

Legislation and Regulations

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Introduction

Because analyses by the Energy Information Administration (EIA) are required to be policy-neutral, the projections in this *Annual Energy Outlook 2000* (*AEO2000*) are based on Federal, State, and local laws and regulations in effect on July 1, 1999. The potential impacts of pending or proposed legislation, regulations, and standards and sections of existing legislation for which funds have not been appropriated are not reflected in the projections.

Federal legislation incorporated in the projections includes the Omnibus Budget Reconciliation Act of 1993, which adds 4.3 cents per gallon to the Federal tax on highway fuels [1]; the National Appliance Energy Conservation Act of 1987; the Clean Air Act Amendments of 1990 (CAAA90); the Energy Policy Act of 1992 (EPACT); the Outer Continental Shelf Deep Water Royalty Relief Act of 1995; the Tax Payer Relief Act of 1997; and the Federal Highway Bill of 1998, which includes an extension of the ethanol tax credit. *AEO2000* assumes the continuation of the ethanol tax credit through 2020.

AEO2000 also assumes that State taxes on gasoline, diesel, jet fuel, M85, and E85 will increase with inflation and that Federal taxes on those fuels will continue at 1998 levels in nominal terms. Although the above tax and tax credit provisions include “sunset” clauses that limit their duration, they have been extended historically, and *AEO2000* assumes their continuation throughout the forecast.

AEO2000 also incorporates regulatory actions of the Federal Energy Regulatory Commission (FERC), including Orders 888 and 889, which provide open access to interstate transmission lines in electricity markets, and other FERC actions to foster more efficient natural gas markets. State plans for the restructuring of the electricity industry and State renewable portfolio standards are incorporated as enacted. As of July 1, 1999, 24 States had passed legislation or promulgated regulations to restructure their electricity markets. (See “Issues in Focus,” pages 18 and 20, for discussions of renewable portfolio standards and competitive electricity prices.)

CAAA90 requires a phased reduction in vehicle emissions of regulated pollutants, to be met primarily through the use of reformulated gasoline. In addition, under CAAA90, there is a phased reduction in annual emissions of sulfur dioxide by electricity

generators, which in general are capped at 8.95 million tons a year in 2010 and thereafter, although “banking” of allowances from earlier years is permitted. CAAA90 also calls for the U.S. Environmental Protection Agency (EPA) to issue standards for the reduction of nitrogen oxide (NO_x) emissions, but those standards have not been finalized and are not included in the forecast. Their status is discussed later in this section. The impacts of CAAA90 on electricity generators are discussed in “Market Trends” (see page 91).

The provisions of EPACT focus primarily on reducing energy demand. They require minimum building efficiency standards for Federal buildings and other new buildings that receive federally backed mortgages. Efficiency standards for electric motors, lights, and other equipment are required, and Federal, State, and utility vehicle fleets are required to phase in vehicles that do not rely on petroleum products. The projections include only those equipment standards for which final actions have been taken and which specify efficiency levels, including the refrigerator standard that goes into effect in July 2001. A discussion of the status of efficiency standards is included in “Issues in Focus” (see page 34).

Climate Change Action Plan

The *AEO2000* reference case projections include analysis of provisions of the Climate Change Action Plan (CCAP)—44 actions developed by the Clinton Administration in 1993 to achieve the stabilization of greenhouse gas emissions (carbon dioxide, methane, nitrous oxide, and others) in the United States at 1990 levels by 2000. CCAP was formulated as a result of the Framework Convention on Climate Change, which was adopted at the United Nations on May 9, 1992, and opened for signature at Rio de Janeiro on June 4. As part of the Framework Convention, the economically developed signatories, including the United States, agreed to take voluntary actions to reduce emissions to 1990 levels.

Energy combustion is the primary source of anthropogenic (human-caused) carbon emissions. *AEO2000* estimates of emissions from fuel combustion do not include emissions from activities other than fuel combustion, such as landfills and agriculture, nor do they take into account sinks that absorb carbon, such as forests. Of the 44 CCAP actions, 13 are not related either to energy combustion or to carbon dioxide and, consequently, are not incorporated

in the analysis. The projections do not include any other carbon mitigation actions that may be enacted as a result of the Kyoto Protocol, agreed to on December 11, 1997 (see “Issues in Focus,” page 37, for further discussion of carbon emissions and the Protocol).

Climate Wise and Climate Challenge are two programs cosponsored by EPA and the U.S. Department of Energy (DOE) to foster voluntary reductions in emissions on the part of industry and electricity generators, as reported in the EIA publication *Voluntary Reporting of Greenhouse Gases 1997* [2]. The *AEO2000* reference case includes analysis of the impacts of both programs (see Appendix G).

Energy From Biomass Encouraged

In August 1999, President Clinton issued an Executive Order aimed at stimulating the use of biomass—including trees, crops, and agricultural waste—as a source of energy and other “biobased products” [3]. Biomass can be used not only to generate electricity and to fuel automobiles but also to produce an array of pharmaceuticals and other materials, including plastics, inks, and dyes. The Executive Order is designed to speed up technical advances and adoption of both bioenergy and biobased products. It is aimed at increasing the use of biofuels to offset fossil fuel consumption, which would reduce both reliance on foreign oil and carbon emissions in the United States. Increased use of biofuels, such as ethanol, would also expand markets for farm and forest waste products. Pursuant to the order, an interagency council has been established to foster research and development for bioenergy and biobased products.

Comprehensive Electricity Competition Act

On April 15, 1999, the Administration submitted its proposed Comprehensive Electricity Competition Act (CECA) to Congress. CECA is designed to facilitate the development of competitive generation markets throughout the United States. Its provisions are aimed at empowering and encouraging States to establish competitive markets for electricity generation, encouraging continued investments in energy efficiency and renewable generating resources, and ensuring that all consumers benefit from competition in the electricity generation sector. Bills have been submitted in both the House (H.R. 1828,

Mr. Bliley, May 17, 1999) and the Senate (S. 1047, Mr. Murkowski, May 13, 1999) and referred to the appropriate committees. Because CECA has not been enacted, its provisions are not incorporated in the *AEO2000* reference case; however, the renewable portfolio standard of CECA—independent of the other CECA provisions—is analyzed in a sensitivity case (see “Issues in Focus,” page 18).

CECA sets January 1, 2003, as the date when all consumers will have the ability to choose their electricity suppliers; however, a State can opt out of competition if it finds—through public proceedings—that consumers would be better off without a move to competition. To encourage States to choose competition, they are given the authority to impose reciprocity requirements on companies that are not within their jurisdictions. In other words, if a State chooses to open its markets to competition, it can prevent out-of-State companies from competing unless their home markets are also open to competition. The opt-out provision was included to allay concerns that companies operating in States with regulated markets might be able to sell power at below-market rates in neighboring States with competitive markets.

CECA includes provisions to clarify State and Federal authority over transmission services, and it would give States clear authority to establish retail electricity competition. There has been concern that the Federal Power Act is not clear about the authority of the FERC with respect to its formation of regional transmission groups or its imposition of fees to recover stranded costs. To prevent litigation on these issues, CECA would give the FERC authority to approve interstate transmission compacts, to impose charges to recover retail stranded costs if they are not collectible through other means, and to require the establishment of regional independent system operators. It also contains a provision clarifying that the Federal Power Act does not prohibit States from ordering retail competition or from collecting fees, such as those that may be needed to recover stranded costs, on retail electricity sales within the State.

CECA also contains provisions that would continue investments in energy efficiency and renewable generating sources in competitive electricity markets. It would create a Federal public benefits fund of approximately \$3 billion a year that would be used to support low-income customers, implement energy

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conservation and efficiency programs, provide consumer information, and support emerging generating technologies. To facilitate the development of combined heat and power facilities, an 8-percent investment tax credit would be provided for combined heat and power facilities.

Renewable generating technologies would be supported through the creation of a Federal renewable portfolio standard (RPS). The RPS would require that, by 2010, 7.5 percent of total retail electricity sales be generated at facilities using nonhydroelectric renewable energy sources. Operators of qualifying renewable facilities would receive a credit for each kilowatt-hour of electricity they generate. The credits could be held for use by the plant operator or sold to others who need them to meet the 7.5-percent required renewable share.

The renewable credit system is intended to operate like the sulfur dioxide allowance trading system created in CAAA90. It should allow developers to build new renewable facilities where they are most economical, while selling credits wherever they are needed. Small renewable facilities (less than 20 kilowatts) located at customer sites would be supported through the establishment of net metering service, which would allow them to compete against the full retail price of electricity rather than the much lower wholesale price they would be offered if they sought to sell power to a local utility. Once these new programs for energy efficiency and renewable technologies are in place, the current requirement in Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA), that utilities purchase power from qualifying small power and renewable facilities, would be removed under the proposed legislation.

CECA also would repeal the Public Utility Holding Company Act of 1935 (PUHCA), originally put in place to protect consumers from market abuses by large power companies that operated in many States with no single regulatory body overseeing their operations. To ensure that the formation of larger companies does not harm consumers, CECA would give the FERC responsibility to address the impacts of corporate mergers and acquisitions. Through amendments to the Federal Power Act, the FERC would have authority to “examine the books, accounts, memoranda, and other records of any company in a holding company system, or any affiliate thereof.” It would also be responsible for reviewing mergers or consolidations among electric utility holding

companies and generation-only companies. If needed, the FERC could require changes, such as forcing independent system operation or divestiture of generation assets, to remedy potential market power problems.

Taken together, these and other provisions of CECA would standardize restructured electricity markets throughout the Nation. The amendments to the Federal Power Act clarifying State and Federal authority and responsibilities are intended to reduce the possibility that deregulation efforts will be repeatedly challenged in court. In addition, investments in energy efficiency and renewable energy technologies would clearly be stimulated by CECA, compared with a situation without such incentives. At this time, however, it is impossible to tell which provisions of CECA will be included in any legislation passed by Congress.

New Environmental Regulations on Hold

The *Annual Energy Outlook 1999 (AEO99)* incorporated the Ozone Transport Rule issued by the EPA under the auspices of the Clean Air Act. The rule, also referred to as the “NO_x State Implementation Plan Call” (NO_x SIP Call), set NO_x emission caps for the summer season (May through September) in 22 Eastern and Midwestern States and the District of Columbia. The States were required to meet their assigned emission caps starting in 2003. The EPA was working to develop a regional cap and a program to ensure that the required emission reductions would be achieved at the lowest possible cost.

Two court decisions in 1999 have effectively put the SIP Call on hold. In one ruling, the U.S. Court of Appeals in the District of Columbia (D.C. Circuit) remanded the new national ambient air quality standard for ground-level ozone. Because NO_x emissions are a precursor to the formation of ground-level ozone, the new standards provided some of the technical support for the SIP Call. In a subsequent decision, the D.C. Circuit granted a motion to stay the requirement that States file their new implementation plans to comply with the SIP Call by September 1999.

In May 1999 the EPA announced plans to go forward with a revised SIP Call based on the national ambient air quality standards that are currently in place (based on Section 126 of the Clean Air Act). Under this plan, only 12 States and the District of Columbia

would be issued summer season NO_x emission caps. In June 1999, however, the EPA announced an interim stay of the rules through November 30, 1999; and to date, the caps for the 12 States and the District of Columbia have not been finalized. Negotiations are ongoing among the States, EPA, and other interested parties, but no resolution is expected before December 1999. As a result, the NO_x SIP Call is not included in *AEO2000*.

Tier 2 Vehicle Emissions and Gasoline Sulfur Standards

The CAAA90 set “Tier 1” exhaust emission standards for carbon monoxide (CO), hydrocarbons, NO_x, and particulate matter (PM) for light-duty vehicles and trucks beginning with model year 1994. CAAA90 also required the EPA to study further “Tier 2” emission standards that would take effect in model year 2004. The EPA provided a Tier 2 study to Congress in July 1998. The study concluded that tighter vehicle standards are needed to achieve attainment of National Ambient Air Quality Standards (NAAQS) for ozone and PM between 2007 and 2010. In May 1999, the EPA published a Notice of Proposed Rulemaking (NPRM) on “Tier 2” Emission Standards for Vehicles and Gasoline Sulfur Standards for Refineries [4]. The NPRM includes standards that would significantly reduce the sulfur content of gasoline throughout the United States to ensure the effectiveness of emission control technologies that will be needed to meet the Tier 2 emissions targets. Recently, however, a U.S. Circuit Court ruling determined that the EPA was not authorized to set new standards without indicating their benefits.

The proposed standards would require manufacturers to begin producing vehicles in 2004 that are 77 percent cleaner than those being sold today. The standards would also be extended to light-duty trucks, minivans, and sport utility vehicles (SUVs), which currently produce 3 to 5 times more pollution than do cars. According to the NPRM, the proposed Tier 2 regulations would require light-duty vehicles (below 6,000 pounds) to meet a sales-weighted average of 0.07 grams of NO_x emissions per mile and approximately 0.01 to 0.02 grams of PM per mile by 2004 [5]. The previous Tier 1 emissions standards were set at 0.6 grams per mile for NO_x and 0.1 grams per mile for particulates [6]. The EPA has estimated that the costs of the Tier 2 standards to consumers

would range from \$100 per car to \$200 per light truck [7].

In 1999, the National Research Council (NRC) released its fifth annual review of the Partnership for a New Generation of Vehicles (PNGV) [8]. In its review, the NRC commented, “. . . the most difficult technical challenge facing the CIDI (compression ignition direct injection-diesel) engine program will be meeting the standards for NO_x and particulate emissions. In addition, meeting an even more stringent research objective (0.01 grams/mile) for particulate matter instead of the 0.04 grams/mile PNGV target would require additional technological breakthroughs.” The NRC noted that the Tier 2 regulations may affect the commercial viability of many advanced vehicles. Meeting the Tier 2 proposed standards may: require trading off emissions levels for fuel economy by redesigning engines; add significant cost to a technology as a result of the requirement for exhaust catalyst systems and their potential lack of effectiveness; stifle development of diesel technologies as a result of the potential health effects of particulates; and result in new specifications for diesel fuel or development of advanced low-emission fuels.

Because automotive emissions and fuel sulfur are linked, the NPRM also includes tighter standards on the sulfur content of gasoline. Sulfur reduces the effectiveness of the catalyst used in the emission control systems of advanced technology vehicles, increasing their emissions of hydrocarbons, CO, and NO_x. As a result, gasoline with significantly reduced sulfur levels will be required for the control systems to work properly and meet the new Tier 2 standards.

The NPRM sets the average annual sulfur content of gasoline at 30 parts per million (ppm), compared with the current standard of 1,000 ppm. The proposed standard is equivalent to the current standard for gasoline in California and is about one-tenth of the national average sulfur content. Because the standards will require refiners to invest in sulfur-removing processes, small refiners would be given an additional 4 years to comply. The rulemaking has not yet been finalized, however, and the Tier 2 standards and low-sulfur gasoline requirement are not included in the *AEO2000* reference case. The proposed changes in gasoline sulfur have been included in an alternative case, which is discussed in the “Issues in Focus” section of this report (see page 30).

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Diesel Fuel Quality Standards

In May 1999 the EPA published an Advanced Notice of Proposed Rulemaking on Diesel Fuel Quality [9], along with the closely linked Tier 2 NPRM. The proposed Tier 2 emissions standards apply to all vehicles, regardless of what type of fuel is used. The EPA is looking at requiring improvements in the quality of diesel fuel that would enable diesel engine technologies to meet the new Tier 2 standards for NO_x and PM emissions, because some of the technologies under development seem to be very sensitive to sulfur.

The current standard for all on-highway diesel allows a maximum of 500 ppm. Although the Advanced NPRM does not specify a sulfur level, engine manufacturers have indicated that new technologies will require sulfur to be reduced to 30 ppm or lower. The new standards will initially apply to diesel used for light-duty vehicles (a small part of the market) but may be extended to heavy-duty use at a later time. The *AEO2000* reference case does not include the proposed change to the standard for sulfur in diesel fuel, which is only in the early stages of the rulemaking process.

California Ban of Methyl Tertiary Butyl Ether (MTBE)

In March 1999, California Governor Gray Davis issued an Executive Order announcing a ban on the use of MTBE in gasoline by the end of 2002. MTBE is blended with gasoline to raise its oxygen content (reducing emissions of carbon monoxide and air toxics) and enhance its octane rating. The use of MTBE climbed in the 1990s, when it was used to meet oxygen requirements for cleaner burning reformulated and oxygenated gasoline. Although these fuel programs have been hailed as a success in improving air quality, concerns have arisen about their impact on water quality. The California ban is aimed at protecting water resources from MTBE, which even at small concentrations results in an unpleasant taste and odor. Leaking underground pipes and storage tanks have resulted in the contamination of 56 drinking water sites in California [10] and between 5 and 10 percent of the water supplies in areas of the United States required to use reformulated or oxygenated gasoline [11].

California is governed by its own set of gasoline quality standards, but areas that do not meet Federal

ozone standards—including Los Angeles, San Diego, and Sacramento—are bound by the 2 percent oxygen (by weight) Federal requirement. The California Energy Commission has requested that the EPA waive the oxygen requirement, claiming that an alternative gasoline formulation that does not include oxygen can give similar emissions reductions. The Commission is concerned about maintaining the oxygen requirement without MTBE, fearing that reliance on ethanol as a replacement for MTBE will lead to declining air quality and higher gasoline prices. To date, the EPA has not granted an oxygen waiver for California but is working with the State to resolve the issue. There have been several proposals by California Senators Barbara Boxer and Dianne Feinstein and Representative Brian Bilbray to waive the oxygen requirement in California.

AEO2000 reflects the California ban on MTBE but, in keeping with the assumption of current laws only, assumes that the existing oxygen requirement will stay in place. In the absence of an oxygen waiver, gasoline used in Los Angeles, San Diego, and Sacramento—which account for about two-thirds of the State's gasoline consumption—would require another oxygenate to replace MTBE. Ethanol is expected to be the predominant oxygenate used to replace MTBE. A study done for the California Energy Commission estimated additional ethanol requirements of about 75,000 barrels per day in the absence of an oxygen waiver [12]. In 1998, ethanol used for gasoline blending totaled 91,000 barrels per day nationally [13], and total production capacity was about 112,000 barrels per day [14]. Most of the additional ethanol will be drawn from the Midwest, where it is currently being used for octane blending. Some growth in ethanol production is also expected in California. The study put the cost of the MTBE ban without an oxygen waiver at between 6 and 7 cents per gallon of gasoline initially, declining to about 2 cents per gallon after about 6 years [15].

Concerns about MTBE in drinking water have spread beyond California and evolved into a national debate. The State of Maine, which had voluntarily joined the Federal reformulated gasoline (RFG) program, opted out in 1999 because of water quality concerns. Although the deadline for opting out of the RFG program has passed, the New Hampshire legislature recently passed a bill instructing the State to pursue an opt-out waiver from the EPA [16]. The Texas legislature proposed a gasoline formulation to be used in the eastern part of the State that would

provide reduced emissions without requiring oxygenates [17].

In addition to State-level actions, there have been numerous legislative proposals in the U.S. Congress related to the MTBE issue. In July, a panel of experts convened by the EPA to study the issue recommended that the use of MTBE in gasoline be significantly reduced and that Congress pass legislation to remove the oxygen requirement in RFG. The panel's recommendations are not binding, however, and there is still considerable uncertainty about how the issue will play out. The "Issues in Focus" section of *AEO2000* includes further discussion of proposed MTBE legislation and explores the market effects of MTBE reduction (see page 32).

Executive Order 13123: Greening the Government Through Efficient Energy Management

On June 3, 1999, the President signed an Executive Order to promote improvement in the way the Federal Government manages its energy use. The goals stated in Executive Order 13123 [18] call for all Federal agencies to reduce energy consumption per square foot in their facilities (except for industrial and laboratory facilities) by 30 percent by 2005 and 35 percent by 2010 relative to 1985 levels, through the use of life-cycle cost-effective measures. The goal for Federal industrial and laboratory facilities is to reduce energy consumption per square foot, unit of production, or other applicable measure by 20 percent by 2005 and 25 percent by 2010 relative to 1990 levels. Each Federal agency also is given a goal to reduce greenhouse gas emissions attributed to facility energy use by 30 percent by 2010 relative to 1990 levels. Federal agencies are directed to reduce petroleum use within their facilities, reduce water consumption and associated energy use, strive to expand the use of renewable energy, and strive to reduce total energy use and associated greenhouse gas and other airborne emissions, measured at the source.

In order to meet the stated goals, life-cycle cost analysis is to be used for purchases of new equipment, the design of new buildings, and plans for energy and water efficiency projects. When the analysis determines them to be cost-effective, several strategies are to be used, including maximum use of Energy Star and other energy-efficient products, alternative financing (such as Energy Savings

Performance contracts), sustainable building design, and renewable energy technologies. Federal agencies are to prepare annual reports to the President describing their progress toward meeting the goals of the order. The reports will be used to develop energy scorecards evaluating each agency's progress, which will be submitted to the President.

Executive Order 13123 supersedes and builds on a previous order mandating Federal agencies to reduce energy use by 30 percent by 2005 relative to 1985 levels. A number of tools are in place to assist agencies as a result of the earlier order and the National Energy Conservation Policy Act, as amended by the Energy Policy Act of 1992. Additional principles, standards, and guidance are currently being developed to assist agencies in all aspects of compliance with the new order.

The order calls for 2,000 solar energy systems to be installed at Federal facilities by the end of 2000 and 20,000 by 2010 in support of the Administration's Million Solar Roofs initiative. Toward that goal, in June 1999 DOE awarded more than \$1.5 million for projects that will install 109 renewable energy systems at Federal facilities. An estimate of the current and planned installations of grid-connected solar photovoltaic energy systems at Federal facilities is included in *AEO2000*, resulting in cumulative energy savings that reach 8 trillion British thermal units (Btu) by 2020 [19]. In addition, Federal implementation of the strategies outlined in Executive Order 13123, such as adoption of Energy Star and other energy-efficient products and sustainable building design, were considered in developing projections of commercial sector energy use for *AEO2000*. Federal improvements in energy management as a result of Executive Order 13123 are projected to save 108 trillion Btu in commercial sector energy use and reduce carbon emissions attributable to the commercial sector by 1.8 million metric tons cumulatively over the forecast.

Low-Emission Vehicle Program

The Low-Emission Vehicle Program (LEVP) was originally passed into legislation in 1990 in the State of California. It began as the implementation of a voluntary opt-in pilot program under the purview of CAAA90, which included a provision that other States could opt in to the California program and achieve lower emissions levels than required by CAAA90. Both New York and Massachusetts chose

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to opt in to the LEVP, implementing the same mandates as California.

The LEVP was an emissions-based policy, setting sales mandates for three categories of low-emission vehicles according to their relative emissions of air pollutants: low-emission vehicles (LEVs), ultra-low-emission vehicles (ULEVs), and zero-emission vehicles (ZEVs). The only vehicles certified as ZEVs by the California Air Resources Board (CARB) were dedicated electric vehicles [20].

The LEVP was originally scheduled to begin in 1998, with a requirement that 2 percent of the State's vehicle sales be ZEVs, increasing to 5 percent in 2001 and 10 percent in 2003. In California, however, the beginning of mandated ZEV sales was rolled back to 2003, because it was determined that ZEVs would not be commercially available in sufficient numbers or at sufficiently competitive cost to allow the targets to be met. In Massachusetts and New York, after several years of litigation, the Federal courts overturned the original LEVP mandates in favor of the same deferred schedule adopted by California.

On November 5, 1998, the CARB amended the original LEVP to include ZEV credits for advanced technology vehicles. According to the CARB, qualifying advanced technology vehicles must be capable of achieving "extremely low levels of emissions on the order of the power plant emissions that occur from charging battery-powered electric vehicles, and some that demonstrate other ZEV-like characteristics such as inherent durability and partial zero-emission range" [21]. There are three components in calculating the ZEV credit, which vary by vehicle technology: (1) a baseline ZEV allowance, (2) a zero-emission vehicle-miles traveled (VMT) allowance, and (3) a low fuel-cycle emission allowance. Using advanced technology vehicles in place of ZEVs in order to comply with the LEVP mandates requires assessment of each vehicle characteristic relative to the three criteria.

The baseline ZEV allowance potentially can provide up to 0.2 credit if the advanced technology vehicle meets the following standards: (1) super-ultra-low-emission vehicle (SULEV) standards, which approximate the emissions from power plants associated with recharging electric vehicles; (2) on-board diagnostics (OBD) requirements for indicators on the dashboard that light up when vehicles are out of emissions compliance levels; (3) a 150,000-mile

warranty on emission control equipment; and (4) evaporative emissions requirements in California, which prevent emissions during refueling.

The second criterion, the zero-emission VMT allowance, will allow a maximum 0.6 credit if the vehicle is capable of some all-electric operation (to a range of at least 20 miles) that is fueled by off-vehicle sources (i.e., no on-board fuel reformers), or if the vehicle has ZEV-like equipment on board, such as regenerative braking, advanced batteries, or an advanced electric drive train. An emission allowance was also made for vehicle fuels with low fuel-cycle emissions used in advanced technology vehicles. A maximum of 0.2 credit is provided for vehicles that use fuels which emit no more than 0.01 gram of nonmethane organic gases per mile, based on the grams per gallon and the fuel efficiency of the vehicle.

Overall, large-volume manufacturers can apply ZEV credits up to a maximum of 60 percent of the original 10-percent ZEV mandate. (The original ZEV mandate required that 100 percent of the 10 percent of all light-duty vehicle sales must be ZEVs—defined only as dedicated electric vehicles—beginning with the 2003 model year.) The remaining 40 percent of the mandated ZEV sales still must be electric vehicles or variants of fuel cell vehicles that have extremely low emissions, such as hydrogen fuel cell vehicles.

Loan Guarantee Program for Qualified Oil and Gas Companies

On August 17, 1999, a bill providing emergency authority to offer loan guarantees to qualified oil and gas companies (H.R. 1664) was signed into law (Public Law No. 106-51). Section 201, the Emergency Oil and Gas Guaranteed Loan Program Act, provides a total of \$500 million in loan guarantees to qualified oil and gas companies and a maximum of \$10 million to any single oil and gas company. In order to qualify, a company must (1) be an independent oil and gas company, or a small business as defined under Section 3 of the Small Business Act (or a company based in Alaska) that is an oilfield service company; and (2) have experienced layoffs, production losses, or financial losses since January 1, 1997. All loans guaranteed under Section 201 must be repaid by December 31, 2010. Although the Act will help small producers that have been experiencing financial difficulties, it is not expected to have a major impact on the overall oil and natural gas supply picture.