32.57	33.22	33.79	34.31	34.81	35.36	35.89	36.40	36.91	37.45	38.02	38.61	39.24	39.93
Pipeline Fuel Natural Gas	0.65	0.68	0.67	0.67	0.67	0.68	0.68	0.68	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.76	0.81	0.82	0.83	0.82	0.82	0.83	0.85	0.86
Compressed Natural Gas	0.01	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11
Renewable Energy (E85) 11/	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
Liquid Hydrogen	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
Electricity	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12
Delivered Energy	26.79	27.18	28.07	28.89	29.62	30.25	30.87	31.50	32.18	32.80	33.44	34.10	34.68	35.21	35.71	36.31	36.90	37.42	37.95	38.49	39.07	39.66	40.32	41.03
Electricity Related Losses	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.24	0.24
Total	26.96	27.35	28.24	29.07	29.81	30.44	31.06	31.69	32.37	32.99	33.64	34.30	34.88	35.42	35.93	36.52	37.12	37.64	38.18	38.72	39.30	39.90	40.55	41.27
Delivered Energy Consumption, All Sectors																								
Distillate Fuel	7.66	7.83	8.02	8.26	8.46	8.63	8.79	8.94	9.15	9.35	9.54	9.73	9.90	10.06	10.22	10.40	10.57	10.71	10.88	11.04	11.23	11.43	11.64	11.88
Kerosene	0.09	0.11	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13
Jet Fuel 9/	3.34	3.26	3.34	3.45	3.56	3.65	3.74	3.83	3.93	4.01	4.11	4.20	4.29	4.36	4.42	4.49	4.56	4.63	4.69	4.75	4.80	4.84	4.89	4.92
Liquefied Petroleum Gas	2.86	2.73	2.79	2.87	2.91	2.97	3.01	3.03	3.07	3.11	3.16	3.21	3.24	3.28	3.33	3.38	3.43	3.48	3.53	3.57	3.61	3.66	3.71	3.76
Motor Gasoline 2/	16.83	17.16	17.74	18.22	18.65	19.00	19.35	19.71	20.08	20.42	20.78	21.15	21.47	21.77	22.06	22.35	22.64	22.94	23.24	23.57	23.91	24.25	24.64	25.06
Petrochemical Feedstocks	1.22	1.27	1.28	1.30	1.32	1.34	1.34	1.33	1.35	1.37	1.39	1.41	1.42	1.43	1.45	1.48	1.50	1.52	1.54	1.55	1.57	1.58	1.60	1.62
Residual Fuel	1.00	1.10	1.12	1.12	1.12	1.13	1.13	1.13	1.13	1.14	1.14	1.15	1.15	1.15	1.16	1.16	1.16	1.16	1.17	1.17	1.18	1.18	1.18	1.18
Other Petroleum 12/	4.26	4.28	4.19	4.46	4.55	4.60	4.64	4.60	4.61	4.62	4.66	4.75	4.84	4.86	4.92	4.98	5.05	5.08	5.15	5.22	5.28	5.32	5.34	5.37
Petroleum Subtotal	37.26	37.74	38.63	39.83	40.71	41.47	42.17	42.75	43.47	44.17	44.92	45.76	46.47	47.07	47.71	48.39	49.06	49.67	50.33	51.01	51.71	52.41	53.14	53.94
Natural Gas	15.71	15.90	16.31	16.60	16.94	17.20	17.39	17.66	17.97	18.22	18.41	18.54	18.68	18.85	19.05	19.30	19.60	19.82	20.03	20.14	20.33	20.56	20.85	21.14
Lease and Plant Fuel 6/	1.35	1.03	1.02	1.09	1.15	1.22	1.28	1.34	1.42	1.43	1.44	1.45	1.47	1.48	1.48	1.54	1.62	1.64	1.65	1.64	1.65	1.66	1.68	1.70
Pipeline Natural Gas	0.65	0.68	0.67	0.67	0.67	0.68	0.68	0.68	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.76	0.81	0.82	0.83	0.82	0.82	0.83	0.85	0.86
Natural Gas Subtotal	17.72	17.60	18.00	18.35	18.76	19.10	19.35	19.68	20.08	20.35	20.55	20.71	20.86	21.04	21.24	21.60	22.03	22.28	22.51	22.60	22.79	23.05	23.37	23.70
Metallurgical Coal	0.62	0.68	0.69	0.68	0.68	0.67	0.66	0.66	0.65	0.63	0.62	0.61	0.59	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.50	0.49	0.48	0.47
Steam Coal	1.58	1.51	1.51	1.52	1.52	1.52	1.52	1.51	1.52	1.52	1.53	1.53	1.54	1.54	1.54	1.55	1.55	1.55	1.56	1.56	1.56	1.57	1.57	1.58
Net Coal Coke Imports	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Coal Subtotal	2.23	2.22	2.22	2.22	2.21	2.20	2.19	2.19	2.18	2.17	2.16	2.15	2.14	2.12	2.11	2.11	2.10	2.09	2.08	2.07	2.07	2.06	2.06	2.06
Renewable Energy 13/	2.15	2.17	2.23	2.29	2.34	2.38	2.41	2.45	2.50	2.55	2.61	2.66	2.72	2.76	2.81	2.86	2.91	2.95	2.99	3.03	3.07	3.11	3.16	3.21
Liquid Hydrogen	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
Electricity	11.92	11.93	12.23	12.52	12.80	13.08	13.34	13.56	13.82	14.08	14.34	14.59	14.85	15.09	15.35	15.61	15.88	16.14	16.41	16.65	16.89	17.16	17.45	17.73
Delivered Energy	71.27	71.65	73.30	75.22	76.83	78.23	79.46	80.63	82.05	83.32	84.58	85.87	87.02	88.09	89.23	90.57	92.00	93.12	94.34	95.36	96.53	97.80	99.2	100.6
Electricity Related Losses	26.45	26.44	26.92	27.53	28.13	28.68	29.15	29.35	29.78	30.15	30.59	31.00	31.40	31.75	32.14	32.52	32.82	33.19	33.56	33.83	34.21	34.59	35.03	35.47
Total	97.72	98.10	100.2	102.7	105.0	106.9	108.6	110.0	111.8	113.5	115.2	116.9	118.4	119.8	121.4	123.1	124.8	126.3	127.9	129.2	130.7	132.4	134.2	136.1
Electric Generators 14/																								
Distillate Fuel	0.16	0.17	0.17	0.18	0.18	0.18	0.20	0.16	0.14	0.17	0.24	0.30	0.34	0.34	0.35	0.31	0.24	0.23	0.25	0.28	0.30	0.28	0.28	0.24
Residual Fuel	0.69	0.82	0.38	0.47	0.43	0.44	0.48	0.46	0.48	0.51	0.56	0.58	0.60	0.58	0.60	0.58	0.56	0.56	0.54	0.56	0.56	0.55	0.55	0.55
Petroleum Subtotal	0.85	0.99	0.55	0.65	0.60	0.61	0.68	0.62	0.61	0.68	0.79	0.88	0.93	0.93	0.96	0.89	0.80	0.79	0.79	0.84	0.87	0.83	0.83	0.79
Natural Gas	5.65	5.03	5.79	5.84	5.97	6.12	6.43	6.34	6.53	6.83	7.15	7.34	7.52	7.59	7.80	8.11	8.47	8.57	8.59	8.44	8.40	8.30	8.50	8.63
Steam Coal	19.96	20.35	20.31	20.70	20.96	21.34	21.58	22.05	22.66	23.12	23.36	23.52	23.68	23.94	24.22	24.55	24.86	25.33	25.90	26.46	27.06	27.84	28.32	28.88
Nuclear Power	8.15	8.06	8.19	8.26	8.29	8.30	8.32	8.33	8.34	8.35	8.38	8.53	8.71	8.91	8.98	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02
Renewable Energy/Other 15/	3.69	3.80	4.21	4.49	5.02	5.30	5.40	5.48	5.35	5.14	5.15	5.23	5.30	5.37	5.44	5.47	5.49	5.56	5.61	5.66	5.71	5.73	5.78	5.85
Electricity Imports	0.07	0.13	0.10	0.11	0.09	0.09	0.09	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.08	0.06	0.07	0.06	0.04	0.04	0.03	0.02
Total	38.36	38.37	39.14	40.05	40.93	41.76	42.49	42.91	43.60	44.23	44.94	45.60	46.25	46.85	47.50	48.13	48.71	49.33	49.97	50.48	51.10	51.75	52.48	53.20

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 2. Energy Consumption by Sector and Source (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Energy Consumption																								
Distillate Fuel	7.82	8.00	8.19	8.43	8.63	8.81	8.99	9.10	9.28	9.52	9.77	10.03	10.24	10.41	10.58	10.71	10.81	10.94	11.13	11.32	11.53	11.71	11.92	12.12
Kerosene	0.09	0.11	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.14	0.13
Jet Fuel 9/	3.34	3.26	3.34	3.45	3.56	3.65	3.74	3.83	3.93	4.01	4.11	4.20	4.29	4.36	4.42	4.49	4.56	4.63	4.69	4.75	4.80	4.84	4.89	4.92
Liquefied Petroleum Gas	2.86	2.73	2.79	2.87	2.91	2.97	3.01	3.03	3.07	3.11	3.16	3.21	3.24	3.28	3.33	3.38	3.43	3.48	3.53	3.57	3.61	3.66	3.71	3.76
Motor Gasoline 2/	16.83	17.16	17.74	18.22	18.65	19.00	19.35	19.71	20.08	20.42	20.78	21.15	21.47	21.77	22.06	22.35	22.64	22.94	23.24	23.57	23.91	24.25	24.64	25.06
Petrochemical Feedstocks	1.22	1.27	1.28	1.30	1.32	1.34	1.34	1.33	1.35	1.37	1.39	1.41	1.42	1.43	1.45	1.48	1.50	1.52	1.54	1.55	1.57	1.58	1.60	1.62
Residual Fuel	1.69	1.93	1.50	1.59	1.55	1.56	1.61	1.59	1.61	1.65	1.70	1.73	1.74	1.73	1.76	1.74	1.72	1.72	1.71	1.73	1.74	1.73	1.73	1.73
Other Petroleum 12/	4.26	4.28	4.19	4.46	4.55	4.60	4.64	4.60	4.61	4.62	4.66	4.75	4.84	4.86	4.92	4.98	5.05	5.08	5.15	5.22	5.28	5.32	5.34	5.37
Petroleum Subtotal	38.11	38.73	39.18	40.48	41.32	42.08	42.85	43.37	44.09	44.85	45.71	46.63	47.40	47.99	48.67	49.28	49.86	50.45	51.12	51.85	52.57	53.24	53.97	54.73
Natural Gas	21.36	20.93	22.10	22.43	22.91	23.32	23.82	23.99	24.50	25.05	25.56	25.88	26.20	26.44	26.85	27.42	28.07	28.39	28.63	28.59	28.73	28.86	29.35	29.78
Lease and Plant Fuel 6/	1.35	1.03	1.02	1.09	1.15	1.22	1.28	1.34	1.42	1.43	1.44	1.45	1.47	1.48	1.48	1.54	1.62	1.64	1.65	1.64	1.65	1.66	1.68	1.70
Pipeline Natural Gas	0.65	0.68	0.67	0.67	0.67	0.68	0.68	0.68	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.76	0.81	0.82	0.83	0.82	0.82	0.83	0.85	0.86
Natural Gas Subtotal	23.37	22.63	23.78	24.19	24.73	25.22	25.77	26.02	26.61	27.18	27.70	28.05	28.38	28.63	29.04	29.72	30.50	30.85	31.11	31.05	31.19	31.35	31.87	32.34
Metallurgical Coal	0.62	0.68	0.69	0.68	0.68	0.67	0.66	0.66	0.65	0.63	0.62	0.61	0.59	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.50	0.49	0.48	0.47
Steam Coal	21.54	21.87	21.81	22.22	22.48	22.86	23.09	23.57	24.18	24.64	24.89	25.05	25.22	25.48	25.76	26.09	26.41	26.88	27.45	28.02	28.63	29.41	29.89	30.46
Net Coal Coke Imports	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Coal Subtotal	22.18	22.57	22.52	22.92	23.17	23.54	23.77	24.24	24.84	25.28	25.52	25.67	25.82	26.07	26.33	26.66	26.96	27.42	27.98	28.54	29.13	29.90	30.38	30.94
Nuclear Power	8.15	8.06	8.19	8.26	8.29	8.30	8.32	8.33	8.34	8.35	8.38	8.53	8.71	8.91	8.98	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02	9.02
Renewable Energy 16/	5.84	5.97	6.44	6.78	7.36	7.68	7.82	7.93	7.85	7.69	7.75	7.89	8.02	8.13	8.25	8.33	8.40	8.51	8.60	8.68	8.78	8.84	8.94	9.06
Liquid Hydrogen	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
Electricity Imports	0.07	0.13	0.10	0.11	0.09	0.09	0.09	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.08	0.06	0.07	0.06	0.04	0.04	0.03	0.02
Total	97.72	98.10	100.2	102.7	105.0	106.9	108.6	110.0	111.8	113.5	115.2	116.9	118.4	119.8	121.4	123.1	124.8	126.3	127.9	129.2	130.7	132.4	134.2	136.1
Energy Use & Related Statistics																								
Delivered Energy Use	71.27	71.65	73.30	75.22	76.83	78.23	79.46	80.63	82.05	83.32	84.58	85.87	87.02	88.09	89.23	90.57	92.00	93.12	94.34	95.36	96.53	97.80	99.2	100.6
Total Energy Use	97.72	98.10	100.2	102.7	105.0	106.9	108.6	110.0	111.8	113.5	115.2	116.9	118.4	119.8	121.4	123.1	124.8	126.3	127.9	129.2	130.7	132.4	134.2	136.1
Population (millions)	288.9	291.7	294.2	296.8	299.3	301.8	304.3	306.8	309.3	311.8	314.3	316.9	319.4	321.9	324.5	327.0	329.5	332.1	334.6	337.2	339.7	342.3	344.9	347.5
US GDP (billion 1996 dollars)	9440	9657	10019	10401	10768	11137	11501	11844	12194	12543	12902	13310	13715	14101	14498	14926	15362	15763	16192	16591	17034	17495	17973	18516
Carbon Dioxide Emissions (million metric tons carbon dioxide equivalen	5729	5738	5819	5961	6068	6177	6277	6369	6501	6621	6726	6816	6897	6969	7059	7163	7266	7366	7474	7569	7678	7801	7920	8046

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 3. Energy Prices by Sector and Source
(2002 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residential	14.74	15.56	15.18	14.70	14.38	14.21	14.25	14.20	14.16	14.26	14.46	14.56	14.62	14.75	14.84	14.77	14.73	14.77	14.91	15.07	15.21	15.22	15.26	15.28
Primary Energy 1/	8.14	9.56	9.26	8.68	8.42	8.34	8.37	8.23	8.14	8.28	8.40	8.51	8.56	8.65	8.69	8.63	8.55	8.59	8.68	8.83	8.94	8.96	8.91	8.88
Petroleum Products 2/	9.87	11.53	10.83	9.81	9.80	9.79	9.86	9.90	9.91	9.99	10.07	10.20	10.26	10.40	10.51	10.57	10.64	10.75	10.88	10.95	11.02	11.08	11.16	11.26
Distillate Fuel	8.23	9.11	8.31	8.02	7.93	7.87	7.89	7.88	7.84	7.85	7.89	7.97	8.00	8.08	8.13	8.20	8.26	8.32	8.39	8.42	8.43	8.43	8.47	8.53
Liquefied Petroleum Gas	12.92	16.49	16.15	13.59	13.65	13.65	13.77	13.83	13.88	14.03	14.13	14.29	14.33	14.51	14.62	14.60	14.61	14.70	14.84	14.91	15.00	15.06	15.11	15.18
Natural Gas	7.65	9.01	8.81	8.36	8.03	7.93	7.96	7.76	7.66	7.82	7.95	8.06	8.11	8.19	8.22	8.13	8.02	8.05	8.14	8.31	8.43	8.44	8.36	8.32
Electricity	24.73	24.80	24.39	24.01	23.58	23.23	23.21	23.23	23.19	23.18	23.39	23.38	23.37	23.45	23.54	23.40	23.36	23.33	23.45	23.54	23.66	23.57	23.66	23.68
Commercial	14.68	14.96	14.52	14.06	13.67	13.48	13.59	13.66	13.69	13.82	14.07	14.10	14.22	14.40	14.55	14.51	14.51	14.56	14.71	14.87	15.02	15.02	15.10	15.14
Primary Energy 1/	6.35	7.82	7.31	6.86	6.63	6.58	6.64	6.52	6.47	6.60	6.72	6.83	6.88	6.98	7.01	6.96	6.90	6.94	7.03	7.17	7.28	7.29	7.24	7.22
Petroleum Products 2/	6.88	7.62	7.01	6.46	6.35	6.34	6.37	6.36	6.35	6.39	6.42	6.48	6.50	6.56	6.62	6.66	6.72	6.80	6.86	6.88	6.90	6.91	6.94	6.99
Distillate Fuel	6.07	6.71	6.12	5.62	5.52	5.49	5.50	5.49	5.46	5.49	5.52	5.58	5.60	5.66	5.72	5.78	5.86	5.95	6.01	6.04	6.05	6.05	6.09	6.14
Residual Fuel	4.21	4.97	4.13	4.01	4.02	4.05	4.08	4.10	4.13	4.16	4.20	4.23	4.26	4.28	4.31	4.34	4.36	4.39	4.41	4.44	4.47	4.50	4.52	4.55
Natural Gas	6.37	8.06	7.57	7.13	6.85	6.79	6.86	6.70	6.63	6.79	6.93	7.06	7.12	7.22	7.26	7.18	7.08	7.12	7.21	7.38	7.51	7.52	7.45	7.40
Electricity	22.83	22.19	21.51	20.95	20.37	19.97	20.03	20.22	20.26	20.31	20.57	20.44	20.54	20.70	20.88	20.78	20.77	20.77	20.90	21.00	21.14	21.06	21.20	21.24
Industrial 3/	6.31	7.28	6.69	6.38	6.28	6.32	6.43	6.43	6.42	6.51	6.62	6.70	6.77	6.89	6.97	6.97	6.97	7.03	7.14	7.25	7.32	7.34	7.35	7.37
Primary Energy	4.77	6.08	5.42	5.09	5.01	5.07	5.17	5.14	5.14	5.23	5.32	5.43	5.49	5.59	5.65	5.65	5.65	5.73	5.83	5.95	6.02	6.04	6.03	6.04
Petroleum Products 2/	6.35	7.50	7.09	6.66	6.66	6.72	6.78	6.82	6.84	6.91	6.96	7.03	7.07	7.16	7.24	7.29	7.35	7.46	7.57	7.62	7.65	7.67	7.71	7.76
Distillate Fuel	6.21	6.87	6.27	5.79	5.69	5.68	5.68	5.67	5.68	5.71	5.74	5.79	5.79	5.85	5.90	5.97	6.08	6.19	6.25	6.28	6.29	6.29	6.33	6.38
Liquefied Petroleum Gas	8.28	10.56	10.33	9.27	9.40	9.50	9.62	9.67	9.72	9.86	9.98	10.14	10.17	10.36	10.44	10.47	10.53	10.60	10.68	10.75	10.83	10.89	10.95	11.03
Residual Fuel	3.89	4.60	3.82	3.61	3.63	3.66	3.69	3.72	3.74	3.78	3.81	3.84	3.87	3.90	3.93	3.96	3.98	4.01	4.03	4.06	4.09	4.12	4.14	4.18
Natural Gas 4/	3.75	5.58	4.49	4.14	3.95	4.00	4.17	4.07	4.05	4.21	4.35	4.49	4.58	4.71	4.75	4.68	4.61	4.66	4.76	4.96	5.07	5.09	5.02	4.99
Metallurgical Coal	1.87	2.02	2.01	1.99	1.98	1.96	1.96	1.95	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.88	1.88	1.87	1.84	1.82	1.80	1.78	1.77	1.76
Steam Coal	1.52	1.63	1.60	1.59	1.58	1.57	1.57	1.57	1.57	1.57	1.56	1.56	1.55	1.55	1.54	1.53	1.53	1.53	1.54	1.54	1.53	1.53	1.52	1.51
Electricity	14.74	13.93	13.65	13.47	13.21	13.08	13.23	13.33	13.26	13.23	13.41	13.35	13.43	13.58	13.73	13.68	13.67	13.67	13.77	13.82	13.90	13.83	13.93	13.94
Transportation	9.91	11.12	10.17	10.35	10.36	10.45	10.51	10.50	10.51	10.61	10.62	10.63	10.62	10.69	10.69	10.65	10.68	10.67	10.66	10.68	10.72	10.79	10.81	10.84
Primary Energy	9.88	11.09	10.14	10.32	10.33	10.42	10.49	10.47	10.49	10.59	10.59	10.60	10.59	10.66	10.66	10.63	10.65	10.64	10.64	10.65	10.69	10.76	10.78	10.82
Petroleum Products 2/	9.88	11.09	10.14	10.32	10.33	10.42	10.49	10.47	10.49	10.59	10.60	10.60	10.59	10.66	10.66	10.63	10.65	10.65	10.64	10.65	10.69	10.76	10.78	10.82
Distillate Fuel 5/	9.41	10.41	9.50	9.62	9.91	10.14	10.13	10.06	10.12	10.22	10.22	10.20	10.20	10.19	10.17	10.17	10.14	10.08	9.99	10.01	10.04	10.06	10.06	10.06
Jet Fuel 6/	5.97	6.72	6.33	6.02	5.78	5.70	5.72	5.74	5.77	5.84	5.84	5.88	5.85	5.86	5.88	5.91	5.98	6.03	6.04	6.07	6.10	6.12	6.14	6.18
Motor Gasoline 7/	11.15	12.54	11.42	11.74	11.71	11.80	11.90	11.89	11.89	11.99	12.01	12.01	12.00	12.12	12.12	12.06	12.09	12.09	12.11	12.11	12.15	12.24	12.26	12.30
Residual Fuel	3.77	4.45	3.70	3.48	3.50	3.53	3.55	3.57	3.60	3.63	3.66	3.69	3.72	3.74	3.78	3.80	3.83	3.86	3.88	3.91	3.94	3.97	3.99	4.02
Liquefied Petroleum Gas8/	15.00	16.47	16.46	14.80	14.83	14.83	14.91	14.93	14.95	15.06	15.13	15.25	15.26	15.42	15.55	15.42	15.33	15.39	15.58	15.62	15.72	15.75	15.76	15.81
Natural Gas 9/	7.38	9.41	8.25	7.91	7.82	7.96	8.21	8.19	8.25	8.45	8.63	8.79	8.87	8.98	9.03	8.96	8.85	8.88	8.95	9.11	9.22	9.22	9.14	9.08
Ethanol (E85) 10/	15.19	16.83	16.83	16.81	17.01	17.36	17.49	17.46	17.61	21.18	21.39	21.40	21.39	21.22	21.20	21.12	21.07	21.04	21.04	21.05	21.29	21.63	21.81	22.06
Electricity	20.89	21.15	20.59	20.11	19.55	19.22	19.31	19.43	19.46	19.55	19.80	19.89	19.91	19.96	20.05	19.91	19.81	19.74	19.79	19.83	19.88	19.75	19.79	19.74

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 3. Energy Prices by Sector and Source (Continued)
(2002 Dollars per Million Btu, Unless Otherwise Noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Average End-Use Energy	10.10	11.08	10.41	10.23	10.11	10.11	10.20	10.20	10.21	10.31	10.41	10.45	10.49	10.60	10.66	10.63	10.63	10.66	10.73	10.81	10.89	10.92	10.95	10.97
Primary Energy	7.70	9.00	8.28	8.15	8.10	8.15	8.24	8.21	8.22	8.33	8.40	8.46	8.49	8.59	8.62	8.59	8.59	8.63	8.67	8.75	8.81	8.86	8.86	8.89
Electricity	21.21	20.83	20.35	19.95	19.50	19.19	19.26	19.37	19.35	19.36	19.58	19.50	19.56	19.69	19.83	19.72	19.70	19.70	19.82	19.90	20.01	19.93	20.04	20.05
Electric Generators 11/																								
Fossil Fuel Average	1.89	2.21	2.01	1.93	1.88	1.88	1.94	1.90	1.89	1.95	2.01	2.06	2.09	2.11	2.13	2.13	2.12	2.12	2.13	2.16	2.17	2.14	2.13	2.12
Petroleum Products	4.32	4.91	4.49	4.22	4.24	4.25	4.26	4.20	4.20	4.25	4.31	4.39	4.43	4.49	4.52	4.55	4.56	4.61	4.68	4.73	4.78	4.80	4.82	4.83
Distillate Fuel	5.58	6.17	5.62	5.11	4.98	4.97	4.95	4.89	4.90	4.93	4.95	5.00	5.01	5.07	5.12	5.18	5.27	5.39	5.47	5.49	5.51	5.51	5.55	5.60
Residual Fuel	4.04	4.65	4.00	3.89	3.94	3.96	3.97	3.97	3.99	4.02	4.04	4.07	4.10	4.14	4.17	4.21	4.25	4.28	4.33	4.35	4.38	4.43	4.46	4.49
Natural Gas	3.77	5.60	4.50	4.15	3.95	3.99	4.16	4.05	4.02	4.20	4.35	4.49	4.57	4.69	4.73	4.67	4.59	4.63	4.72	4.90	5.02	5.03	4.96	4.93
Steam Coal	1.26	1.24	1.23	1.23	1.22	1.21	1.21	1.21	1.22	1.22	1.22	1.22	1.21	1.21	1.20	1.20	1.20	1.19	1.20	1.20	1.21	1.20	1.20	1.21
Average Price to All Users 12/																								
Petroleum Products 2/	8.94	10.12	9.40	9.37	9.39	9.47	9.53	9.56	9.58	9.67	9.68	9.70	9.70	9.79	9.81	9.81	9.85	9.88	9.91	9.93	9.97	10.03	10.06	10.11
Distillate Fuel	8.52	9.38	8.60	8.55	8.73	8.89	8.89	8.88	8.94	9.02	9.01	9.01	9.01	9.03	9.04	9.09	9.13	9.13	9.08	9.10	9.13	9.16	9.18	9.21
Jet Fuel	5.97	6.72	6.33	6.02	5.78	5.70	5.72	5.74	5.77	5.84	5.84	5.88	5.85	5.86	5.88	5.91	5.98	6.03	6.04	6.07	6.10	6.12	6.14	6.18
Liquefied Petroleum Gas	9.27	11.82	11.57	10.22	10.34	10.41	10.53	10.59	10.65	10.79	10.90	11.05	11.09	11.27	11.36	11.37	11.41	11.48	11.58	11.64	11.72	11.78	11.83	11.90
Motor Gasoline 7/	11.15	12.53	11.42	11.74	11.71	11.80	11.90	11.89	11.89	11.99	12.01	12.01	12.00	12.12	12.12	12.06	12.09	12.09	12.11	12.11	12.15	12.24	12.26	12.30
Residual Fuel	3.92	4.59	3.83	3.66	3.68	3.71	3.74	3.75	3.78	3.81	3.84	3.88	3.91	3.94	3.97	4.00	4.02	4.05	4.08	4.11	4.14	4.17	4.20	4.23
Natural Gas	5.07	6.83	5.98	5.59	5.35	5.34	5.45	5.33	5.27	5.42	5.55	5.66	5.73	5.84	5.87	5.78	5.69	5.73	5.82	6.01	6.13	6.14	6.07	6.02
Coal	1.28	1.27	1.26	1.25	1.24	1.23	1.23	1.23	1.24	1.24	1.24	1.24	1.23	1.23	1.22	1.22	1.22	1.21	1.22	1.22	1.22	1.22	1.22	1.22
Ethanol (E85) 10/	15.19	16.83	16.83	16.81	17.01	17.36	17.49	17.46	17.61	21.18	21.39	21.40	21.39	21.22	21.20	21.12	21.07	21.04	21.04	21.05	21.29	21.63	21.81	22.06
Electricity	21.21	20.83	20.35	19.95	19.50	19.19	19.26	19.37	19.35	19.36	19.58	19.50	19.56	19.69	19.83	19.72	19.70	19.70	19.82	19.90	20.01	19.93	20.04	20.05
Non-Renewable Energy Expenditures by Sector (billion 2002 dollars)																								
Residential	160.4	172.9	172.4	168.4	167.2	167.3	170.0	170.7	172.1	175.0	179.2	181.3	183.5	186.6	189.7	190.1	191.6	193.9	197.8	200.6	203.9	205.5	208.3	209.9
Commercial	119.7	124.7	122.3	121.7	121.6	122.6	125.9	129.1	132.0	135.7	140.3	142.8	146.2	150.1	153.7	155.7	158.4	161.7	165.8	169.9	173.8	176.0	179.6	183.0
Industrial	121.0	137.5	128.4	125.1	124.7	126.8	130.2	130.9	132.5	136.0	140.0	143.7	146.7	150.9	154.6	157.0	159.5	162.7	167.2	171.4	175.5	178.3	180.9	184.3
Transportation	259.1	294.7	278.6	292.1	299.8	309.0	317.3	323.4	330.9	340.5	347.5	354.8	360.5	368.6	374.1	378.7	385.3	390.5	395.8	402.1	409.9	418.8	426.5	435.4
Total Non-Renewable Expenditu	660.1	729.8	701.8	707.3	713.2	725.6	743.5	754.2	767.6	787.2	806.9	822.5	837.0	856.2	872.1	881.5	894.7	908.8	926.5	944.0	963.0	978.6	995.4	1013
Transportation Renewable Expe	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.07
Total Expenditures	660.1	729.8	701.9	707.4	713.2	725.7	743.5	754.2	767.7	787.3	807.0	822.5	837.0	856.3	872.1	881.5	894.8	908.8	926.6	944.1	963.1	978.6	995.4	1013

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 4. Residential Sector Key Indicators and Consumption
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Key Indicators																								
Households (millions)																								
Single-Family	74.77	75.83	76.84	77.84	78.84	79.88	80.90	81.89	82.88	83.87	84.85	85.80	86.75	87.68	88.59	89.48	90.36	91.22	92.09	92.95	93.80	94.65	95.49	96.31
Multifamily	29.20	29.41	29.59	29.74	29.91	30.09	30.30	30.50	30.72	30.94	31.15	31.38	31.62	31.84	32.08	32.32	32.57	32.82	33.08	33.33	33.59	33.84	34.10	34.36
Mobile Homes	6.31	6.23	6.15	6.09	6.06	6.07	6.11	6.17	6.25	6.33	6.41	6.48	6.54	6.60	6.66	6.72	6.77	6.83	6.88	6.94	6.99	7.03	7.08	7.12
Total	110.3	111.5	112.6	113.7	114.8	116.0	117.3	118.6	119.8	121.1	122.4	123.7	124.9	126.1	127.3	128.5	129.7	130.9	132.0	133.2	134.4	135.5	136.7	137.8
Average House Square Footage	1689	1695	1700	1706	1712	1717	1722	1727	1731	1735	1740	1744	1748	1752	1756	1760	1764	1767	1771	1774	1778	1781	1785	1788
Energy Intensity																								
(million Btu per household)																								
Delivered Energy Consumption	102.3	103.3	104.5	104.3	104.8	105.0	105.2	104.8	104.8	104.6	104.6	104.0	103.7	103.5	103.6	103.3	103.4	103.4	103.5	103.0	102.7	102.6	102.9	102.7
Total Energy Consumption	189.4	190.3	191.4	191.4	192.2	192.7	193.2	192.2	192.2	191.7	191.8	191.0	190.7	190.5	190.6	190.0	189.8	189.9	190.1	189.1	188.8	188.7	189.2	188.8
(thousand Btu per square foot)																								
Delivered Energy Consumption	60.6	61.0	61.5	61.1	61.2	61.1	61.1	60.7	60.6	60.3	60.1	59.6	59.3	59.1	59.0	58.7	58.6	58.5	58.5	58.0	57.8	57.6	57.6	57.4
Total Energy Consumption	112.1	112.3	112.6	112.2	112.3	112.2	112.2	111.3	111.0	110.4	110.3	109.5	109.1	108.7	108.5	108.0	107.6	107.4	107.4	106.6	106.2	105.9	106.0	105.6
Delivered Energy Consumption by Fuel																								
Electricity																								
Space Heating	0.40	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.43	0.43	0.43	0.43	0.44	0.44	0.44	0.44	0.45	0.45	0.45	0.45	0.45	0.45	0.46	0.46
Space Cooling	0.71	0.64	0.66	0.67	0.67	0.68	0.69	0.69	0.69	0.70	0.71	0.71	0.72	0.72	0.73	0.74	0.75	0.76	0.77	0.77	0.78	0.79	0.80	0.80
Water Heating	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.36	0.36	0.36	0.35	0.35	0.35
Refrigeration	0.42	0.41	0.41	0.40	0.39	0.38	0.38	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.37
Cooking	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13
Clothes Dryers	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.28
Freezers	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Lighting	0.75	0.76	0.78	0.79	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.95	0.96	0.97	0.99	0.99
Clothes Washers 1/	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Dishwashers 1/	0.02	0.02	0.02	0.02	0.02	0.02	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
Color Televisions	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.25	0.26	0.26	0.26	0.27	0.27	0.27
Personal Computers	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.14
Furnace Fans	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
Other Uses 2/	0.88	0.97	1.01	1.04	1.08	1.13	1.17	1.21	1.25	1.29	1.33	1.36	1.40	1.44	1.48	1.51	1.55	1.59	1.63	1.67	1.70	1.74	1.79	1.83
Delivered Energy	4.33	4.37	4.44	4.50	4.57	4.64	4.73	4.79	4.86	4.93	5.01	5.06	5.14	5.21	5.29	5.35	5.43	5.50	5.59	5.65	5.71	5.78	5.88	5.94
Natural Gas																								
Space Heating	3.54	3.69	3.74	3.76	3.82	3.88	3.93	3.96	4.01	4.04	4.07	4.08	4.11	4.14	4.18	4.21	4.25	4.30	4.34	4.35	4.37	4.40	4.45	4.48
Space Cooling	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
Water Heating	1.15	1.15	1.19	1.20	1.22	1.22	1.24	1.24	1.25	1.26	1.26	1.25	1.25	1.25	1.26	1.26	1.26	1.27	1.28	1.27	1.27	1.27	1.28	1.28
Cooking	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.27	0.27
Clothes Dryers	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Other Uses 3/	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Delivered Energy	5.06	5.21	5.32	5.36	5.45	5.52	5.58	5.63	5.69	5.73	5.77	5.78	5.81	5.85	5.90	5.93	5.99	6.04	6.10	6.11	6.13	6.17	6.23	6.26
Distillate																								
Space Heating	0.77	0.81	0.83	0.83	0.83	0.83	0.82	0.82	0.81	0.81	0.80	0.79	0.79	0.78	0.78	0.77	0.76	0.75	0.75	0.74	0.73	0.72	0.72	0.71
Water Heating	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09
Other Uses 4/	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
Delivered Energy	0.89	0.92	0.95	0.95	0.95	0.95	0.94	0.94	0.93	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80

Table 4. Residential Sector Key Indicators and Consumption (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Liquefied Petroleum Gas																								
Space Heating	0.30	0.29	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Water Heating	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	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Cooking	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
Other Uses 3/	0.15	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.24	0.25	0.25
Delivered Energy	0.53	0.50	0.51	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.57	0.57	0.58	0.58	0.59	0.59	0.60	0.61	0.61	0.62	0.62	0.63	0.63	0.64
Marketed Renewables (wood) 5/	0.39	0.41	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.40
Other Fuels 6/	0.08	0.10	0.13	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10
Delivered Energy Consumption by End-Use																								
Space Heating	5.48	5.70	5.80	5.82	5.89	5.95	6.01	6.03	6.07	6.10	6.14	6.14	6.16	6.19	6.23	6.25	6.29	6.32	6.37	6.36	6.37	6.39	6.44	6.46
Space Cooling	0.71	0.64	0.66	0.67	0.67	0.68	0.69	0.69	0.69	0.70	0.71	0.71	0.72	0.72	0.73	0.74	0.75	0.76	0.77	0.77	0.78	0.79	0.80	0.80
Water Heating	1.69	1.68	1.73	1.74	1.76	1.77	1.78	1.78	1.79	1.79	1.79	1.79	1.78	1.78	1.78	1.78	1.78	1.79	1.79	1.78	1.77	1.77	1.77	1.77
Refrigeration	0.42	0.41	0.41	0.40	0.39	0.38	0.38	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.37
Cooking	0.34	0.34	0.35	0.35	0.36	0.36	0.36	0.37	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.40	0.40	0.40	0.41	0.41	0.41	0.42	0.42	0.42
Clothes Dryers	0.31	0.31	0.32	0.32	0.33	0.33	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.38	0.38	0.39	0.39
Freezers	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Lighting	0.75	0.76	0.78	0.79	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.95	0.96	0.97	0.99	0.99
Clothes Washers	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Dishwashers	0.02	0.02	0.02	0.02	0.02	0.02	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
Color Televisions	0.12	0.13	0.14	0.15	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.25	0.26	0.26	0.26	0.27	0.27	0.27
Personal Computers	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.14
Furnace Fans	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
Other Uses 7/	1.13	1.21	1.26	1.30	1.35	1.40	1.45	1.49	1.54	1.58	1.63	1.67	1.71	1.76	1.80	1.84	1.89	1.93	1.98	2.02	2.06	2.11	2.16	2.20
Delivered Energy	11.28	11.52	11.76	11.86	12.03	12.18	12.34	12.43	12.56	12.67	12.80	12.86	12.96	13.06	13.19	13.27	13.41	13.53	13.67	13.72	13.81	13.91	14.06	14.15
Electricity Related Losses	9.60	9.70	9.79	9.90	10.04	10.18	10.33	10.36	10.47	10.55	10.68	10.76	10.87	10.96	11.08	11.15	11.21	11.32	11.44	11.47	11.57	11.66	11.80	11.87
Total Energy Consumption by End-Use																								
Space Heating	6.36	6.61	6.69	6.72	6.80	6.87	6.93	6.95	6.99	7.02	7.07	7.06	7.09	7.11	7.16	7.17	7.21	7.25	7.29	7.28	7.29	7.31	7.36	7.37
Space Cooling	2.29	2.07	2.10	2.13	2.15	2.16	2.18	2.18	2.19	2.20	2.22	2.22	2.24	2.25	2.27	2.28	2.29	2.31	2.33	2.34	2.35	2.37	2.39	2.40
Water Heating	2.51	2.50	2.55	2.55	2.57	2.58	2.59	2.58	2.59	2.59	2.59	2.57	2.57	2.56	2.56	2.54	2.54	2.54	2.53	2.51	2.50	2.48	2.48	2.46
Refrigeration	1.37	1.33	1.30	1.27	1.25	1.23	1.21	1.18	1.16	1.14	1.13	1.12	1.11	1.11	1.10	1.10	1.09	1.09	1.09	1.09	1.09	1.10	1.10	1.11
Cooking	0.57	0.57	0.58	0.58	0.59	0.60	0.60	0.60	0.61	0.61	0.62	0.63	0.63	0.63	0.64	0.64	0.65	0.65	0.66	0.66	0.66	0.67	0.67	0.68
Clothes Dryers	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.88	0.89	0.89	0.90	0.89	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.92	0.92	0.93	0.94	0.94
Freezers	0.43	0.42	0.41	0.39	0.39	0.38	0.38	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.37	0.37
Lighting	2.41	2.46	2.50	2.54	2.58	2.61	2.65	2.66	2.68	2.69	2.72	2.74	2.76	2.78	2.81	2.83	2.84	2.86	2.89	2.90	2.91	2.94	2.97	2.98
Clothes Washers	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19
Dishwashers	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10
Color Televisions	0.40	0.42	0.44	0.47	0.49	0.52	0.54	0.56	0.58	0.60	0.63	0.64	0.67	0.69	0.71	0.72	0.74	0.76	0.79	0.79	0.80	0.80	0.81	0.82
Personal Computers	0.21	0.20	0.20	0.20	0.21	0.21	0.23	0.24	0.25	0.26	0.27	0.28	0.30	0.30	0.31	0.32	0.33	0.33	0.35	0.36	0.37	0.38	0.40	0.41
Furnace Fans	0.25	0.25	0.25	0.26	0.26	0.27	0.28	0.28	0.28	0.29	0.29	0.29	0.30	0.30	0.30	0.31	0.31	0.31	0.32	0.32	0.32	0.33	0.33	0.33
Other Uses 7/	3.09	3.36	3.49	3.60	3.73	3.87	4.01	4.11	4.23	4.34	4.46	4.56	4.68	4.79	4.90	5.00	5.09	5.20	5.32	5.40	5.51	5.62	5.76	5.86
Total	20.88	21.22	21.55	21.76	22.07	22.36	22.67	22.78	23.03	23.22	23.48	23.61	23.83	24.02	24.27	24.42	24.62	24.85	25.11	25.19	25.37	25.57	25.86	26.02
Non-Marketed Renewables																								
Geothermal 8/	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
Solar 9/	0.02	0.02	0.02	0.02	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	0.04	0.04	0.04	0.04	0.04	0.04
Total	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05

Table 5. Commercial Sector Key Indicators and Consumption
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Key Indicators																								
Total Floorspace (billion square feet)																								
Surviving	68.9	70.7	72.8	74.6	76.2	77.5	78.7	79.9	81.1	82.4	83.7	84.9	86.1	87.3	88.4	89.6	90.7	91.9	93.1	94.3	95.5	96.6	97.7	98.9
New Additions	3.2	3.4	3.2	2.9	2.7	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.7	2.8	2.9	3.0
Total	72.1	74.1	76.0	77.6	78.9	80.1	81.3	82.6	83.8	85.1	86.4	87.6	88.8	89.9	91.1	92.3	93.5	94.7	95.9	97.1	98.2	99.4	100.5	101.8
Energy Consumption Intensity (thousand Btu per square foot)																								
Delivered Energy Consumption	114.5	113.8	112.2	112.9	113.9	114.8	115.2	115.7	116.2	116.5	116.6	116.7	116.8	117.0	117.1	117.4	117.9	118.3	118.5	118.7	118.8	119.0	119.3	119.7
Electricity Related Losses	126.9	123.8	123.9	125.4	126.9	128.2	129.2	129.1	129.8	130.1	130.6	131.1	131.6	131.8	132.0	132.4	132.4	132.9	133.1	133.1	133.3	133.5	133.7	134.1
Total Energy Consumption	241.4	237.6	236.1	238.2	240.9	243.0	244.4	244.8	246.0	246.6	247.1	247.8	248.4	248.8	249.1	249.8	250.3	251.2	251.6	251.8	252.1	252.5	253.0	253.8
Delivered Energy Consumption by Fuel																								
Purchased Electricity																								
Space Heating 1/	0.15	0.16	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Space Cooling 1/	0.46	0.42	0.42	0.43	0.43	0.44	0.44	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.46	0.47	0.47	0.48	0.48	0.48	0.48	0.49	0.49	0.49
Water Heating 1/	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Ventilation	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19
Cooking	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
Lighting	1.12	1.14	1.17	1.20	1.23	1.25	1.27	1.29	1.31	1.32	1.34	1.35	1.36	1.37	1.37	1.38	1.39	1.40	1.41	1.42	1.42	1.43	1.43	1.44
Refrigeration	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25
Office Equipment (PC)	0.14	0.15	0.17	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37
Office Equipment (non-PC)	0.31	0.32	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.49	0.51	0.53	0.56	0.58	0.60	0.63	0.66	0.68	0.71	0.74	0.77	0.80	0.83	0.87
Other Uses 2/	1.41	1.41	1.47	1.54	1.60	1.66	1.72	1.78	1.85	1.92	1.98	2.05	2.12	2.19	2.25	2.32	2.39	2.46	2.54	2.61	2.68	2.75	2.82	2.89
Delivered Energy	4.12	4.14	4.28	4.42	4.56	4.68	4.81	4.92	5.05	5.17	5.29	5.41	5.52	5.64	5.74	5.86	5.99	6.12	6.24	6.36	6.47	6.58	6.70	6.83
Natural Gas																								
Space Heating 1/	1.42	1.49	1.46	1.48	1.51	1.53	1.54	1.55	1.57	1.58	1.58	1.58	1.59	1.59	1.60	1.61	1.63	1.64	1.65	1.66	1.66	1.67	1.68	1.70
Space Cooling 1/	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	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Water Heating 1/	0.59	0.59	0.61	0.62	0.64	0.66	0.67	0.68	0.70	0.71	0.72	0.72	0.73	0.74	0.75	0.76	0.77	0.79	0.80	0.80	0.81	0.82	0.83	0.84
Cooking	0.26	0.26	0.27	0.27	0.28	0.29	0.29	0.30	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.33	0.33	0.34	0.35	0.35	0.35	0.35	0.35	0.36
Other Uses 3/	0.93	0.90	0.85	0.87	0.91	0.93	0.95	0.97	0.99	1.01	1.03	1.04	1.05	1.07	1.08	1.09	1.11	1.13	1.14	1.16	1.17	1.19	1.21	1.24
Delivered Energy	3.21	3.26	3.20	3.26	3.36	3.42	3.47	3.52	3.58	3.63	3.66	3.68	3.71	3.74	3.77	3.82	3.87	3.92	3.96	3.99	4.02	4.06	4.11	4.17
Distillate																								
Space Heating 1/	0.17	0.20	0.20	0.21	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28	0.28	0.29	0.29	0.30	0.30	0.30	0.31
Water Heating 1/	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Other Uses 4/	0.24	0.30	0.29	0.29	0.29	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Delivered Energy	0.49	0.57	0.56	0.58	0.59	0.60	0.61	0.61	0.62	0.63	0.63	0.64	0.64	0.65	0.65	0.66	0.66	0.66	0.67	0.67	0.68	0.68	0.69	0.69
Other Fuels 5/	0.33	0.37	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Marketed Renewable Fuels																								
Biomass	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Delivered Energy	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Table 5. Commercial Sector Key Indicators and Consumption (Continued)
(Quadrillion Btu per Year, Unless Otherwise Noted)

Key Indicators and Consumption	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Delivered Energy Consumption by End-Use																								
Space Heating 1/	1.74	1.84	1.82	1.85	1.89	1.91	1.93	1.95	1.97	1.98	1.99	2.00	2.01	2.02	2.03	2.05	2.07	2.08	2.10	2.11	2.12	2.13	2.14	2.16
Space Cooling 1/	0.48	0.43	0.43	0.44	0.45	0.45	0.46	0.46	0.47	0.47	0.48	0.48	0.48	0.49	0.49	0.49	0.50	0.50	0.51	0.51	0.51	0.51	0.52	0.52
Water Heating 1/	0.80	0.81	0.82	0.84	0.87	0.88	0.90	0.91	0.93	0.94	0.95	0.96	0.97	0.98	0.98	1.00	1.01	1.02	1.03	1.04	1.05	1.05	1.06	1.08
Ventilation	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19
Cooking	0.29	0.30	0.30	0.31	0.31	0.32	0.32	0.33	0.34	0.34	0.34	0.35	0.35	0.35	0.35	0.36	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.39
Lighting	1.12	1.14	1.17	1.20	1.23	1.25	1.27	1.29	1.31	1.32	1.34	1.35	1.36	1.37	1.37	1.38	1.39	1.40	1.41	1.42	1.42	1.43	1.43	1.44
Refrigeration	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25
Office Equipment (PC)	0.14	0.15	0.17	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.34	0.35	0.36	0.36	0.37
Office Equipment (non-PC)	0.31	0.32	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.49	0.51	0.53	0.56	0.58	0.60	0.63	0.66	0.68	0.71	0.74	0.77	0.80	0.83	0.87
Other Uses 6/	3.01	3.08	3.09	3.19	3.29	3.37	3.45	3.54	3.63	3.72	3.80	3.88	3.96	4.05	4.12	4.21	4.29	4.38	4.47	4.56	4.64	4.73	4.82	4.92
Delivered Energy	8.25	8.44	8.52	8.76	8.99	9.20	9.37	9.55	9.74	9.92	10.07	10.22	10.38	10.52	10.67	10.83	11.02	11.20	11.37	11.52	11.67	11.82	11.99	12.19
Electricity Related Losses	9.15	9.18	9.42	9.72	10.02	10.27	10.50	10.66	10.88	11.07	11.28	11.49	11.69	11.86	12.03	12.21	12.38	12.58	12.76	12.93	13.09	13.26	13.45	13.66
Total Energy Consumption by End-Use																								
Space Heating 1/	2.07	2.19	2.16	2.19	2.23	2.26	2.28	2.29	2.31	2.32	2.33	2.34	2.34	2.35	2.36	2.38	2.39	2.41	2.42	2.43	2.44	2.44	2.46	2.48
Space Cooling 1/	1.51	1.36	1.36	1.38	1.40	1.41	1.43	1.43	1.44	1.44	1.44	1.45	1.45	1.46	1.46	1.47	1.47	1.48	1.49	1.49	1.49	1.49	1.50	1.50
Water Heating 1/	1.11	1.12	1.14	1.16	1.19	1.21	1.22	1.23	1.25	1.26	1.27	1.28	1.28	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.35	1.36	1.36	1.37
Ventilation	0.52	0.53	0.53	0.54	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.57	0.57
Cooking	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.41	0.42	0.42	0.43	0.43	0.43	0.43	0.44	0.44	0.44
Lighting	3.60	3.68	3.76	3.84	3.93	4.00	4.05	4.08	4.12	4.15	4.18	4.21	4.24	4.24	4.24	4.26	4.27	4.29	4.30	4.30	4.30	4.30	4.30	4.32
Refrigeration	0.65	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.71	0.71	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.74	0.74	0.74	0.74	0.74	0.75
Office Equipment (PC)	0.44	0.49	0.55	0.61	0.65	0.68	0.71	0.74	0.76	0.79	0.81	0.84	0.87	0.90	0.93	0.96	0.98	1.01	1.03	1.04	1.06	1.07	1.09	1.10
Office Equipment (non-PC)	1.00	1.02	1.08	1.14	1.21	1.28	1.34	1.40	1.46	1.53	1.60	1.67	1.73	1.80	1.87	1.94	2.01	2.09	2.16	2.24	2.33	2.41	2.51	2.61
Other Uses 6/	6.14	6.20	6.33	6.57	6.80	7.01	7.21	7.39	7.61	7.82	8.03	8.24	8.45	8.66	8.84	9.04	9.24	9.45	9.66	9.86	10.06	10.26	10.48	10.71
Total	17.40	17.61	17.94	18.48	19.01	19.47	19.87	20.21	20.62	20.99	21.35	21.71	22.06	22.38	22.69	23.05	23.39	23.78	24.13	24.45	24.76	25.08	25.44	25.84
Non-Marketed Renewable Fuels																								
Solar 7/	0.02	0.02	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
Total	0.02	0.02	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

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 6. Industrial Sector Key Indicators and Consumption

Shipments, Prices, and Consumpt	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Value of Shipments																								
(billion 1996 dollars)																								
Manufacturing	4064	4043	4220	4372	4512	4647	4755	4878	5015	5154	5295	5447	5602	5758	5931	6127	6311	6461	6632	6794	6985	7182	7391	7631
Nonmanufacturing	1222	1183	1211	1268	1295	1320	1352	1391	1427	1458	1482	1525	1560	1584	1604	1630	1667	1681	1711	1729	1762	1796	1822	1852
Total	5285	5226	5430	5640	5807	5967	6108	6269	6442	6611	6777	6972	7162	7342	7536	7757	7979	8142	8343	8523	8747	8978	9213	9483
Energy Prices																								
(2002 dollars per million Btu)																								
Distillate Oil	6.21	6.87	6.27	5.79	5.69	5.68	5.68	5.67	5.68	5.71	5.74	5.79	5.79	5.85	5.90	5.97	6.08	6.19	6.25	6.28	6.29	6.29	6.33	6.38
Liquefied Petroleum Gas	8.28	10.56	10.33	9.27	9.40	9.50	9.62	9.67	9.72	9.86	9.98	10.14	10.17	10.36	10.44	10.47	10.53	10.60	10.68	10.75	10.83	10.89	10.95	11.03
Residual Oil	3.89	4.60	3.82	3.61	3.63	3.66	3.69	3.72	3.74	3.78	3.81	3.84	3.87	3.90	3.93	3.96	3.98	4.01	4.03	4.06	4.09	4.12	4.14	4.18
Motor Gasoline	11.04	12.21	11.14	11.71	11.68	11.77	11.85	11.85	11.87	11.99	12.01	12.02	12.01	12.08	12.08	12.02	12.06	12.06	12.07	12.08	12.12	12.21	12.23	12.27
Natural Gas	3.75	5.58	4.49	4.14	3.95	4.00	4.17	4.07	4.05	4.21	4.35	4.49	4.58	4.71	4.75	4.68	4.61	4.66	4.76	4.96	5.07	5.09	5.02	4.99
Metallurgical Coal	1.87	2.02	2.01	1.99	1.98	1.96	1.96	1.95	1.95	1.94	1.92	1.91	1.90	1.90	1.89	1.88	1.88	1.87	1.84	1.82	1.80	1.78	1.77	1.76
Steam Coal	1.52	1.63	1.60	1.59	1.58	1.57	1.57	1.57	1.57	1.57	1.56	1.56	1.55	1.55	1.54	1.53	1.53	1.53	1.54	1.54	1.53	1.53	1.52	1.51
Electricity	14.74	13.93	13.65	13.47	13.21	13.08	13.23	13.33	13.26	13.23	13.41	13.35	13.43	13.58	13.73	13.68	13.67	13.67	13.77	13.82	13.90	13.83	13.93	13.94
Energy Consumption 1/																								
(quadrillion Btu)																								
Distillate	1.16	1.17	1.14	1.15	1.15	1.16	1.16	1.16	1.17	1.19	1.21	1.23	1.25	1.26	1.28	1.29	1.31	1.32	1.34	1.35	1.37	1.39	1.41	1.43
Liquefied Petroleum Gas	2.22	2.12	2.16	2.21	2.24	2.29	2.32	2.33	2.36	2.39	2.43	2.48	2.50	2.53	2.57	2.61	2.66	2.70	2.74	2.78	2.81	2.85	2.89	2.94
Petrochemical Feedstocks	1.22	1.27	1.28	1.30	1.32	1.34	1.34	1.33	1.35	1.37	1.39	1.41	1.42	1.43	1.45	1.48	1.50	1.52	1.54	1.55	1.57	1.58	1.60	1.62
Residual Fuel	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23
Other Petroleum 2/	4.19	4.21	4.11	4.39	4.48	4.53	4.57	4.53	4.54	4.55	4.59	4.68	4.77	4.79	4.84	4.90	4.96	4.99	5.06	5.13	5.18	5.22	5.24	5.27
Petroleum Subtotal	9.00	8.98	8.90	9.26	9.40	9.53	9.61	9.57	9.63	9.71	9.82	10.01	10.15	10.23	10.36	10.50	10.64	10.74	10.89	11.03	11.16	11.28	11.37	11.48
Natural Gas	7.43	7.41	7.76	7.94	8.10	8.22	8.29	8.45	8.63	8.80	8.91	9.00	9.08	9.18	9.29	9.47	9.65	9.76	9.87	9.94	10.07	10.23	10.41	10.60
Lease and Plant Fuel 3/	1.35	1.03	1.02	1.09	1.15	1.22	1.28	1.34	1.42	1.43	1.44	1.45	1.47	1.48	1.48	1.54	1.62	1.64	1.65	1.64	1.65	1.66	1.68	1.70
Natural Gas Subtotal	8.78	8.43	8.78	9.03	9.25	9.44	9.57	9.79	10.05	10.23	10.34	10.46	10.54	10.66	10.77	11.01	11.27	11.40	11.52	11.58	11.72	11.89	12.08	12.31
Metallurgical Coal & Coke 4/	0.64	0.70	0.71	0.70	0.69	0.68	0.68	0.67	0.66	0.64	0.63	0.62	0.60	0.59	0.57	0.56	0.55	0.54	0.53	0.52	0.51	0.50	0.49	0.48
Steam Coal	1.47	1.40	1.40	1.41	1.41	1.41	1.41	1.40	1.41	1.41	1.42	1.42	1.43	1.43	1.43	1.44	1.44	1.44	1.45	1.45	1.45	1.46	1.46	1.47
Coal Subtotal	2.12	2.11	2.11	2.11	2.10	2.09	2.08	2.07	2.07	2.06	2.05	2.04	2.03	2.01	2.00	2.00	1.99	1.98	1.97	1.96	1.96	1.95	1.95	1.95
Renewables 5/	1.66	1.66	1.72	1.79	1.84	1.87	1.91	1.95	2.00	2.05	2.10	2.16	2.21	2.26	2.30	2.35	2.40	2.44	2.48	2.52	2.56	2.60	2.65	2.70
Purchased Electricity	3.39	3.34	3.42	3.51	3.59	3.67	3.72	3.77	3.83	3.89	3.95	4.03	4.09	4.15	4.22	4.29	4.36	4.41	4.47	4.53	4.60	4.68	4.76	4.85
Delivered Energy	24.94	24.51	24.94	25.71	26.18	26.60	26.89	27.15	27.57	27.94	28.27	28.69	29.01	29.30	29.66	30.15	30.67	30.97	31.34	31.62	31.99	32.40	32.81	33.29
Electricity Related Losses	7.53	7.40	7.54	7.73	7.90	8.04	8.13	8.15	8.24	8.33	8.44	8.55	8.64	8.73	8.83	8.94	9.02	9.07	9.14	9.21	9.32	9.43	9.55	9.70
Total	32.47	31.91	32.48	33.43	34.08	34.65	35.01	35.30	35.81	36.27	36.71	37.24	37.66	38.03	38.48	39.09	39.69	40.03	40.48	40.83	41.31	41.84	42.36	42.99

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 6. Industrial Sector Key Indicators and Consumption (Continued)

Shipments, Prices, and Consumpt	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Energy Consumption per dollar of Shipments 1																								
(thousand Btu per 1996 dollar)																								
Distillate	0.22	0.22	0.21	0.20	0.20	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15
Liquefied Petroleum Gas	0.42	0.40	0.40	0.39	0.39	0.38	0.38	0.37	0.37	0.36	0.36	0.36	0.35	0.34	0.34	0.34	0.33	0.33	0.33	0.33	0.32	0.32	0.31	0.31
Petrochemical Feedstocks	0.23	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17
Residual Fuel	0.04	0.04	0.04	0.04	0.04	0.04	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	0.02	0.02
Other Petroleum 2/	0.79	0.81	0.76	0.78	0.77	0.76	0.75	0.72	0.70	0.69	0.68	0.67	0.67	0.65	0.64	0.63	0.62	0.61	0.61	0.60	0.59	0.58	0.57	0.56
Petroleum Subtotal	1.70	1.72	1.64	1.64	1.62	1.60	1.57	1.53	1.49	1.47	1.45	1.44	1.42	1.39	1.37	1.35	1.33	1.32	1.31	1.29	1.28	1.26	1.23	1.21
Natural Gas	1.41	1.42	1.43	1.41	1.39	1.38	1.36	1.35	1.34	1.33	1.31	1.29	1.27	1.25	1.23	1.22	1.21	1.20	1.18	1.17	1.15	1.14	1.13	1.12
Lease and Plant Fuel 3/	0.26	0.20	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.19	0.19	0.18	0.18	0.18
Natural Gas Subtotal	1.66	1.61	1.62	1.60	1.59	1.58	1.57	1.56	1.56	1.55	1.53	1.50	1.47	1.45	1.43	1.42	1.41	1.40	1.38	1.36	1.34	1.32	1.31	1.30
Metallurgical Coal & Coke 4/	0.12	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.09	0.09	0.08	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05
Steam Coal	0.28	0.27	0.26	0.25	0.24	0.24	0.23	0.22	0.22	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.16
Coal Subtotal	0.40	0.40	0.39	0.37	0.36	0.35	0.34	0.33	0.32	0.31	0.30	0.29	0.28	0.27	0.27	0.26	0.25	0.24	0.24	0.23	0.22	0.22	0.21	0.21
Renewables 5/	0.31	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30	0.30	0.30	0.29	0.29	0.29	0.28
Purchased Electricity	0.64	0.64	0.63	0.62	0.62	0.61	0.61	0.60	0.59	0.59	0.58	0.58	0.57	0.56	0.56	0.55	0.55	0.54	0.54	0.53	0.53	0.52	0.52	0.51
Delivered Energy	4.72	4.69	4.59	4.56	4.51	4.46	4.40	4.33	4.28	4.23	4.17	4.11	4.05	3.99	3.94	3.89	3.84	3.80	3.76	3.71	3.66	3.61	3.56	3.51
Electricity Related Losses	1.42	1.42	1.39	1.37	1.36	1.35	1.33	1.30	1.28	1.26	1.24	1.23	1.21	1.19	1.17	1.15	1.13	1.11	1.10	1.08	1.07	1.05	1.04	1.02
Total	6.14	6.11	5.98	5.93	5.87	5.81	5.73	5.63	5.56	5.49	5.42	5.34	5.26	5.18	5.11	5.04	4.97	4.92	4.85	4.79	4.72	4.66	4.60	4.53

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 7. Transportation Sector Key Indicators and Delivered Energy Consumption

Key Indicators and Consumption	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Key Indicators																								
Level of Travel (billions)																								
Light-Duty Veh.<8500 lbs. (VMT)	2504	2552	2638	2706	2775	2840	2904	2970	3040	3109	3182	3260	3331	3398	3466	3537	3609	3682	3756	3830	3906	3983	4067	4157
Commercial Light Trucks(VMT) 1/	65	65	67	70	72	73	75	77	79	81	83	85	88	90	92	94	97	99	101	103	106	108	111	114
Freight Trucks >10000 lbs.(VMT)	196	197	205	213	219	225	230	236	242	249	255	262	269	276	283	291	299	305	313	319	327	336	344	354
Air (seat miles available)	909	906	930	958	987	1014	1048	1081	1123	1159	1204	1248	1295	1327	1356	1386	1411	1435	1455	1473	1489	1501	1514	1521
Rail (ton miles traveled)	1336	1334	1366	1396	1430	1455	1474	1503	1534	1576	1603	1630	1656	1681	1718	1753	1778	1809	1842	1873	1911	1956	1992	2033
Domestic Shipping (ton miles tr	724	716	731	749	763	777	786	796	807	817	826	837	847	856	864	880	899	910	919	923	933	947	960	975
Energy Efficiency																								
New Light-Duty Vehicle (MPG) 2/	23.8	24.0	24.0	24.1	24.8	25.2	25.0	25.1	25.3	25.4	25.6	25.7	25.9	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	26.9	27.0
New Car (MPG) 2/	28.2	28.5	28.4	28.3	28.5	28.4	28.2	28.4	28.8	29.0	29.3	29.5	29.8	29.9	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.8	30.9
New Light Truck (MPG) 2/	20.5	20.6	20.8	21.0	22.0	22.8	22.6	22.6	22.8	22.9	23.1	23.2	23.4	23.6	23.7	23.8	24.0	24.1	24.2	24.3	24.5	24.6	24.7	24.8
Light-Duty Fleet (MPG) 3/	19.7	19.6	19.5	19.5	19.5	19.5	19.5	19.6	19.6	19.7	19.7	19.8	19.9	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.8	20.9
New Comm. Light Truck (MPG) 1/.	13.9	14.0	13.9	14.0	14.7	15.2	15.0	15.1	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0	16.1	16.1	16.2	16.3	16.4	16.5
Stock Commercial Light Truck (M	13.8	13.9	13.9	13.9	14.0	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	16.0
Aircraft (seat miles per gallon	54.8	56.7	57.1	57.6	57.9	58.4	58.8	59.3	59.9	60.5	61.2	62.0	62.7	63.3	63.9	64.3	64.7	65.1	65.4	65.7	65.9	66.2	66.5	66.8
Freight Truck (MPG)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.1	6.1	6.1	6.2	6.2	6.3	6.3	6.4	6.4	6.4	6.5	6.5	6.5
Rail (ton miles/thousand Btu)	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.4	3.5	3.5	3.5	3.6	3.6
Domestic Shipping (ton miles pe	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Energy Use by Mode																								
quadrillion Btu																								
Light-Duty Vehicles	15.58	15.91	16.47	16.94	17.38	17.75	18.13	18.51	18.90	19.27	19.64	20.04	20.37	20.70	21.00	21.31	21.62	21.93	22.24	22.59	22.95	23.31	23.71	24.14
Commercial Light Trucks 1/	0.59	0.58	0.61	0.62	0.64	0.65	0.66	0.67	0.68	0.70	0.71	0.72	0.74	0.75	0.76	0.78	0.79	0.80	0.81	0.83	0.84	0.86	0.87	0.89
Bus Transportation	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Freight Trucks	4.09	4.11	4.26	4.42	4.55	4.67	4.78	4.90	5.03	5.16	5.28	5.41	5.52	5.62	5.73	5.84	5.95	6.04	6.15	6.25	6.37	6.50	6.65	6.81
Rail, Passenger	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17
Rail, Freight	0.47	0.46	0.47	0.48	0.48	0.49	0.49	0.49	0.50	0.50	0.51	0.51	0.51	0.52	0.52	0.53	0.53	0.53	0.54	0.54	0.55	0.56	0.56	0.57
Shipping, Domestic	0.32	0.31	0.32	0.32	0.33	0.34	0.34	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.40	0.40	0.41
Shipping, International	0.64	0.71	0.71	0.71	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.74	0.74
Recreational Boats	0.31	0.31	0.32	0.32	0.32	0.33	0.33	0.33	0.34	0.34	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.38	0.38	0.39
Air	2.84	2.72	2.79	2.89	2.99	3.08	3.17	3.26	3.35	3.43	3.52	3.61	3.70	3.76	3.82	3.89	3.96	4.03	4.09	4.14	4.19	4.24	4.28	4.32
Military Use	0.66	0.72	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.78	0.78	0.79	0.79	0.79	0.80	0.80	0.81	0.81	0.81	0.81	0.82	0.82	0.82	0.82
Lubricants	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28
Pipeline Fuel	0.65	0.68	0.67	0.67	0.67	0.68	0.68	0.68	0.70	0.70	0.71	0.71	0.71	0.71	0.71	0.76	0.81	0.82	0.83	0.82	0.82	0.83	0.85	0.86
Total	26.70	27.06	27.91	28.69	29.41	30.03	30.64	31.26	31.94	32.55	33.18	33.84	34.41	34.93	35.43	36.01	36.60	37.11	37.63	38.15	38.72	39.31	39.95	40.65
million barrels per day oil equivalent																								
Light-Duty Vehicles	8.20	8.37	8.67	8.92	9.15	9.35	9.55	9.75	9.95	10.14	10.34	10.54	10.72	10.90	11.06	11.22	11.38	11.54	11.70	11.89	12.07	12.26	12.47	12.70
Commercial Light Trucks 1/	0.31	0.31	0.32	0.33	0.34	0.34	0.35	0.35	0.36	0.37	0.37	0.38	0.39	0.40	0.40	0.41	0.42	0.42	0.43	0.44	0.44	0.45	0.46	0.47
Bus Transportation	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Freight Trucks	1.94	1.95	2.02	2.09	2.15	2.21	2.26	2.32	2.38	2.44	2.50	2.56	2.61	2.66	2.71	2.76	2.81	2.86	2.91	2.95	3.01	3.07	3.14	3.22
Rail, Passenger	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08
Rail, Freight	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.26	0.27
Shipping, Domestic	0.15	0.14	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.19
Shipping, International	0.28	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
Recreational Boats	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.20
Air	1.38	1.32	1.35	1.40	1.45	1.49	1.53	1.58	1.62	1.66	1.70	1.74	1.79	1.82	1.85	1.88	1.92	1.95	1.98	2.00	2.03	2.05	2.07	2.09
Military Use	0.32	0.34	0.36	0.36	0.36	0.36	0.37	0.37	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Lubricants	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13
Pipeline Fuel	0.33	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.35	0.36	0.36	0.36	0.36	0.36	0.36	0.38	0.41	0.42	0.42	0.42	0.42	0.42	0.43	0.44
Total	13.54	13.73	14.16	14.56	14.92	15.24	15.55	15.86	16.20	16.51	16.83	17.16	17.45	17.73	17.98	18.27	18.57	18.83	19.09	19.36	19.64	19.94	20.27	20.62

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 8. Electricity Supply, Disposition, Prices, and Emissions
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Generation by Fuel Type																								
Electric Power Sector 1/																								
Power Only 2/																								
Coal	1875	1943	1940	1976	2001	2037	2059	2106	2167	2211	2235	2250	2268	2298	2328	2366	2409	2466	2534	2608	2682	2777	2838	2909
Petroleum	77	94	51	61	56	57	64	58	57	64	76	85	91	91	93	87	76	75	75	81	84	80	80	75
Natural Gas 3/	450	417	506	509	524	538	571	578	611	654	694	727	756	776	809	858	908	929	943	940	939	931	958	977
Nuclear Power	780	772	784	791	794	795	796	797	799	800	803	817	835	854	860	863	864	864	864	864	864	864	864	864
Pumped Storage/Other	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
Renewable Sources 4/	304	337	376	404	450	475	481	484	468	441	438	441	445	448	453	453	453	455	457	459	461	463	465	468
Distributed Gen (Natural Gas)	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	3	3	4	4	5	5	6	6
Non-Utility Gen for Own Use	-33	-39	-40	-40	-40	-40	-40	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37	-37
Total	3443	3514	3609	3691	3776	3853	3921	3977	4055	4124	4200	4275	4350	4422	4499	4584	4666	4746	4831	4910	4989	5073	5164	5252
Combined Heat and Power 5/																								
Coal	32	28	29	30	31	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Petroleum	6	2	0	0	0	0	1	1	1	1	2	3	3	3	4	3	2	2	2	3	3	3	2	2
Natural Gas	148	151	156	158	159	163	168	175	169	173	174	171	170	167	165	164	165	164	160	153	151	150	149	149
Renewable Sources	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Non-Utility Gen for Own Use	-11	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24
Total	183	161	165	169	170	176	182	188	183	187	189	187	187	184	182	180	180	179	175	169	167	165	164	164
Net Available to the Grid	3626	3675	3774	3860	3946	4028	4103	4165	4238	4311	4389	4462	4537	4605	4681	4764	4846	4925	5006	5079	5156	5239	5328	5417
End-Use Sector Generation																								
Combined Heat and Power 6/																								
Coal	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Petroleum	5	5	5	8	9	10	10	11	12	13	13	13	13	14	15	15	16	17	18	18	18	18	18	18
Natural Gas	84	84	86	90	94	97	101	105	110	114	118	121	125	129	133	137	142	147	152	156	161	166	172	179
Other Gaseous Fuels 7/	5	6	6	8	8	8	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	12	13	13
Renewable Sources 4/	30	31	32	34	35	36	37	38	39	40	41	43	44	45	46	47	48	49	50	51	52	52	53	54
Other 8/	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Total	157	158	162	172	179	184	189	195	202	209	215	220	225	231	237	243	250	257	264	269	275	281	288	296
Other End-Use Generators 9/	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	7
Generation for Own Use	-134	-134	-136	-145	-148	-150	-152	-155	-159	-162	-165	-168	-170	-173	-176	-179	-183	-186	-189	-193	-196	-200	-204	-209
Total Sales to the Grid	27	28	31	32	36	38	41	45	49	52	55	57	60	63	66	69	73	76	80	82	85	87	90	94
Total Electricity Generation	3831	3900	4004	4101	4194	4281	4360	4427	4507	4586	4670	4748	4828	4902	4984	5073	5163	5248	5335	5415	5498	5587	5683	5780
Net Imports	22	39	29	31	27	26	27	28	30	32	31	30	28	31	29	25	23	19	20	16	13	10	8	7

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 8. Electricity Supply, Disposition, Prices, and Emissions (Continued)
(Billion Kilowatthours, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Electricity Sales by Sector																								
Residential	1268	1282	1303	1319	1339	1360	1385	1402	1424	1444	1468	1484	1506	1527	1551	1568	1591	1613	1639	1655	1674	1695	1722	1740
Commercial	1208	1213	1254	1296	1336	1373	1408	1443	1479	1516	1550	1585	1619	1652	1683	1718	1755	1793	1829	1864	1895	1928	1963	2001
Industrial	994	978	1003	1030	1053	1075	1089	1103	1121	1140	1159	1180	1198	1216	1235	1258	1279	1292	1310	1328	1349	1371	1394	1421
Transportation	22	23	23	24	24	25	25	26	26	27	27	28	28	29	30	30	31	31	32	33	33	34	35	35
Total	3492	3495	3583	3669	3752	3833	3909	3975	4051	4126	4204	4278	4351	4424	4499	4575	4655	4730	4811	4879	4951	5029	5115	5198
End-Use Prices 10/ (2002 cents per kilowatth																								
Residential	8.4	8.5	8.3	8.2	8.0	7.9	7.9	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.1	8.0	8.1	8.1
Commercial	7.8	7.6	7.3	7.1	7.0	6.8	6.8	6.9	6.9	6.9	7.0	7.0	7.0	7.1	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.2	7.2
Industrial	5.0	4.8	4.7	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.8	4.8
Transportation	7.1	7.2	7.0	6.9	6.7	6.6	6.6	6.6	6.6	6.7	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.8	6.8	6.8	6.7	6.8	6.7
All Sectors Average	7.2	7.1	6.9	6.8	6.7	6.5	6.6	6.6	6.6	6.6	6.7	6.7	6.7	6.7	6.8	6.7	6.7	6.7	6.8	6.8	6.8	6.8	6.8	6.8
Prices by Service Category 10/																								
(2002 cents per kilowatthour)																								
Generation	4.6	4.6	4.4	4.3	4.2	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4	4.5	4.5
Transmission	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Distribution	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7
Emissions																								
Sulfur Dioxide (million tons)	10.62	10.63	10.76	10.24	10.04	9.89	9.41	9.68	10.11	10.28	9.76	9.32	9.05	8.94	8.94	8.95	8.94	8.95	8.95	8.95	8.93	8.94	8.95	8.94
Nitrogen Oxide (million tons)	4.39	3.69	3.22	3.27	3.35	3.42	3.45	3.48	3.49	3.51	3.53	3.55	3.56	3.57	3.60	3.62	3.61	3.62	3.64	3.63	3.64	3.66	3.68	3.69
Mercury (tons)	51.05	51.00	49.68	49.92	50.14	50.60	49.55	50.72	52.06	53.44	53.18	52.28	52.20	52.26	52.49	52.84	52.90	53.07	53.54	53.79	53.89	54.15	54.16	54.42

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 9. Electricity Generating Capacity
(Gigawatts)

Net Summer Capacity 1/	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Electric Power Sector 2/																								
Power Only 3/																								
Coal Steam	305.7	305.4	304.6	303.7	302.6	302.0	302.5	304.1	306.1	306.8	308.3	309.6	311.7	315.4	319.1	323.7	329.0	336.7	346.0	356.3	366.5	380.0	388.0	397.6
Other Fossil Steam 4/	132.5	130.1	129.8	127.7	126.0	123.4	122.2	112.8	106.3	103.5	102.7	102.4	101.8	101.2	101.2	100.6	100.1	99.9	99.5	99.4	98.3	98.3	97.6	97.0
Combined Cycle	81.0	114.5	120.7	121.4	121.4	121.4	121.6	120.5	124.2	129.7	131.6	137.2	142.1	148.8	154.2	162.0	167.5	173.0	179.1	188.5	192.3	195.3	197.1	198.9
Combustion Turbine/Diesel	123.4	129.8	130.2	134.2	133.9	133.4	134.1	127.1	130.2	133.9	135.1	140.3	147.0	154.5	156.1	159.0	162.2	164.8	166.3	169.0	172.0	175.1	176.3	178.3
Nuclear Power 5/	98.7	99.2	99.5	99.8	100.1	100.2	100.4	100.4	100.6	100.7	101.0	103.4	105.8	108.1	108.4	108.6	108.6	108.6	108.6	108.6	108.6	108.6	108.6	108.6
Pumped Storage	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewable Sources 6/	91.4	93.4	93.6	93.9	97.8	98.5	99.0	100.8	104.5	105.3	105.7	106.4	107.1	107.6	108.0	108.1	108.5	108.9	109.3	109.5	110.1	110.3	110.8	111.7
Distributed Gen (Nat Gas) 7/	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.7	1.1	1.6	2.1	2.9	3.9	5.2	6.3	7.5	8.5	9.9	10.9	11.9	12.8	13.5
Total	853.1	892.5	898.7	901.0	902.1	899.3	900.3	886.5	892.9	901.1	905.8	921.4	937.9	959.0	971.2	987.7	1003	1020	1038	1062	1079	1100	1112	1126
Combined Heat and Power 8/																								
Coal Steam	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Other Fossil Steam 4/	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Combined Cycle	29.4	32.3	33.1	33.1	33.1	33.1	33.1	33.1	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9	32.9
Combustion Turbine/Diesel	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Renewable Sources 6/	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	41.4	44.3	45.0	45.0	45.0	45.0	45.0	45.0	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
Total Electric Power Industry	894.5	936.9	943.7	946.1	947.2	944.4	945.3	931.5	937.7	945.9	950.6	966.2	982.7	1004	1016	1032	1047	1065	1082	1106	1124	1145	1156	1171
Cumulative Planned Additions 9/																								
Coal Steam	0.0	0.1	0.6	0.6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Other Fossil Steam 4/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	35.8	42.7	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5
Combustion Turbine/Diesel	0.0	7.3	7.5	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Renewable Sources 6/	0.0	1.9	2.1	2.4	3.0	3.7	4.0	4.2	4.3	4.4	4.4	4.5	4.6	4.6	4.6	4.7	4.7	4.7	4.7	4.8	4.8	4.8	4.8	4.8
Distributed Generation 7/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	45.1	52.9	54.5	55.7	56.4	56.8	56.9	57.1	57.1	57.2	57.2	57.3	57.4	57.4	57.4	57.4	57.4	57.5	57.5	57.5	57.5	57.6	57.6
Cumulative Unplanned Additions 9/																								
Coal Steam	0.0	0.0	0.0	0.0	0.0	0.9	2.3	4.6	6.6	7.3	8.8	10.1	12.7	16.5	20.1	24.8	31.4	39.1	48.3	59.5	69.7	83.2	91.1	101.1
Other Fossil Steam 4/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.2	1.2	4.9	10.4	12.3	17.9	22.8	29.5	34.9	42.7	48.1	53.7	59.7	69.1	72.9	76.0	77.8	79.5
Combustion Turbine/Diesel	0.0	0.0	0.3	4.0	4.0	4.1	4.9	5.9	9.7	14.2	15.5	20.7	27.4	35.0	36.6	39.5	42.8	45.8	48.1	51.7	54.6	57.9	59.5	61.8
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	3.1	3.1	3.2	4.9	8.5	9.2	9.5	10.3	10.9	11.3	11.6	11.8	12.1	12.5	12.9	13.1	13.6	13.9	14.3	15.1
Distributed Generation 7/	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.7	1.1	1.6	2.1	2.9	3.9	5.2	6.3	7.5	8.5	9.9	10.9	11.9	12.8	13.5
Total	0.0	0.0	0.3	4.0	7.1	8.1	10.8	16.9	30.3	41.8	47.2	62.6	79.9	101.2	113.2	130.0	146.8	164.6	183.6	209.3	227.8	248.9	261.5	277.1
Cumulative Total Additions	0.0	45.1	53.2	58.5	62.8	64.5	67.6	73.8	87.3	99.0	104.3	119.8	137.2	158.6	170.6	187.4	204.2	222.0	241.0	266.7	285.3	306.4	319.1	334.7

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 9. Electricity Generating Capacity (Continued)
(Gigawatts)

Net Summer Capacity 1/	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Retirements 10/																								
Coal Steam	0.0	0.4	1.7	2.7	4.2	5.7	6.7	7.5	7.5	7.5	7.5	7.5	8.0	8.0	8.0	8.0	9.3	9.3	9.3	10.1	10.1	10.1	10.1	10.4
Other Fossil Steam 4/	0.0	0.5	0.8	2.9	4.6	7.2	8.4	17.8	24.3	27.1	27.9	28.2	28.8	29.4	29.4	30.0	30.5	30.7	31.1	31.2	32.3	32.3	33.0	33.6
Combined Cycle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Combustion Turbine/Diesel	0.0	0.3	0.3	0.6	1.0	1.6	1.6	9.6	10.3	11.0	11.2	11.2	11.2	11.3	11.3	11.3	11.3	11.8	12.7	13.5	13.5	13.6	14.0	14.3
Nuclear Power	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	0.0	1.2	3.0	6.3	9.9	14.6	16.8	37.0	44.4	48.0	49.0	49.3	50.4	51.1	51.1	51.7	53.6	54.2	55.5	57.2	58.4	58.5	59.5	60.8
End-Use Sector Generators																								
Combined Heat and Power 11/																								
Coal	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Petroleum	1.0	1.0	1.0	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.7	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3
Natural Gas	14.1	14.2	14.6	15.2	15.8	16.2	16.7	17.3	17.9	18.4	19.0	19.4	19.9	20.4	21.0	21.5	22.2	22.9	23.5	24.2	24.8	25.5	26.3	27.2
Other Gaseous Fuels	1.8	1.8	1.8	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7
Renewable Sources 6/	4.2	4.2	4.5	4.8	5.0	5.1	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	6.9	7.0	7.2	7.4	7.5	7.7	7.8	8.0	8.1	8.3
Other	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	25.5	25.7	26.3	27.6	28.6	29.2	29.9	30.8	31.8	32.7	33.5	34.3	35.0	35.8	36.6	37.5	38.5	39.4	40.3	41.1	42.0	42.8	43.8	44.9
Other End-Use Generators 12/																								
Renewable Sources 13/	1.1	1.1	1.1	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.8	2.0	2.1	2.2
Cumulative Additions 9/																								
Combined Heat and Power 11/	0.0	0.2	0.8	2.2	3.2	3.7	4.4	5.3	6.3	7.2	8.0	8.8	9.5	10.3	11.1	12.0	13.0	13.9	14.8	15.6	16.5	17.4	18.3	19.4
Other End-Use Generators 12/	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1

Table 10. Electricity Trade
(Billion Kilowatthours, Unless Otherwise Noted)

Electricity Trade	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Interregional Electricity Trade																								
Gross Domestic Firm Power Sales.	138.9	136.7	132.4	125.3	117.0	117.0	115.0	114.4	107.1	99.8	92.5	85.2	78.0	70.7	63.4	56.1	48.8	45.2	41.5	41.5	41.5	41.5	41.5	41.5
Gross Domestic Economy Sales....	209.2	227.5	210.6	212.0	220.5	230.9	239.1	240.2	225.4	226.2	221.4	222.2	222.6	221.7	214.4	218.9	218.5	218.8	219.8	216.0	201.9	199.8	198.0	201.9
Gross Domestic Trade.....	348.1	364.1	343.0	337.3	337.5	347.9	354.1	354.6	332.5	326.0	313.9	307.5	300.6	292.4	277.8	275.0	267.3	263.9	261.4	257.5	243.4	241.3	239.5	243.5
Gross Domestic Firm Power Sales (million 2002 dollars).....	6932	6823	6612	6256	5841	5840	5743	5709	5346	4982	4619	4255	3892	3528	3165	2801	2438	2256	2074	2074	2074	2074	2074	2074
Gross Domestic Economy Sales (million 2002 dollars).....	6791	9033	7019	6699	6756	7168	7772	7959	7408	7747	7922	8242	8403	8496	8320	8491	8425	8510	8654	8600	8065	7969	7949	8067
Gross Domestic Sales (million 2002 dollars).....	13724	15856	13631	12954	12597	13008	13515	13668	12754	12729	12541	12497	12295	12024	11485	11292	10863	10766	10728	10675	10139	10044	10024	10141
International Electricity Trade																								
Firm Power Imports from Canada &	9.5	13.6	11.1	10.7	6.7	6.7	6.7	6.5	5.8	5.2	4.6	3.9	3.3	2.6	2.0	1.3	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Economy Imports from Canada & Me	26.8	38.3	34.7	37.3	37.1	36.5	37.0	39.2	40.7	42.1	40.6	39.6	37.6	39.5	37.3	33.8	30.6	26.6	27.6	24.0	20.6	18.0	16.0	14.8
Gross Imports from Canada & Mex	36.3	51.9	45.8	48.0	43.8	43.2	43.8	45.7	46.6	47.3	45.1	43.5	40.9	42.1	39.2	35.1	31.3	27.0	27.6	24.1	20.6	18.0	16.0	14.8
Firm Power Exports to Canada & M	5.6	6.0	9.7	9.7	9.7	9.7	9.7	9.7	8.7	7.8	6.8	5.8	4.8	3.9	2.9	1.9	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Economy Exports to Canada & Mexi	8.7	6.7	6.9	7.0	7.1	7.2	7.4	7.5	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Gross Exports to Canada & Mexic	14.3	12.7	16.6	16.7	16.8	16.9	17.1	17.2	16.4	15.4	14.4	13.5	12.5	11.5	10.6	9.6	8.6	8.1	7.7	7.7	7.7	7.7	7.7	7.7

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 11. Petroleum Supply and Disposition Balance
(Million Barrels per Day, Unless Otherwise Noted)

Supply and Disposition	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Crude Oil																								
Domestic Crude Production 1/.	5.62	5.69	5.80	5.86	5.95	6.10	6.14	6.09	5.95	5.82	5.72	5.66	5.56	5.52	5.41	5.27	5.27	5.18	5.00	4.83	4.70	4.77	4.71	4.65
Alaska	0.98	0.98	0.95	0.90	0.88	0.91	0.93	0.94	0.92	0.92	0.92	0.94	0.95	0.94	0.91	0.87	0.82	0.77	0.72	0.67	0.63	0.58	0.54	0.51
Lower 48 States	4.64	4.71	4.85	4.97	5.07	5.19	5.20	5.15	5.03	4.90	4.79	4.73	4.61	4.59	4.50	4.40	4.44	4.41	4.27	4.16	4.08	4.19	4.17	4.14
Net Imports	9.13	9.52	9.73	9.86	10.08	10.30	10.46	10.74	11.19	11.83	12.28	12.72	13.14	13.38	13.69	13.87	13.91	14.06	14.31	14.74	15.11	15.27	15.42	15.59
Gross Imports	9.14	9.53	9.74	9.94	10.16	10.38	10.54	10.82	11.27	11.90	12.35	12.79	13.19	13.44	13.74	13.92	13.95	14.11	14.34	14.77	15.13	15.30	15.45	15.61
Exports	0.01	0.01	0.01	0.07	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.02	0.03	0.02	0.02
Other Crude Supply 2/	0.07	0.18	0.18	-0.12	-0.05	-0.07	0.00	0.00	-0.04	-0.11	-0.11	-0.12	-0.07	-0.12	-0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Crude Supply	14.83	15.39	15.71	15.60	15.99	16.33	16.59	16.83	17.11	17.54	17.89	18.27	18.62	18.79	19.00	19.14	19.18	19.24	19.31	19.57	19.82	20.05	20.13	20.24
Natural Gas Plant Liquids	1.88	1.72	1.90	2.17	2.20	2.23	2.23	2.24	2.28	2.28	2.28	2.29	2.30	2.31	2.30	2.37	2.46	2.48	2.50	2.46	2.45	2.45	2.47	2.50
Other Inputs 3/	0.67	0.35	0.39	0.41	0.44	0.47	0.51	0.54	0.53	0.52	0.52	0.52	0.53	0.51	0.51	0.51	0.50	0.51	0.52	0.53	0.54	0.54	0.55	0.55
Refinery Processing Gain 4/	0.98	0.93	0.94	0.88	0.88	0.88	0.87	0.88	0.88	0.89	0.92	0.94	0.96	0.97	0.97	0.97	0.97	0.97	0.98	1.00	1.00	1.00	1.01	1.01
Net Product Imports 5/	1.41	1.47	1.68	1.75	1.75	1.73	1.83	1.83	1.87	1.83	1.88	1.93	1.92	2.09	2.23	2.33	2.53	2.73	2.99	3.11	3.23	3.35	3.61	3.86
Gross Refined Product Imports	1.92	2.00	2.09	2.06	2.09	2.04	2.10	2.09	2.12	2.15	2.22	2.28	2.24	2.41	2.52	2.58	2.72	2.82	2.90	2.94	3.00	3.15	3.31	3.52
Unfinished Oil Imports	0.41	0.39	0.50	0.60	0.57	0.60	0.65	0.67	0.70	0.61	0.61	0.62	0.65	0.66	0.69	0.73	0.78	0.89	1.07	1.16	1.22	1.19	1.30	1.35
Ether Imports	0.06	0.06	0.06	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
Exports	0.97	0.97	0.97	0.91	0.91	0.92	0.92	0.93	0.94	0.93	0.95	0.96	0.97	0.98	0.98	0.97	0.97	0.97	0.98	0.99	0.99	0.99	1.00	1.00
Total Primary Supply 7/	19.77	19.87	20.60	20.82	21.25	21.64	22.03	22.30	22.67	23.05	23.49	23.95	24.33	24.66	25.01	25.33	25.64	25.95	26.29	26.66	27.04	27.39	27.76	28.16
Refined Petroleum Products Supplied																								
Motor Gasoline 8/	8.86	9.04	9.35	9.61	9.83	10.02	10.20	10.39	10.58	10.76	10.95	11.15	11.32	11.49	11.64	11.79	11.95	12.10	12.26	12.44	12.62	12.80	13.00	13.23
Jet Fuel 9/	1.61	1.57	1.62	1.67	1.72	1.76	1.81	1.85	1.90	1.94	1.99	2.03	2.07	2.10	2.13	2.17	2.21	2.24	2.27	2.29	2.32	2.34	2.36	2.38
Distillate Fuel 10/	3.68	3.76	3.85	3.97	4.06	4.14	4.23	4.28	4.37	4.48	4.60	4.72	4.82	4.89	4.98	5.04	5.08	5.15	5.23	5.32	5.42	5.51	5.61	5.70
Residual Fuel	0.74	0.84	0.65	0.69	0.68	0.68	0.70	0.69	0.70	0.72	0.74	0.75	0.76	0.76	0.77	0.76	0.75	0.75	0.75	0.75	0.76	0.75	0.76	0.76
Other 11/	4.72	4.67	4.70	4.89	4.97	5.05	5.11	5.10	5.13	5.18	5.24	5.33	5.40	5.44	5.52	5.59	5.67	5.73	5.81	5.88	5.94	6.00	6.06	6.12
Total	19.61	19.88	20.16	20.82	21.26	21.66	22.05	22.32	22.69	23.08	23.51	23.98	24.36	24.69	25.03	25.35	25.66	25.97	26.31	26.68	27.06	27.41	27.78	28.18
Refined Petroleum Products Supplied																								
Residential and Commercial	1.22	1.28	1.32	1.34	1.35	1.36	1.37	1.37	1.37	1.38	1.38	1.38	1.39	1.39	1.39	1.39	1.39	1.39	1.40	1.39	1.40	1.40	1.40	1.40
Industrial 12/	4.80	4.77	4.75	4.93	5.00	5.07	5.12	5.10	5.14	5.19	5.25	5.35	5.41	5.46	5.53	5.61	5.69	5.75	5.83	5.90	5.97	6.04	6.10	6.16
Transportation	13.21	13.40	13.85	14.27	14.64	14.95	15.26	15.57	15.90	16.21	16.53	16.86	17.15	17.43	17.68	17.95	18.22	18.47	18.73	19.01	19.30	19.60	19.92	20.27
Electric Generators 13/	0.38	0.44	0.25	0.29	0.27	0.27	0.30	0.28	0.27	0.30	0.35	0.39	0.42	0.42	0.43	0.40	0.36	0.35	0.35	0.38	0.39	0.37	0.37	0.35
Total	19.61	19.88	20.16	20.82	21.26	21.66	22.05	22.32	22.69	23.08	23.51	23.98	24.36	24.69	25.03	25.35	25.66	25.97	26.31	26.68	27.06	27.41	27.78	28.18
Discrepancy 14/	0.16	-0.02	0.44	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03	-0.03	-0.03	-0.03	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
World Oil Price (2002 dollars p	23.68	27.25	23.84	23.32	23.48	23.67	23.85	24.01	24.18	24.39	24.57	24.77	24.97	25.14	25.34	25.52	25.71	25.89	26.07	26.26	26.44	26.62	26.80	27.01
Import Share of Product Supplie	0.54	0.55	0.57	0.56	0.56	0.56	0.56	0.56	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.64	0.64	0.65	0.66	0.67	0.68	0.68	0.69	0.69
Net Expenditures for Imports of Crude Oil a																								
Petroleum Products (billion 2	90.38	109.4	100.9	100.6	103.0	105.5	108.6	111.8	117.2	123.3	128.7	134.3	138.9	144.9	150.1	153.9	157.4	162.2	168.5	175.2	181.7	186.2	192.5	199.3
Domestic Refinery Distillation	16.8	16.9	16.9	17.1	17.4	17.7	18.0	18.3	18.7	19.0	19.3	19.7	20.0	20.2	20.3	20.5	20.6	20.6	20.7	20.9	21.2	21.5	21.5	21.6
Capacity Utilization Rate (perc	91.0	91.0	94.0	92.5	93.1	93.5	93.4	93.1	93.0	93.7	93.9	94.2	94.4	94.5	94.8	94.7	94.6	94.7	94.7	94.8	94.8	94.7	94.7	94.8

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 12. Petroleum Product Prices
(2002 Cents per Gallon, Unless Otherwise Noted)

Sector and Fuel	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
World Oil Price (2002 dollars p	23.68	27.25	23.84	23.32	23.48	23.67	23.85	24.01	24.18	24.39	24.57	24.77	24.97	25.14	25.34	25.52	25.71	25.89	26.07	26.26	26.44	26.62	26.80	27.01
Delivered Sector Product Prices																								
Residential																								
Distillate Fuel	114.2	126.3	115.2	111.2	109.9	109.1	109.5	109.3	108.7	108.8	109.5	110.6	110.9	112.0	112.8	113.7	114.5	115.4	116.4	116.8	116.9	116.9	117.5	118.3
Liquefied Petroleum Gas	110.8	141.4	138.6	116.6	117.1	117.1	118.1	118.6	119.1	120.3	121.2	122.6	122.9	124.5	125.4	125.3	125.4	126.1	127.3	127.9	128.7	129.2	129.6	130.3
Commercial																								
Distillate Fuel	84.1	93.1	84.9	78.0	76.6	76.1	76.2	76.1	75.8	76.1	76.6	77.4	77.6	78.5	79.3	80.1	81.3	82.5	83.4	83.8	83.9	83.9	84.4	85.2
Residual Fuel	63.1	74.4	61.9	60.0	60.2	60.6	61.1	61.4	61.8	62.3	62.8	63.3	63.7	64.1	64.6	64.9	65.3	65.7	66.1	66.5	66.9	67.3	67.7	68.1
Residual Fuel (2002 dollars p	26.48	31.23	25.98	25.20	25.28	25.46	25.65	25.79	25.95	26.17	26.37	26.57	26.77	26.92	27.12	27.27	27.43	27.60	27.75	27.94	28.11	28.28	28.44	28.62
Industrial 1/																								
Distillate Fuel	86.2	95.2	86.9	80.2	78.9	78.8	78.7	78.7	78.8	79.2	79.6	80.2	80.4	81.1	81.9	82.8	84.3	85.8	86.7	87.1	87.2	87.3	87.8	88.5
Liquefied Petroleum Gas	71.1	90.6	88.6	79.5	80.7	81.5	82.5	82.9	83.4	84.6	85.6	87.0	87.2	88.8	89.5	89.8	90.3	90.9	91.7	92.2	92.9	93.5	94.0	94.6
Residual Fuel	58.3	68.8	57.2	54.1	54.4	54.8	55.3	55.6	56.0	56.5	57.0	57.5	58.0	58.4	58.8	59.2	59.6	60.0	60.4	60.8	61.2	61.6	62.0	62.5
Residual Fuel (2002 dollars p	24.48	28.89	24.04	22.73	22.84	23.02	23.21	23.37	23.53	23.74	23.94	24.15	24.35	24.51	24.71	24.87	25.03	25.21	25.36	25.55	25.72	25.89	26.06	26.25
Transportation																								
Diesel Fuel (Distillate) 2/..	130.6	144.3	131.8	133.4	137.5	140.6	140.5	139.5	140.4	141.8	141.7	141.5	141.5	141.3	141.1	141.1	140.7	139.8	138.5	138.8	139.3	139.6	139.5	139.5
Jet Fuel 3/	80.6	90.7	85.4	81.2	78.1	77.0	77.2	77.5	77.9	78.9	78.9	79.4	79.0	79.1	79.4	79.8	80.8	81.4	81.5	81.9	82.3	82.6	83.0	83.4
Motor Gasoline 4/	138.1	155.2	141.5	145.3	144.9	146.0	147.2	147.1	147.2	148.4	148.6	148.7	148.5	149.8	149.8	149.1	149.5	149.5	149.7	149.7	150.2	151.3	151.6	152.1
Liquefied Petroleum Gas	128.7	141.3	141.2	126.9	127.2	127.2	127.9	128.1	128.3	129.2	129.8	130.8	130.9	132.3	133.4	132.3	131.5	132.1	133.7	134.0	134.8	135.1	135.2	135.6
Residual Fuel	56.5	66.7	55.4	52.1	52.4	52.8	53.2	53.5	53.9	54.4	54.8	55.2	55.7	56.1	56.5	56.9	57.3	57.7	58.1	58.5	58.9	59.4	59.7	60.2
Residual Fuel (2002 dollars p	23.71	28.00	23.28	21.88	22.00	22.17	22.34	22.47	22.62	22.83	23.01	23.19	23.38	23.54	23.74	23.89	24.06	24.24	24.41	24.59	24.75	24.93	25.09	25.30
Ethanol (E85) 5/	135.8	150.5	150.5	150.2	152.1	155.2	156.4	156.1	157.4	189.3	191.2	191.3	191.2	189.6	189.5	188.8	188.3	188.0	188.0	188.2	190.2	193.3	195.0	197.2
Electric Generators 6/																								
Distillate Fuel	77.3	85.6	77.9	70.8	69.1	68.9	68.7	67.8	68.0	68.4	68.7	69.4	69.5	70.3	70.9	71.8	73.1	74.8	75.8	76.2	76.4	76.4	76.9	77.6
Residual Fuel	60.4	69.6	59.9	58.2	59.0	59.3	59.4	59.4	59.8	60.2	60.5	60.9	61.4	62.0	62.4	63.0	63.6	64.1	64.7	65.1	65.6	66.3	66.7	67.3
Residual Fuel (2002 dollars p	25.38	29.25	25.16	24.45	24.77	24.90	24.93	24.95	25.10	25.28	25.40	25.58	25.80	26.03	26.20	26.46	26.71	26.93	27.19	27.35	27.57	27.84	28.02	28.25
Refined Petroleum Product Prices 7/																								
Distillate Fuel	118.1	130.1	119.3	118.5	121.1	123.2	123.3	123.2	124.0	125.1	125.0	125.0	125.0	125.2	125.4	126.0	126.6	126.6	125.9	126.1	126.6	127.0	127.3	127.7
Jet Fuel 3/	80.6	90.7	85.4	81.2	78.1	77.0	77.2	77.5	77.9	78.9	78.9	79.4	79.0	79.1	79.4	79.8	80.8	81.4	81.5	81.9	82.3	82.6	83.0	83.4
Liquefied Petroleum Gas	79.6	101.4	99.3	87.6	88.7	89.3	90.3	90.9	91.3	92.5	93.5	94.8	95.1	96.7	97.4	97.5	97.9	98.5	99.3	99.9	100.5	101.0	101.5	102.1
Motor Gasoline 4/	138.1	155.2	141.4	145.3	144.9	146.0	147.2	147.1	147.2	148.4	148.6	148.7	148.5	149.8	149.7	149.1	149.5	149.5	149.7	149.7	150.2	151.3	151.6	152.1
Residual Fuel	58.6	68.6	57.4	54.8	55.1	55.5	55.9	56.1	56.5	57.1	57.5	58.0	58.5	58.9	59.4	59.8	60.2	60.7	61.1	61.6	62.0	62.5	62.9	63.4
Residual Fuel (2002 dollars p	24.62	28.83	24.10	23.02	23.15	23.32	23.49	23.58	23.74	23.97	24.17	24.37	24.58	24.75	24.95	25.13	25.30	25.49	25.67	25.86	26.04	26.23	26.41	26.61
Average	116.1	131.6	121.7	121.5	121.8	122.8	123.6	123.7	124.1	125.2	125.3	125.6	125.6	126.6	126.7	126.6	127.2	127.4	127.5	127.7	128.2	129.1	129.4	130.0

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 13. Natural Gas Supply and Disposition
(Trillion Cubic Feet per Year)

Supply, Disposition, and Prices	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production																								
Dry Gas Production 1/	19.05	19.54	19.53	19.64	19.86	20.26	20.35	20.43	20.85	21.00	21.03	21.31	21.48	21.64	21.60	22.41	23.41	23.74	23.92	23.56	23.54	23.58	23.84	24.25
Supplemental Natural Gas 2/	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Net Imports	3.49	3.50	3.60	3.85	4.14	4.21	4.65	4.79	4.94	5.34	5.81	5.87	6.02	6.11	6.55	6.40	6.17	6.17	6.24	6.54	6.70	6.81	7.06	7.11
Canada	3.59	3.39	3.50	3.44	3.31	3.29	3.38	3.49	3.60	3.59	3.59	3.44	3.17	3.13	2.97	2.71	2.57	2.52	2.52	2.47	2.48	2.43	2.48	2.52
Mexico	-0.26	-0.31	-0.42	-0.43	-0.45	-0.41	-0.37	-0.34	-0.35	-0.35	-0.29	-0.22	-0.15	-0.16	-0.17	-0.19	-0.20	-0.21	-0.22	-0.22	-0.21	-0.20	-0.19	-0.17
Liquefied Natural Gas	0.17	0.43	0.52	0.83	1.28	1.34	1.64	1.64	1.69	2.11	2.51	2.65	3.00	3.14	3.76	3.88	3.80	3.85	3.93	4.29	4.42	4.58	4.76	4.76
Total Supply	22.62	23.12	23.21	23.59	24.10	24.57	25.09	25.32	25.88	26.44	26.94	27.28	27.60	27.85	28.24	28.90	29.67	30.01	30.26	30.20	30.34	30.49	30.99	31.45
Consumption by Sector																								
Residential	4.92	5.07	5.18	5.21	5.30	5.37	5.43	5.47	5.54	5.58	5.62	5.62	5.66	5.69	5.74	5.77	5.83	5.88	5.93	5.94	5.96	6.00	6.06	6.09
Commercial	3.12	3.17	3.11	3.18	3.26	3.33	3.37	3.42	3.48	3.53	3.56	3.58	3.61	3.64	3.67	3.71	3.77	3.82	3.86	3.89	3.91	3.95	3.99	4.05
Industrial 3/	7.23	7.21	7.55	7.73	7.88	8.00	8.07	8.22	8.40	8.56	8.67	8.76	8.83	8.93	9.04	9.21	9.39	9.49	9.60	9.67	9.80	9.95	10.12	10.31
Electric Generators 4/	5.55	4.93	5.68	5.73	5.86	6.01	6.31	6.22	6.41	6.70	7.01	7.20	7.38	7.45	7.65	7.96	8.31	8.41	8.43	8.29	8.24	8.15	8.34	8.47
Transportation 5/	0.01	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11
Pipeline Fuel	0.63	0.66	0.65	0.65	0.65	0.66	0.66	0.66	0.68	0.68	0.69	0.69	0.69	0.70	0.69	0.74	0.79	0.80	0.81	0.80	0.80	0.81	0.82	0.84
Lease and Plant Fuel 6/	1.32	1.00	0.99	1.06	1.12	1.19	1.25	1.31	1.38	1.39	1.40	1.42	1.43	1.44	1.44	1.50	1.58	1.60	1.61	1.60	1.60	1.61	1.63	1.66
Total	22.78	22.06	23.19	23.58	24.11	24.59	25.13	25.36	25.94	26.50	27.01	27.35	27.67	27.92	28.32	28.98	29.75	30.09	30.34	30.28	30.42	30.57	31.08	31.54
Gas to Liquids	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
Discrepancy 7/	-0.16	1.06	0.02	0.01	-0.01	-0.02	-0.03	-0.05	-0.06	-0.07	-0.07	-0.07	-0.07	-0.07	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 14. Natural Gas Prices, Margins and Revenues
(2002 Dollars per Thousand Cubic Feet, Unless Otherwise Noted)

Prices, Margins, and Revenue	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Source Price																								
Average Lower 48 Wellhead Pr	2.95	4.88	3.87	3.50	3.31	3.37	3.57	3.43	3.41	3.59	3.76	3.88	3.95	4.10	4.14	4.05	3.95	4.03	4.16	4.39	4.47	4.51	4.43	4.40
Average Import Price	3.14	5.35	3.92	3.67	3.52	3.57	3.67	3.69	3.75	3.92	4.06	4.27	4.40	4.48	4.52	4.46	4.38	4.39	4.43	4.60	4.79	4.78	4.70	4.65
Average 2/	2.98	4.96	3.88	3.53	3.35	3.41	3.59	3.49	3.48	3.67	3.83	3.97	4.06	4.20	4.24	4.15	4.05	4.12	4.23	4.44	4.55	4.57	4.50	4.46
Delivered Prices																								
Residential	7.86	9.27	9.06	8.59	8.26	8.15	8.18	7.98	7.88	8.03	8.17	8.28	8.33	8.42	8.45	8.35	8.24	8.27	8.36	8.54	8.67	8.68	8.60	8.55
Commercial	6.55	8.29	7.78	7.33	7.04	6.98	7.05	6.89	6.82	6.98	7.13	7.25	7.32	7.43	7.46	7.38	7.28	7.31	7.41	7.58	7.72	7.73	7.66	7.61
Industrial 3/	3.85	5.74	4.62	4.25	4.06	4.11	4.29	4.19	4.17	4.33	4.47	4.61	4.70	4.85	4.88	4.81	4.74	4.79	4.89	5.09	5.21	5.23	5.16	5.13
Electric Generators 4/	3.85	5.71	4.58	4.22	4.02	4.07	4.24	4.13	4.10	4.28	4.44	4.58	4.66	4.78	4.82	4.75	4.68	4.72	4.81	4.99	5.11	5.12	5.05	5.02
Transportation 5/	7.58	9.68	8.48	8.13	8.04	8.19	8.44	8.42	8.48	8.69	8.87	9.03	9.12	9.23	9.28	9.21	9.10	9.13	9.20	9.36	9.48	9.48	9.40	9.34
Average 6/	5.21	7.02	6.15	5.74	5.49	5.49	5.60	5.47	5.41	5.56	5.70	5.82	5.89	6.00	6.03	5.94	5.84	5.88	5.98	6.17	6.29	6.31	6.23	6.19
Transmission & Distribution Margins 7/																								
Residential	4.88	4.31	5.18	5.06	4.91	4.74	4.59	4.49	4.40	4.37	4.34	4.31	4.27	4.23	4.21	4.20	4.19	4.16	4.14	4.10	4.12	4.10	4.10	4.09
Commercial	3.56	3.33	3.90	3.80	3.68	3.57	3.46	3.40	3.34	3.31	3.30	3.28	3.26	3.23	3.22	3.23	3.23	3.20	3.18	3.14	3.17	3.15	3.16	3.15
Industrial 3/	0.87	0.78	0.74	0.72	0.70	0.70	0.69	0.70	0.69	0.66	0.65	0.64	0.64	0.65	0.64	0.66	0.68	0.67	0.66	0.65	0.66	0.66	0.66	0.67
Electric Generators 4/	0.86	0.75	0.70	0.69	0.67	0.66	0.64	0.64	0.62	0.61	0.61	0.61	0.60	0.58	0.58	0.60	0.63	0.61	0.58	0.55	0.56	0.55	0.56	0.56
Transportation 5/	4.60	4.72	4.59	4.59	4.69	4.78	4.85	4.93	5.00	5.02	5.05	5.06	5.06	5.03	5.05	5.06	5.05	5.01	4.98	4.92	4.93	4.91	4.90	4.88
Average 6/	2.23	2.06	2.26	2.20	2.14	2.08	2.01	1.98	1.93	1.89	1.87	1.84	1.83	1.81	1.79	1.79	1.79	1.76	1.75	1.73	1.74	1.74	1.73	1.72
Transmission & Distribution Revenue (billion 2002 dollars)																								
Residential	24.02	21.84	26.81	26.34	25.98	25.45	24.93	24.59	24.33	24.35	24.38	24.24	24.17	24.05	24.16	24.24	24.41	24.44	24.56	24.34	24.56	24.61	24.85	24.91
Commercial	11.12	10.54	12.12	12.05	12.02	11.88	11.66	11.64	11.64	11.69	11.73	11.75	11.78	11.75	11.82	11.97	12.15	12.20	12.27	12.20	12.40	12.45	12.62	12.77
Industrial 3/	6.27	5.61	5.56	5.55	5.55	5.63	5.60	5.73	5.76	5.65	5.59	5.61	5.69	5.80	5.83	6.10	6.41	6.37	6.38	6.31	6.46	6.56	6.69	6.86
Electric Generators 4/	4.78	3.69	3.99	3.96	3.90	3.95	4.06	3.99	3.94	4.07	4.26	4.36	4.41	4.31	4.43	4.80	5.22	5.10	4.92	4.55	4.63	4.46	4.64	4.72
Transportation 5/	0.06	0.10	0.12	0.14	0.17	0.20	0.23	0.26	0.29	0.31	0.34	0.36	0.38	0.40	0.42	0.44	0.46	0.47	0.48	0.49	0.50	0.51	0.53	0.54
Total	46.25	41.78	48.59	48.04	47.64	47.11	46.47	46.21	45.96	46.07	46.31	46.32	46.44	46.31	46.67	47.55	48.64	48.58	48.61	47.88	48.55	48.59	49.34	49.80

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 15. Oil and Gas Supply

Production and Supply	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Crude Oil																								
Lower 48 Average Wellhead Price 1/ (2002 dollars per barrel)	24.54	27.29	24.36	22.80	22.90	23.13	23.31	23.49	23.64	24.12	24.03	24.26	24.47	24.71	24.89	25.10	25.49	25.48	25.86	25.87	26.40	26.36	26.62	26.86
Production (million barrels per day) 2/																								
United States Total	5.62	5.69	5.80	5.86	5.95	6.10	6.14	6.09	5.95	5.82	5.72	5.66	5.56	5.52	5.41	5.27	5.27	5.18	5.00	4.83	4.70	4.77	4.71	4.65
Lower 48 Onshore	3.11	2.93	2.95	2.90	2.83	2.77	2.72	2.66	2.61	2.56	2.51	2.46	2.42	2.38	2.34	2.30	2.27	2.23	2.20	2.17	2.13	2.11	2.07	2.04
Lower 48 Offshore	1.53	1.78	1.90	2.06	2.24	2.42	2.49	2.49	2.42	2.34	2.28	2.26	2.18	2.20	2.16	2.10	2.18	2.18	2.08	1.99	1.94	2.09	2.10	2.09
Alaska	0.98	0.98	0.95	0.90	0.88	0.91	0.93	0.94	0.92	0.92	0.92	0.94	0.95	0.94	0.91	0.87	0.82	0.77	0.72	0.67	0.63	0.58	0.54	0.51
L48 End of Year Reserves (billio	19.07	19.26	18.98	18.62	18.63	18.92	18.92	18.76	18.40	18.05	17.73	17.54	17.18	17.11	16.85	16.58	16.63	16.47	16.19	15.87	15.56	15.52	15.27	15.05
Natural Gas																								
Lower 48 Average Wellhead Price 1/ (2002 dollars per thousand cubic	2.95	4.88	3.87	3.50	3.31	3.37	3.57	3.43	3.41	3.59	3.76	3.88	3.95	4.10	4.14	4.05	3.95	4.03	4.16	4.39	4.47	4.51	4.43	4.40
Dry Production (trillion cubic feet) 3/																								
United States Total	19.05	19.54	19.53	19.65	19.87	20.27	20.36	20.43	20.85	21.00	21.04	21.31	21.49	21.65	21.60	22.41	23.41	23.74	23.92	23.56	23.55	23.58	23.84	24.25
Lower 48 Onshore	13.76	13.80	13.91	14.08	14.34	14.59	14.70	14.70	14.68	14.91	15.08	15.38	15.64	16.10	16.20	16.05	15.99	16.17	16.38	16.37	16.59	16.47	16.34	16.59
Associated-Dissolved 4/	1.60	1.54	1.54	1.52	1.50	1.47	1.45	1.43	1.40	1.38	1.37	1.35	1.33	1.31	1.29	1.28	1.26	1.25	1.23	1.22	1.21	1.19	1.18	1.17
Non-Associated	12.16	12.26	12.37	12.55	12.84	13.12	13.25	13.27	13.28	13.53	13.72	14.04	14.32	14.79	14.90	14.78	14.73	14.93	15.15	15.15	15.38	15.28	15.16	15.42
Conventional	6.23	6.05	6.26	6.29	6.16	6.05	5.96	5.82	5.77	5.81	5.85	5.91	5.94	6.06	5.98	5.94	5.91	5.95	6.01	5.99	6.07	6.02	5.91	5.96
Unconventional	5.93	6.20	6.12	6.26	6.68	7.07	7.29	7.45	7.51	7.72	7.87	8.12	8.38	8.74	8.92	8.84	8.81	8.97	9.13	9.16	9.31	9.26	9.25	9.46
Lower 48 Offshore	4.86	5.23	5.08	5.01	4.96	5.10	5.07	5.14	5.57	5.48	5.34	5.31	5.21	4.91	4.76	4.89	5.14	5.29	5.25	4.89	4.65	4.60	4.80	4.96
Associated-Dissolved 4/	1.05	1.14	1.16	1.16	1.16	1.49	1.77	1.71	1.63	1.53	1.44	1.37	1.36	1.33	1.37	1.38	1.34	1.35	1.36	1.28	1.22	1.21	1.40	1.42
Non-Associated	3.81	4.10	3.91	3.86	3.80	3.62	3.30	3.43	3.94	3.95	3.90	3.94	3.85	3.57	3.38	3.51	3.80	3.93	3.89	3.62	3.43	3.39	3.40	3.54
Alaska	0.43	0.51	0.54	0.56	0.57	0.58	0.59	0.59	0.60	0.61	0.62	0.62	0.63	0.64	0.65	1.46	2.28	2.29	2.29	2.30	2.31	2.50	2.70	2.71
Lower 48 End of Year Dry Reserve	180.1	182.6	188.2	193.7	197.7	198.2	200.2	202.2	203.0	203.6	204.2	205.3	205.0	204.7	204.6	205.4	205.0	204.7	202.1	200.2	198.1	196.7	196.1	194.5
Supplemental Gas Supplies (tcf)5	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Lower 48 Wells (thousands)	24.47	28.29	29.08	28.89	27.08	25.08	25.61	24.79	24.35	24.48	25.15	25.74	26.07	26.53	26.77	26.76	26.42	26.43	26.48	26.60	26.68	26.83	26.64	26.29

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 16. Coal Supply, Disposition, and Prices
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Production 1/																								
Appalachia	408	388	394	394	394	395	394	394	407	407	402	397	392	395	393	386	400	400	404	407	412	414	416	414
Interior	147	152	155	151	158	161	163	164	170	177	168	164	163	163	163	162	165	167	171	173	175	174	173	174
West	550	558	568	584	587	600	605	628	633	647	673	687	704	712	729	757	748	768	784	805	827	869	889	914
East of the Mississippi	504	485	495	494	499	505	506	506	522	525	517	510	502	507	505	497	514	517	526	530	537	538	540	540
West of the Mississippi	601	613	622	635	640	651	656	679	688	706	725	739	756	763	780	808	799	818	834	855	877	918	938	964
Total	1105	1098	1117	1129	1139	1155	1162	1185	1210	1231	1242	1249	1259	1270	1285	1305	1313	1335	1360	1385	1414	1456	1478	1503
Net Imports																								
Imports	17	21	23	25	27	29	31	32	33	34	35	36	37	38	38	39	40	40	42	43	44	45	45	46
Exports	40	42	41	40	39	39	37	36	35	33	32	31	31	32	32	32	32	30	29	27	27	28	27	24
Total	-23	-21	-18	-15	-12	-9	-7	-4	-2	1	4	5	6	6	6	7	8	10	12	16	16	17	18	22
Total Supply 2/	1083	1078	1099	1114	1127	1146	1155	1181	1209	1232	1246	1254	1265	1276	1291	1312	1321	1345	1372	1401	1430	1473	1496	1525
Consumption by Sector																								
Residential and Commercial	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Industrial 3/	63	64	64	65	65	65	64	64	65	65	65	65	65	65	66	66	66	66	66	66	67	67	67	67
of which: Coal to Liquids	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coke Plants	23	25	25	25	25	24	24	24	24	23	23	22	22	21	21	20	20	19	19	19	18	18	18	17
Electric Generators 4/	976	1004	1000	1020	1033	1052	1062	1088	1116	1140	1154	1163	1173	1185	1200	1221	1231	1255	1283	1311	1341	1384	1407	1436
Total	1066	1098	1094	1114	1127	1145	1155	1181	1209	1233	1246	1255	1265	1276	1292	1312	1322	1346	1373	1401	1431	1474	1496	1526
Discrepancy and Stock Change 5/	17	-21	5	0	0	1	0	0	0	0	0	-1	0	0	0	0	0	-1	-1	-1	0	0	-1	-1
Average Minemouth Price																								
(2002 dollars per short ton)	17.90	17.82	17.60	17.20	16.98	16.79	16.78	16.67	16.87	16.93	16.75	16.63	16.44	16.46	16.34	16.07	16.29	16.35	16.48	16.47	16.54	16.40	16.45	16.42
(2002$ per million Btu)	0.87	0.86	0.85	0.83	0.82	0.82	0.82	0.81	0.82	0.83	0.82	0.81	0.81	0.81	0.80	0.79	0.80	0.80	0.81	0.81	0.82	0.81	0.81	0.81
Delivered Price (2002 dollars per short ton																								
Industrial	33.23	35.51	34.98	34.63	34.40	34.15	34.26	34.16	34.30	34.26	34.00	33.93	33.84	33.73	33.62	33.43	33.38	33.45	33.51	33.49	33.43	33.27	33.11	33.03
Coke Plants	51.27	55.45	55.23	54.50	54.23	53.71	53.89	53.60	53.55	53.21	52.72	52.36	52.23	52.04	51.86	51.54	51.54	51.15	50.35	49.88	49.38	48.90	48.58	48.37
Electric Generators																								
(2002 dollars / short ton)	25.96	25.02	24.91	24.79	24.55	24.30	24.41	24.35	24.50	24.59	24.49	24.41	24.26	24.20	24.08	23.88	23.94	23.92	24.00	24.06	24.13	24.04	24.03	24.05
(2002 dollars /million Btu)	1.26	1.24	1.23	1.23	1.22	1.21	1.21	1.21	1.22	1.22	1.22	1.22	1.21	1.21	1.20	1.20	1.20	1.19	1.20	1.20	1.21	1.20	1.20	1.21
Average	26.93	26.33	26.20	26.03	25.77	25.49	25.58	25.49	25.59	25.63	25.50	25.40	25.24	25.16	25.02	24.79	24.83	24.79	24.83	24.85	24.89	24.77	24.73	24.72
Exports 7/	40.44	37.33	36.86	36.55	36.33	36.04	36.29	36.27	36.33	36.08	35.40	35.26	35.25	35.17	35.14	35.14	35.24	34.81	34.38	33.44	33.24	33.09	32.95	32.11

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 17. Renewable Energy Generating Capacity and Generation
(Gigawatts, Unless Otherwise Noted)

Electricity and Nonelectric	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Electric Power Sector 1/																								
Net Summer Capacity																								
Conventional Hydropower	78.29	78.43	78.50	78.57	78.71	78.71	78.71	78.71	78.69	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68	78.68
Geothermal 2/	2.89	2.90	2.81	2.90	3.15	3.28	3.51	3.75	3.99	4.24	4.45	4.71	4.93	5.14	5.29	5.41	5.54	5.78	5.97	6.14	6.30	6.34	6.51	6.72
Municipal Solid Waste 3/	3.49	3.61	3.65	3.66	3.92	3.95	3.98	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99
Wood and Other Biomass 4/ 5/	1.83	1.85	1.87	1.89	1.99	2.04	2.09	2.14	2.14	2.14	2.14	2.17	2.25	2.37	2.37	2.37	2.43	2.53	2.68	2.72	2.92	3.02	3.20	3.60
Solar Thermal	0.33	0.33	0.34	0.42	0.42	0.42	0.43	0.43	0.43	0.46	0.46	0.47	0.47	0.47	0.48	0.48	0.49	0.49	0.49	0.50	0.50	0.51	0.51	0.52
Solar Photovoltaic 6/	0.02	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.15	0.17	0.18	0.20	0.22	0.24	0.25	0.27	0.29	0.31	0.32	0.34	0.36	0.38	0.39	0.41
Wind	4.83	6.50	6.62	6.68	9.75	10.23	10.39	11.87	15.41	15.89	16.02	16.49	16.84	16.99	17.18	17.18	17.37	17.38	17.39	17.39	17.57	17.68	17.79	18.02
Total	91.69	93.66	93.83	94.19	98.03	98.74	99.2	101.0	104.8	105.6	105.9	106.7	107.4	107.9	108.2	108.4	108.8	109.2	109.5	109.8	110.3	110.6	111.1	111.9
Generation (billion kilowatthours)																								
Conventional Hydropower	255.8	269.7	303.1	303.4	304.1	304.4	304.4	304.5	304.4	304.3	304.4	304.4	304.4	304.5	304.5	304.5	304.6	304.6	304.6	304.7	304.7	304.7	304.8	304.8
Geothermal 2/	13.36	13.82	13.66	14.23	15.95	17.23	19.14	21.15	23.10	25.18	26.92	29.02	30.86	32.52	33.81	34.85	35.88	37.85	39.43	40.85	42.21	42.59	44.00	45.66
Municipal Solid Waste 3/	20.02	25.58	25.97	26.12	28.14	28.34	28.56	28.65	28.68	28.69	28.70	28.71	28.72	28.73	28.74	28.75	28.76	28.77	28.77	28.78	28.79	28.80	28.81	28.83
Wood and Other Biomass 5/	8.67	14.42	18.03	43.80	75.20	96.41	99.2	94.74	63.75	33.14	27.58	27.20	27.73	28.53	30.95	30.30	28.36	28.31	28.29	28.86	29.13	29.52	29.85	30.74
Dedicated Plants	6.33	10.46	11.13	11.76	13.05	13.62	13.95	14.43	14.00	13.26	13.12	13.16	13.51	14.13	14.39	14.55	14.84	15.34	16.18	16.68	17.77	18.52	19.68	21.69
Cofiring	2.34	3.96	6.90	32.04	62.14	82.79	85.27	80.31	49.74	19.89	14.46	14.04	14.22	14.40	16.56	15.74	13.52	12.96	12.11	12.19	11.36	11.00	10.17	9.05
Solar Thermal	0.54	0.52	0.52	0.72	0.80	0.81	0.82	0.83	0.84	0.90	0.93	0.94	0.96	0.97	0.98	1.00	1.01	1.02	1.04	1.05	1.06	1.08	1.09	1.11
Solar Photovoltaic 6/	0.00	0.08	0.11	0.15	0.19	0.23	0.28	0.32	0.36	0.40	0.44	0.49	0.53	0.57	0.62	0.66	0.71	0.75	0.79	0.84	0.88	0.93	0.97	1.02
Wind	10.51	17.38	19.08	19.40	29.98	31.48	32.31	37.79	50.64	52.47	52.94	54.67	55.98	56.55	57.26	57.26	57.93	57.99	58.02	58.02	58.70	59.10	59.53	60.39
Total	308.9	341.4	380.4	407.8	454.4	478.9	484.8	487.9	471.7	445.1	441.9	445.4	449.2	452.4	456.9	457.3	457.2	459.3	461.0	463.1	465.5	466.7	469.0	472.6
End Use Sector																								
Net Summer Capacity																								
Combined Heat and Power 7/																								
Municipal Solid Waste	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Biomass	3.91	3.97	4.26	4.54	4.73	4.87	4.99	5.15	5.36	5.57	5.80	6.05	6.27	6.44	6.61	6.80	6.98	7.12	7.26	7.40	7.55	7.70	7.86	8.03
Total	4.16	4.23	4.51	4.79	4.98	5.12	5.24	5.40	5.61	5.82	6.06	6.30	6.52	6.70	6.86	7.05	7.23	7.37	7.51	7.65	7.80	7.95	8.11	8.29
Other End-Use Generators 8/																								
Conventional Hydropower 9/	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Geothermal	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	0.04	0.06	0.09	0.12	0.17	0.23	0.29	0.36	0.44	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.53	0.57	0.63	0.72	0.82	0.93	1.04	1.17
Total	1.06	1.08	1.11	1.14	1.19	1.25	1.32	1.38	1.46	1.47	1.47	1.48	1.49	1.50	1.51	1.52	1.56	1.59	1.65	1.74	1.84	1.95	2.07	2.19
Generation (billion kwh)																								
Combined Heat and Power 7/																								
Municipal Solid Waste	1.84	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
Biomass	28.16	28.56	30.23	31.85	32.98	33.78	34.48	35.41	36.64	37.89	39.24	40.68	41.96	42.98	43.95	45.04	46.11	46.91	47.74	48.57	49.41	50.32	51.23	52.26
Total	30.00	30.66	32.33	33.95	35.08	35.89	36.58	37.51	38.74	39.99	41.34	42.78	44.06	45.08	46.05	47.14	48.21	49.01	49.84	50.67	51.51	52.42	53.33	54.36
Other End-Use Generators 8/																								
Conventional Hydropower 9/	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	4.11	4.11	4.11
Geothermal	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	0.09	0.12	0.18	0.26	0.37	0.49	0.63	0.76	0.93	0.95	0.97	0.99	1.00	1.02	1.04	1.06	1.14	1.23	1.35	1.54	1.76	1.99	2.23	2.51
Total	4.20	4.23	4.29	4.37	4.48	4.60	4.74	4.87	5.04	5.06	5.08	5.09	5.11	5.13	5.15	5.17	5.25	5.34	5.46	5.65	5.87	6.10	6.34	6.61

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 18. Renewable Energy Consumption by Sector and Source 1/
(Quadrillion Btu per Year)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Marketed Renewable Energy 2/																								
Residential	0.39	0.41	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.40
Wood	0.39	0.41	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.40	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.40
Commercial	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Biomass	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Industrial 3/	1.66	1.66	1.72	1.79	1.84	1.87	1.91	1.95	2.00	2.05	2.10	2.16	2.21	2.26	2.30	2.35	2.40	2.44	2.48	2.52	2.56	2.60	2.65	2.70
Conventional Hydroelectric	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Municipal Solid 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
Biomass	1.60	1.61	1.67	1.74	1.79	1.82	1.85	1.89	1.95	2.00	2.05	2.11	2.16	2.20	2.25	2.30	2.35	2.39	2.43	2.47	2.51	2.55	2.60	2.65
Transportation	0.17	0.23	0.26	0.27	0.27	0.29	0.31	0.34	0.36	0.39	0.41	0.42	0.42	0.46	0.47	0.47	0.47	0.48	0.48	0.49	0.50	0.51	0.51	0.52
Ethanol used in E85 4/	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
Ethanol used in Gasoline Ble	0.17	0.23	0.26	0.27	0.27	0.29	0.31	0.34	0.36	0.39	0.41	0.42	0.42	0.46	0.47	0.46	0.47	0.47	0.48	0.49	0.50	0.50	0.51	0.52
Electric Generators 5/	3.69	3.80	4.21	4.49	5.02	5.30	5.40	5.48	5.35	5.14	5.15	5.23	5.30	5.37	5.44	5.47	5.49	5.56	5.61	5.66	5.71	5.73	5.78	5.85
Conventional Hydroelectric	2.75	2.78	3.12	3.12	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13
Geothermal	0.30	0.30	0.30	0.32	0.37	0.41	0.47	0.54	0.60	0.67	0.72	0.79	0.85	0.90	0.94	0.98	1.01	1.07	1.13	1.17	1.22	1.23	1.28	1.33
Municipal Solid Waste 6/	0.34	0.35	0.36	0.36	0.39	0.39	0.39	0.39	0.39	0.39	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Biomass	0.17	0.19	0.23	0.48	0.81	1.03	1.06	1.01	0.69	0.39	0.34	0.33	0.34	0.34	0.37	0.36	0.34	0.34	0.34	0.34	0.34	0.34	0.35	0.35
Dedicated Plants	0.11	0.13	0.13	0.11	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.20	0.21	0.22	0.24
Cofiring	0.06	0.06	0.10	0.37	0.69	0.90	0.93	0.88	0.56	0.25	0.19	0.19	0.19	0.19	0.21	0.20	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.11
Solar Thermal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	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	0.00	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	0.13	0.18	0.20	0.20	0.31	0.32	0.33	0.39	0.52	0.54	0.54	0.56	0.58	0.58	0.59	0.59	0.60	0.60	0.60	0.60	0.60	0.61	0.61	0.62
Total Marketed Renewable Energ	6.01	6.20	6.70	7.05	7.63	7.97	8.13	8.26	8.22	8.08	8.16	8.30	8.44	8.59	8.72	8.79	8.87	8.98	9.07	9.17	9.28	9.34	9.45	9.58
Sources of Ethanol																								
From Corn	0.17	0.23	0.26	0.27	0.27	0.29	0.31	0.34	0.36	0.39	0.40	0.41	0.41	0.45	0.45	0.45	0.45	0.46	0.46	0.46	0.47	0.47	0.47	0.47
From Cellulose	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	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05
Total	0.17	0.23	0.26	0.27	0.27	0.29	0.31	0.34	0.36	0.39	0.41	0.42	0.42	0.46	0.47	0.47	0.47	0.48	0.48	0.49	0.50	0.51	0.51	0.52
Non-Marketed Renewable Energy -- Selected Consumption 7/																								
Residential	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
Solar Hot Water Heating	0.02	0.02	0.02	0.02	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	0.04	0.04	0.04	0.04
Geothermal Heat Pumps	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
Solar Photovoltaic	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
Commercial	0.02	0.02	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
Solar Thermal	0.02	0.02	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
Solar Photovoltaic	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	0.01	0.01	0.01

nrgbill00.d011304d - Conference Energy Bill with no Research and Development

Table 19. Carbon Dioxide Emissions by Sector and Source
(million metric tons carbon dioxide equivalent, unless otherwise noted)

Sector and Source	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residential																								
Petroleum	104.0	104.2	109.2	109.7	110.6	110.8	110.9	110.4	110.2	110.1	110.2	109.6	109.3	108.9	108.7	108.1	107.7	107.3	107.0	106.2	105.8	105.3	105.1	104.3
Natural Gas	267.2	275.2	281.1	282.8	287.5	291.3	294.8	297.2	300.4	302.6	304.9	305.3	307.0	308.7	311.5	313.2	316.4	319.1	322.1	322.4	323.8	325.6	328.9	330.8
Coal	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0
Electricity	816.7	825.2	818.3	826.3	830.0	841.3	855.4	864.4	884.4	902.6	917.8	923.2	930.7	937.8	950.1	960.0	970.2	985.4	1003	1015	1031	1050	1067	1080
Total	1189	1206	1210	1220	1229	1245	1262	1273	1296	1316	1334	1339	1348	1357	1371	1382	1395	1413	1433	1445	1461	1482	1503	1517
Commercial																								
Petroleum	52.6	60.9	61.5	62.7	63.5	64.3	64.8	65.3	66.0	66.5	66.9	67.4	67.9	68.3	68.7	69.1	69.3	69.5	69.7	70.1	70.5	71.0	71.4	71.7
Natural Gas	169.4	171.9	168.9	172.4	177.2	180.7	183.0	185.9	189.1	191.5	193.1	194.4	196.0	197.5	199.1	201.5	204.4	207.1	209.3	210.9	212.4	214.3	216.8	220.0
Coal	9.2	9.3	9.0	9.3	9.4	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.2	9.2	9.2	9.2	9.2	9.2	9.2
Electricity	778.0	780.8	787.6	812.1	828.1	848.8	869.6	889.5	919.1	947.5	969.1	985.8	1001	1014	1031	1052	1071	1095	1119	1143	1167	1194	1217	1243
Total	1009	1023	1027	1056	1078	1103	1127	1150	1184	1215	1238	1257	1274	1289	1308	1332	1354	1381	1408	1434	1459	1489	1514	1543
Industrial 1/																								
Petroleum	412.8	345.3	338.2	354.4	360.4	365.2	368.3	365.0	365.2	366.1	369.4	375.5	380.8	382.8	387.4	391.4	395.6	399.3	404.5	410.3	414.1	417.3	419.8	422.7
Natural Gas 2/	432.7	439.0	457.2	470.1	481.7	491.7	498.5	510.1	523.7	533.1	539.1	545.1	549.4	555.4	561.4	573.8	587.3	593.9	600.5	603.5	610.6	619.6	629.7	641.3
Coal	185.1	195.8	196.2	196.2	195.4	194.6	193.5	192.9	192.1	191.2	190.2	189.4	188.5	187.3	186.4	185.7	185.4	184.2	183.5	182.6	182.2	181.8	181.3	181.3
Electricity	640.0	629.4	630.2	645.2	652.8	664.6	672.7	680.1	696.4	712.9	724.8	733.8	740.2	746.6	756.8	770.1	780.1	789.1	801.6	814.4	830.4	849.4	864.3	882.5
Total	1671	1609	1622	1666	1690	1716	1733	1748	1777	1803	1823	1844	1859	1872	1892	1921	1948	1966	1990	2011	2037	2068	2095	2128
Transportation																								
Petroleum 3/	1811	1849	1910	1967	2018	2060	2101	2143	2188	2229	2272	2317	2357	2391	2427	2465	2503	2538	2574	2611	2651	2692	2736	2785
Natural Gas 4/	35.2	36.8	36.6	37.0	37.3	38.0	38.2	38.8	40.0	40.5	40.9	41.5	41.6	42.1	42.1	44.6	47.8	48.6	49.1	48.8	48.9	49.4	50.5	51.4
Other 5/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	14.2	14.6	14.6	15.0	15.1	15.4	15.7	15.9	16.4	16.8	17.1	17.4	17.6	17.8	18.1	18.4	18.8	19.2	19.6	20.0	20.5	21.0	21.5	22.0
Total	1861	1900	1961	2019	2070	2113	2155	2198	2244	2286	2330	2376	2417	2451	2487	2528	2569	2605	2643	2680	2720	2763	2808	2858
Total by Delivered Fuel																								
Petroleum 3/	2381	2359	2419	2494	2552	2600	2645	2684	2729	2772	2819	2870	2915	2951	2991	3034	3075	3114	3155	3198	3241	3286	3333	3383
Natural Gas	904.4	923.0	943.7	962.2	983.8	1002	1015	1032	1053	1068	1078	1086	1094	1104	1114	1133	1156	1169	1181	1186	1196	1209	1226	1244
Coal	195.4	206.2	206.4	206.6	205.9	205.1	204.0	203.3	202.5	201.7	200.7	199.8	198.9	197.7	196.7	196.1	195.7	194.6	193.9	192.9	192.5	192.1	191.6	191.6
Other 5/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electricity	2249	2250	2251	2299	2326	2370	2413	2450	2516	2580	2629	2660	2689	2717	2756	2800	2840	2889	2943	2993	3048	3114	3170	3227
Total	5729	5738	5819	5961	6068	6177	6277	6369	6501	6621	6726	6816	6897	6969	7059	7163	7266	7366	7474	7569	7678	7801	7920	8046
Electric Power Sector 6/																								
Petroleum	72.2	76.7	42.0	49.7	46.0	46.9	51.8	47.7	47.2	52.2	60.7	66.8	70.9	70.3	72.6	68.0	61.0	60.2	60.3	63.9	65.8	63.2	63.2	60.4
Natural Gas	299.1	265.5	305.6	308.2	315.3	323.2	339.3	334.6	344.8	360.6	377.4	387.6	397.1	400.9	411.8	428.5	447.0	452.4	453.7	445.9	443.3	438.2	448.6	455.8
Coal	1878	1908	1903	1941	1965	2000	2022	2068	2124	2167	2191	2206	2221	2245	2272	2304	2332	2376	2429	2483	2539	2613	2658	2711
Total	2249	2250	2251	2299	2326	2370	2413	2450	2516	2580	2629	2660	2689	2717	2756	2800	2840	2889	2943	2993	3048	3114	3170	3227
Total by Primary Fuel 7/																								
Petroleum 3/	2453	2436	2461	2544	2598	2647	2697	2732	2776	2824	2879	2937	2986	3022	3064	3102	3136	3174	3216	3262	3307	3349	3396	3444
Natural Gas	1203	1188	1249	1270	1299	1325	1354	1367	1398	1428	1455	1474	1491	1505	1526	1562	1603	1621	1635	1631	1639	1647	1674	1699
Coal	2073	2114	2109	2147	2171	2205	2226	2271	2327	2369	2391	2406	2420	2443	2469	2500	2527	2571	2623	2676	2732	2805	2850	2903
Other 5/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	5729	5738	5819	5961	6068	6177	6277	6369	6501	6621	6726	6816	6897	6969	7059	7163	7266	7366	7474	7569	7678	7801	7920	8046
Carbon Dioxide Emissions (tons carbon dioxi equivalent per person)	19.8	19.7	19.8	20.1	20.3	20.5	20.6	20.8	21.0	21.2	21.4	21.5	21.6	21.6	21.8	21.9	22.0	22.2	22.3	22.5	22.6	22.8	23.0	23.2