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Bush Energy Policy: Overview of Major Proposals and Legislative Action

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Summary

The Bush Administration outlined its proposals for addressing the nation's energy problems in May 2001 with a 170-page report by the National Energy Policy Development Group (NEPD) titled *National Energy Policy* (NEP). In June, the President transmitted to Congress a summation of the report's concepts and strategies that call for legislative action.

Many of the Administration's legislative proposals are included in the Securing America's Future Energy Act of 2001 (H.R. 4), an omnibus energy bill approved by the House on August 1, 2001. Passage of H.R. 4 was widely interpreted as an endorsement of the Bush energy strategy, particularly since a number of key amendments opposed by the White House were defeated.

The Bush Administration NEP report is divided into eight chapters, the first two of which summarize the Administration's view of the energy challenges facing the nation, and the likely consequence of high energy prices. The remaining six chapters are developed around the several stated goals of the Bush Administration strategy – increasing energy supply while sustaining health and the environment; increasing conservation and efficiency as well as the use of renewables and alternative energy supply; expanding the national energy infrastructure; and enhancement of "national energy security and international relationships."

The report of the National Energy Policy Development (NEPD) group included more than 100 recommendations, but only about 20% of these recommendations called for legislation. Consequently, the report leaves Congress with considerable latitude to take a major role in crafting a comprehensive energy policy response.

Perhaps the most controversial element of the Bush energy strategy included in H.R. 4 is the opening of the Arctic National Wildlife Refuge (ANWR) to oil and gas leasing. An amendment to eliminate that provision was defeated on the House floor. Other major Administration proposals in H.R. 4 include energy tax incentives, boosting the Low-Income Home Energy Assistance Program (LIHEAP), review of corporate average fuel economy (CAFE) standards, research on cleaner-burning coal technologies, and offshore oil and gas leasing.

H.R. 4 also includes many provisions not in the Bush policy, and excludes some significant provisions, such as extension of the Price-Anderson Act nuclear accident liability system. It also would significantly modify some of the Administration's recommendations, such as the proposed administrative review of CAFE standards; H.R. 4 would require the standards to be raised sufficiently to save 5 billion gallons of fuel through 2010.

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Introduction

In late January 2001, the Bush Administration established a National Energy Policy Development (NEPD) Group under the direction of the Vice President. The NEPD Group's recommendations were released on May 16, 2001, in a 170-page report titled *National Energy Policy* (NEP). Subsequently, the President transmitted to Congress a summation of the report's concepts and strategies that call for legislative action.[1]

Many of the Administration's legislative proposals are included in the Securing America's Future Energy Act of 2001 (H.R. 4), an omnibus energy bill approved by the House of Representatives on August 1. Passage of H.R. 4 was widely interpreted as an endorsement of the Bush energy strategy, particularly since a number of key amendments opposed by the White House were defeated. This CRS report discusses the Administration's most significant energy proposals and describes their progress in Congress. If enacted, these proposals would constitute the most far-reaching energy legislation in nearly a decade.

The Bush Administration NEP report is divided into eight chapters, the first two of which summarize the Administration's view of the energy challenges facing the nation, and the likely consequence of high energy prices. The remaining six chapters are developed around the several stated goals of the Bush Administration strategy – increasing energy supply while sustaining health and the environment; increasing conservation and efficiency as well as the use of renewables and alternative energy supply; expanding the national energy infrastructure; and enhancement of "national energy security and international relationships."

Underlying the NEP report's recommendations is a concern that the growth in U.S. energy consumption has been sharply exceeding increases in domestic energy production. "Between 1991 and 2000, Americans used 17 percent more energy than in the previous decade, while during that same period, domestic energy production rose by only 2.3 percent."[2] This would seem to confirm the impression of Americans

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[1] "The President's Energy Legislative Agenda." June 28, 2001. Available on White House web site: [http://www.whitehouse.gov/news/releases/2001/06/energyinit.html]

[2] *National Energy Policy: Report of the National Energy Policy Development Group*, May 2001, p. 1-1.

that the nation may continue to experience periodic, and possibly prolonged, insufficiencies of electricity, gasoline, natural gas and home heating oil.

Legislative Proposals

The report of the NEPD Group included more than 100 recommendations, but only about 20% of these recommendations called for legislative action. Consequently, the report leaves Congress with considerable latitude to take a major role in crafting a comprehensive energy policy response.

Initially, comprehensive energy legislation was introduced in the Senate by both parties. Senator Murkowski introduced the National Energy Security Act of 2001 (S. 388, S. 389) in late February. A Democratic proposal (S. 596, S. 597) was introduced by Senator Bingaman March 22, 2001. There is common ground between these Republican and Democratic bills. Both propose, for example, to expedite construction of a pipeline to transport natural gas from the Alaskan North Slope; to expand efforts in "clean coal" research; to provide tax credits for renewable and alternative energy development and use; and to expand weatherization programs for homes and other structures. Clearly, all proposals include a mix of policies intended to increase supply and to reduce the demand for conventional fuels.

Many elements of the Bush energy strategy are included in the House-passed omnibus energy bill, H.R. 4. Chief among them are oil and gas leasing in ANWR, energy tax incentives, boosting the Low-Income Home Energy Assistance Program (LIHEAP), review of corporate average fuel economy (CAFE) standards, research on cleaner-burning coal technologies, and offshore oil and gas leasing. The bill also includes many provisions not in the Bush plan, and excludes some significant provisions, such as extension of the Price-Anderson Act nuclear accident liability system. House Energy and Commerce Committee leaders have indicated that such provisions may be included in additional energy legislation after the August recess.

The Senate Energy and Natural Resources Committee began marking up S. 597 before the August recess. The committee approved the energy research and development titles of the omnibus legislation, providing significantly higher authorizations than recommended by the Bush Administration. With many of the most contentious issues yet to be addressed, the markup is to resume in September.

Competing Policy Goals

The Bush energy strategy, the House-passed legislation, and the Senate Republican bills generally place more emphasis on increased supply of conventional fuels than Democratic proposals, which tend to focus more on energy conservation, efficiency, and alternative and renewable fuels development. An underlying theme of the NEP report is that energy policy in recent years has been shaped by environmental objectives for cleaner air and reduced emissions of greenhouse gases, with too little concern for energy security. Some critics of the Bush strategy have expressed concern that the tight supply and volatility in energy markets will provide cover for relaxing environmental standards or slowing the timetable for achieving certain environmental objectives. In contrast, the argument continues, the Democratic

legislation would try to limit petroleum consumption by passenger automobiles and light-duty trucks, and does not include provisions to lease the Arctic National Wildlife Refuge (ANWR) for oil and gas exploration.

At issue, too, has been the balance to be struck between short-term and long-term policies. In presenting the report of National Energy Policy Development Group, Vice President Cheney has underscored that the problems in energy markets today cannot be fixed overnight, and that there are few short-term remedies.

Another dynamic at work in the current energy policy debate is the appropriate role for the federal government and the extent to which unregulated markets can be counted upon to price fuels and allocate supply. Here, the divisions have been less clear. Some Democrats have expressed support for temporary regional controls on wholesale electricity to alleviate high prices in California. Republican critics argued that price controls send misleading signals to consumers and discourage investment in new supply capacity. At the same time, the Administration strategy favors granting the Federal Energy Regulatory Commission (FERC) eminent domain authority for siting electric transmission lines. Many Republicans are opposed to this Administration initiative, arguing that it is an intrusion on states' rights.

Major Principles of the Bush Policy

The fundamental premise of the report from the NEPD Group is that "a fundamental imbalance between supply and demand defines our nation's energy crisis. . . . This imbalance, if allowed to continue, will inevitably undermine our economy, our standard of living, and our national security."[3] The nation faces three challenges: [1] "using energy more wisely;" [2] "to repair and expand our energy infrastructure;" and [3] "increasing energy supplies while protecting the environment."[4]

What follows is a summary of the fundamental themes and major proposals of the Bush policy, with particular attention to the recommendations that will require an active congressional role. The sections are listed roughly according to their order in the Administration's NEP report, with the major exception being that the tax proposals are treated separately at the end. Each section describes the Administration's major proposals, briefly sets the policy background, and indicates how the proposals are treated in H.R. 4. The following CRS analysts from the Resources, Science, and Industry Division contributed to this overview:

- Amy Abel – electricity restructuring
- Carl Behrens – hydropower relicensing
- Mark Holt – nuclear power
- Marc Humphries – coal, energy leasing on ANWR and other federal lands

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[3] *Reliable, Affordable, and Environmentally Sound Energy for America's Future*. Report of the National Energy Policy Development Group. U.S. Govt. Print. Off., ISBN 0-16-050814-2, p. viii. Also available online at: [http://www.whitehouse.gov/energy/].

[4] *Ibid*., p. viii-ix.

- Lawrence Kumins – natural gas transportation
- Salvatore Lazzari – energy tax incentives
- Larry Parker – air quality and electricity
- Fred Sissine – energy efficiency, renewable energy
- Brent Yacobucci – transportation

Balancing Energy and the Environment

Air Quality and Electricity. The NEPD group makes only one specific recommendation that directly responds to air quality concerns surrounding increased energy production: the EPA would be directed to propose legislation to control three pollutants emitted by fossil fuel-fired powerplants: sulfur dioxide, nitrogen oxides, and mercury (p. 3-3). Using the successful acid rain reduction program as a model, the proposed legislation would establish a consistent framework of emissions caps on all powerplants (new and existing), implemented through emissions trading. Phased in over a "reasonable" time frame, the NEP asserts that the program would provide significant public health benefits and provide electric utilities and other generators with more regulatory certainty with respect to the Clean Air Act's New Source Review process for existing facilities.[5]

The effect of a multi-pollutant strategy on powerplant construction and operation would depend on three factors: (1) the stringency of the emission caps imposed; (2) the implementing time frame; and (3) the regulatory certainty provided electricity providers in exchange for meeting the caps. The NEP report goes into no detail on these factors, so until legislative language is drafted, any assessment would be purely speculative. However, there are several multi-pollutant strategies that have been proposed in the 107th Congress.[6] These bills generally called for sulfur dioxide reductions in the 50% to 75% range, nitrogen oxide reductions in the 70% to 75% range, and mercury reductions in the 90% range, with compliance required by 2005 to 2007. Whether these levels meet the NEPD Group's definition of "significantly reduce" and "reasonable period of time" is unknown. In addition, none of the bills introduced includes any provisions with respect to New Source Review. In any case, the bills provide a yardstick by which some will judge EPA's efforts.

The recommendation for multi-pollutant legislation follows very closely a similar proposal contained in the Bush/Cheney Comprehensive National Energy Policy released during the 2000 presidential campaign. The NEPD's four bullets describing the recommended multi-pollutant approach are *identical* to those contained in the

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[5] For a further discussion of multi-pollutant strategies, see Larry Parker and John Blodgett, *Electricity Generation and Air Quality: Multi-Pollutant Strategies*, CRS Report RL30878, March 13, 2001. For further information on the New Source Review process and EPA's current enforcement initiative, see: Larry Parker and John Blodgett, *Air Quality and Electricity: Enforcing New Source Review*, CRS Report RL30432, January 31, 2000; and, Larry Parker and John Blodgett, *Air Quality and Electricity: Initiatives to Increase Pollution Control*, CRS Report RS20553, updated March 9, 2001.

[6] Larry Parker, *Electricity and Air Quality: Comparison of Proposed Multi-pollutant Legislation*, CRS Report RS20894, April 18, 2001.

campaign document with one exception – carbon dioxide control is not included in the NEPD recommendation where it was in the campaign's energy plan.

This deletion reflects the President's decision not to include carbon dioxide as a pollutant to be controlled.[7] The NEPD's decision not to seek carbon dioxide control contrasts with three of the five multi-pollutant bills currently before the Congress that include carbon dioxide as a fourth pollutant to be controlled. These bills would cap carbon dioxide emissions from electric generating facilities at their 1990 levels – in line with the 1992 Framework Convention on Climate Change that the United States ratified in 1992.

H.R. 4 contains no provisions with respect to creating a multi-pollutant control strategy. The Environmental Protection Agency (EPA) continues to work on draft multi-pollutant legislation; however, whether that draft legislation will be available for consideration by the Senate during its deliberations on the NEPD proposals remains to be seen.[8]

Energy Efficiency and Energy Conservation. Increased funding authorizations are the Administration's primary legislative proposals for energy efficiency and conservation. In the NEP report, the R&D funding proposal is made contingent on a review of past funding and performance. For weatherization grants, the report proposes that annual funding be increased by $120 million over the FY2001 baseline appropriation of $150 million, which would amount to a total of $1.1 billion over four years and $2.7 billion over 10 years. Also, for the Low-Income Home Energy Assistance Program (LIHEAP), the report calls for annual spending to increase from $1.4 billion to $1.7 billion. Further, the NEP report calls for legislation to create long-term public education programs about energy and its relationship to industry and to a clean environment. Legislation to promote technologies and strategies for mitigating traffic congestion is also proposed.

The other energy efficiency and conservation provisions in the Bush report call only for administrative action. These provisions include energy conservation at federal facilities, improvements to appliance efficiency, and expansion of Energy Star programs. Further provisions call for greater use of combined heat and power (CHP), a focus on regional energy concerns, a study of ways to use the nation's energy resources more efficiently, and establishing a national priority for improving energy efficiency as measured by the energy intensity of the economy.

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[7] The NEPD recommendation with respect to climate change is to continue current efforts with respect to research, developing market-based strategies, developing new technology, and cooperation with allies. It is unlikely that the plan will significantly affect current projections of increased carbon dioxide emissions from energy consumption. See also: CRS Report RL31020,. *The National Energy Policy Report: Environmental Permitting and Regulatory Issues*.

[8] Testimony of EPA Administrator Christine Todd Whitman before the Senate Environment and Public Works Committee, July 26, 2001.

H.R. 4 covers many of the legislative proposals in the Bush energy report and would legislate on several topics for which the report recommended only administrative action. The bill includes funding authorizations, goals, and incentives for energy efficiency and conservation. It covers programs for federal conservation, grants, equipment (consumer products, distributed power, lighting), and buildings.

Regarding grant programs, the bill would authorize $1.5 billion total for weatherization grants over four years through FY2005 and $3.4 billion annually for LIHEAP through 2005. In contrast to the Administration's recommendations, H.R. 4 does not propose that DOE be allowed to transfer funds for weatherization and state energy programs to LIHEAP. Also, it would require each state energy grant recipient to have a goal of improving energy efficiency by 25% from 1990 to 2010.

Regarding the NEP report's recommendation for public education about energy, H.R. 4 calls only for DOE to consider support of education programs about maintenance of heating, ventilation, and air conditioning equipment. For the traffic congestion provision in the Bush report, there is no corresponding legislative proposal in H.R. 4.

For federal facilities, an area where the NEP report recommended administrative action, H.R. 4 would raise the energy efficiency goal from 35% in 2010 to 45% in 2020; create a grant program for "unconventional and renewable energy;" require all federal buildings to be metered by 2004; and establish a program to develop, test, and demonstrate energy-efficient technology innovations in federal buildings.

Regarding appliance efficiency, H.R. 4 would direct DOE to determine whether there are "noncovered" consumer products (such as fans and vending machines) that should be subjected to an efficiency standard and energy labels, and it would set a new one-watt standard for household appliances operating in standby mode. Also, the bill would extend the labeling list for Energy Star buildings and products to include schools, homes, and hotels, and boilers, vending machines, and windows.

H.R. 4 would not directly support CHP for brownfields (contaminated industrial sites), as recommended by the Administration, although it would provide for CHP incentives and labeling. Further, it does not address the Administration's call for a special focus on regional energy concerns. Also, H.R. 4 does not provide for a general study of ways to use the nation's resources more efficiently. While H.R. 4 has no overall priority for improving the energy intensity of the national economy, it does include a goal for major energy-consuming industries to reduce energy intensity by 25% by 2010.[9]

H.R. 4 includes several legislative proposals for energy efficiency and conservation that were not included in the Bush report. These proposals include support for distributed power hybrid systems, a "next generation" lighting initiative, a "high performance public buildings" program that provides grants to local governments, and several others. H.R. 4 also includes several tax provisions for

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[9]Although the term "energy intensity" is not defined in the bill, it presumably means a measure of energy use relative to the monetary value of the goods produced by these industries.

energy efficiency and energy conservation, which are described in another section of this report.

Energy Supply Initiatives

Energy Leasing on ANWR and Other Federal Lands. A significant amount of federal lands – both on-shore and on the outer continental shelf (OCS) – has been placed off-limits to oil and gas drilling. The U.S. Geological Survey estimates that these lands could contain sizable amounts of oil and natural gas. However, energy development on these lands has often been restricted because they are considered environmentally sensitive or unique, and efforts to open them to leasing can be highly controversial.

One of the largest potential sources of oil and gas on restricted federal lands is the 1002 Area of the Arctic National Wildlife Refuge (ANWR). The NEPD Group called for legislation to open ANWR for oil and gas leasing, which is currently prohibited by law. Supporters of leasing ANWR contend that new technology would allow oil and gas exploration, development, and production with minimal environmental damage. Opponents counter that any major industrial activity in ANWR would ruin a unique wilderness and that equivalent amounts of energy could be provided through energy conservation and other measures.

In addition to the ANWR proposals, the NEPD Group recommended that the President direct the Secretary of the Interior to examine various impediments to oil and gas exploration and development on federal lands. Further, the NEPD Group called for consideration of royalty relief or other financial incentives that might encourage more offshore oil and gas development. The underlying concern for the Administration is how to best increase U.S. domestic oil and gas supplies for future domestic consumption.

H.R. 4 includes the above-mentioned Administration proposals. In addition, H.R. 4 includes a provision that expands the existing royalty-in-kind program by allowing the Secretary of the Interior to require that all royalties from oil and gas leases be paid "in kind" – giving the federal government a share of the actual oil and gas production rather than cash payments. Oil and gas producers contend that the royalty-in-kind system most accurately reflects the amount they owe to the government for production from federal lands.

(For more background, see CRS Issue Brief IB10073, *The Arctic National Wildlife Refuge: The Next Chapter*.)

Alaska Natural Gas Transportation. The Administration's NEP report calls for expediting construction of a pipeline to deliver the large natural gas reserves in Alaska's North Slope to the lower 48 states. Coordination with Canada is urged, although no particular route is recommended.

Interest in constructing a natural gas pipeline from the North Slope to the lower 48 states diminished after passage of the Alaska Natural Gas Transportation Act of 1976 (ANGTA). The Act, crafted in reaction to the Arab Oil Embargo of 1973-74, established a special process for granting a right-of-way across federal lands to

facilitate pipeline construction. The President was required to select among three competing proposals offered by industry, submitting his decision to Congress for approval. In 1977, President Carter's designation of the Alcan Pipeline Company's proposal was approved by Congress. Due to the unavailability of financing, because of relatively low natural gas prices, the Alcan project never moved past the right-of-way approval stage.

Proposals for the transportation of Alaskan gas remained dormant for 20 years. They were revived in 2000, as the natural gas supply-and-demand situation in the United States caused sharp price increases. Three proposals are under discussion, including the Alcan project, now commonly referred to as the Highway Plan. This would largely follow the 1977 route, paralleling the Alcan Highway to Fairbanks, and then heading east across Canada, interconnecting with the pipeline grid in Alberta. This gas could make its way to points in the midwest and on the Pacific coast.

Also under discussion are proposals made by the Alaska Resource Company for North Slope routes into Canada to Norman Wells in the Northwest Territories, and then south to Alberta. A variation of this route – opposed by some U.S. gas interests and environmental groups, and banned in H.R. 4 – would transit an underwater route passing off the North Slope and ANWR, crossing into the Canadian Arctic and potentially opening new Canadian gas reserves. Another proposal envisions a pipeline along the Trans Alaska Oil Pipeline route, with the gas liquefied at the seaport of Valdez and shipped to market by LNG (liquefied natural gas) vessel. This project is still in the conceptual stage, but is being promoted as an all-U.S. route, avoiding crossing Canada and the possibility of being required to transport Canadian gas to U.S. markets.

Proponents of Alaska gas projects have asserted the need to move through the approval process with a minimum of potential delays. In 1981, Congress considered – in an attempt to make the original Alcan project more attractive to investors – a package of special waivers of existing laws to lower the financing risk involved.

Two of the proposals transit Canada's gas-producing regions, and would connect with Canadian pipelines to carry gas on to the lower 48 states. Canada supplies about 15% of U.S. gas consumption; natural gas is one of Canada's most important exports. Canada has a strong interest in ensuring that a pipeline project crossing its gas-producing provinces would be available to bring to market Canadian as well as Alaskan gas. Ease of access and availability of capacity for Canadian gas – as well as location proximate to Canadian gas fields – may be important considerations in the initiative to secure right of transit across Canada.

Section 801 of H.R. 4 would ban the authorization of any pipeline right of way transiting submerged lands or shoreline of the Beaufort Sea. Additionally, it would prohibit authorization of any pipeline crossing the U.S.-Canada border North of 68 degrees north latitude. This would prohibit the northern Alaska Resource Company proposal, which would likely be called upon to transport new gas supplies from the Canadian Arctic. Canadian Arctic gas is seen by some in the industry as competitive with Alaskan gas. Industry concerns may include:

- The pipeline would likely be financed by U.S. gas producer interests. Canadian producers might not have to bear a full share of the capital outlays.

- Any gas from the Canadian Arctic – and there could be significant supplies – would compete in U.S. gas markets, affecting domestic producers' prices and market share.

- Construction of the Alcan/ANGTS route lying to the south could strand gas resources in Canada's Mackenzie Delta (the Canadian North Slope, in the Yukon and NW Territories), delaying their development for years.

Overland routes would all require the cooperation of the Canadian government at both the provincial and federal levels. How this might play out is now in very early discussion. In a July 17, 2001, press conference,[10] President Bush noted that there were competing visions about how to get Alaskan and Canadian Arctic gas to market, including the preference of some Alaska state officials for an "all-Alaska" route. The President went on to note:

"We are willing to work with [the Canadian] government to figure out a way that can expeditiously move gas.....[O]bviously, to the extent that it would be an American pipeline, a pipeline on American soil would make it easier for me politically. There are perhaps enough reserves to justify an Alaska pipeline. I know there's enough reserve to justify a Canadian line. It's conceivable we could have both, and that would both feed the midwestern market and the western market."

Other than the route prohibitions, H.R. 4 contains no provisions regarding Alaska natural gas transportation.

Natural Gas Transportation System Expansion. A stated goal of the Administration's energy program has been to coordinate the expansion of the energy transportation system in order to supply growing demand in areas currently underserved by existing infrastructure. It maintains that the need for coordinated and expeditious construction of new pipelines and expansion projects was made clear by natural gas shortages in California during 2000 and the early months of 2001. Low rainfall in the Pacific Northwest led to reduced hydropower generation. The need to offset this shortfall caused a spike in natural gas prices, deemed to be due more to a shortage of transportation capacity into California than a shortage of the commodity. This is because delivered California prices were much higher than delivered gas elsewhere in the nation. The rise in natural gas prices was quickly reflected in electricity rates.[11] The high visibility of California difficulties focused attention on the slow completion of new capacity for other parts of the country as well.

The need for coordinated infrastructure development became embodied in Sec. 6106 of H.R. 4. This language calls for a study of western states' natural gas needs by the Secretary of Energy and Chairman of FERC. The study would consider:

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[10] The Energy Daily, Bush: *Two Pipelines Better Than One?* July 25, 2001, page 2.

[11] See: California Energy Commission website: "Natural Gas Price Increases. Frequently Asked Questions," [http://www.energy.ca.gov/naturalgas/natural_gas_faq.html].

- western state officials forecasts, such as those of the California Energy Commission;

- a review of gas power plant construction projects, both underway and planned; and

- a review of the current long-distance gas transmission systems, their capacity and how they interrelate.

Recommendations for coordinated infrastructure development in the western states would be made in a report to the House Energy and Commerce Committee and Senate Energy and Natural Resources Committee with in six months. The Chairman of FERC would also have to report on how the Commission would consider the report's conclusions in the process of reviewing pipeline construction applications.

Renewable Energy. One key legislative element in the Bush report proposes "appropriate funding" for solar and other renewable energy, subject to the results of a review of past funding and performance. Related to this, another proposal calls for legislation to fund $1.2 billion of renewables R&D with bonuses from leasing of ANWR. Also, one legislative proposal would reauthorize funding for hydrogen R&D.

All the other renewables provisions are designed as administrative actions. They include an assessment of access limitations for developing renewables on federal lands, changes to geothermal leasing requirements, EPA creation of a partnership program that would encourage private-sector companies to purchase renewable energy, an effort to integrate R&D programs involving hydrogen, fuel cells, and distributed energy, and development of an education campaign for alternative energy.

H.R. 4 would not require a review of past renewables funding and performance or authorize appropriations for all renewable energy programs. However, it would authorize $400 million through 2006 for the hydrogen program and about $670 million through 2006 for bioenergy programs. Further, the bill specifies that 50% of the bonus, rental, and royalty revenues from oil and gas leasing in ANWR would go to a Renewable Energy Technology Investment Fund that would be used to finance DOE research expenses, including grants, contracts, cooperative agreements, and deployment studies.

The Bush Administration report recommends only administrative action to inventory renewable energy production potential on federal public lands. H.R. 4 would require an inventory of wind, solar, and geothermal energy, but differs from the Administration report by excluding biomass energy. In other places where the Administration calls for administrative actions, the bill would expedite geothermal leasing; create a new government-industry partnership that employs an "Energy Sun" label to promote renewable energy and alternative energy equipment; authorize about $250 million through 2006 for integrated bioenergy R&D and applications; and require a report on distributed power hybrid systems that include renewable energy technologies. In response to the education aspect in the Bush report, H.R. 4 would direct DOE and EPA to "enhance public awareness" through use of the Energy Sun label.

H.R. 4 includes some legislative proposals for renewables that were not included in the Bush report. These proposals include cost and production goals for various technologies, a high performance buildings initiative, and a reassessment of renewable resources for the Insular Areas (island territories), among others. H.R. 4 also includes several tax provisions for renewable energy, which are described in the last section of this report.

(For more information, see CRS Issue Brief IB10020, *Energy Efficiency: Budget, Oil Conservation, and Electricity Conservation Issues*.)

Coal. The Bush energy report calls for a $2 billion federal expenditure over 10 years for research on technologies for the cleaner use of coal. H.R. 4 includes the Clean Coal Power Initiative (CCPI), authorized for fiscal years 2002 through 2011 to spend $200 million annually. The CCPI would be a cost-sharing industry/government program to demonstrate advanced power technologies, with an emphasis on coal-based gasification projects. Supporters of the program note that coal is a major domestic energy resource that could be more fully utilized if its environmental drawbacks could be reduced. But opponents contend that new technology would not make coal environmentally acceptable at a competitive cost and view such federal support as an unjustified subsidy.

(For more information, see CRS Report RS20877, *The Clean Coal Technology Program: Current Prospects*.)

Hydropower Relicensing. The Administration energy report supports administrative and legislative reform of hydropower licensing. The issue here is primarily timely relicensing of large existing hydro facilities. Legislation has been introduced (S. 71, Senator Craig) to achieve this; however, the Bush report did not make any specific recommendations. The issue for hydro operators relates to environmental and operating conditions imposed in new licenses that were not in the old ones, plus the possibility that license renewal applications would be denied on environmental grounds. The major issue for environmentalists is that the environmental requirements required by the 1986 relicensing act have not, to their satisfaction, been implemented. H.R. 4 would allow hydroelectric license applicants to propose alternatives to license conditions required by federal agencies, who would have to accept the alternatives if there were substantial evidence that they would provide equivalent environmental protection.

Additionally, the Bush energy report mentions incentives to operators to "optimize the efficiency and reliability" of existing facilities. Several bills have been introduced that would do this as well. A number of related hydroelectric provisions are also included in H.R. 4.

Nuclear Power. The NEP report recommends the expansion of nuclear energy in the United States, citing potential clean air and energy security benefits. A variety of administrative actions are recommended to encourage the licensing of new reactors, expand production from existing reactors and extend their licenses, and move forward with nuclear waste disposal. Most of these administrative proposals would continue efforts already underway at DOE and the Nuclear Regulatory Commission (NRC).

The primary legislative proposal in the NEP report is to extend the Price-Anderson Act,[12] which requires nuclear power producers to jointly pay for damages to the public from a severe accident and places a cap on total industry payments. Authority for new reactors to be included in the system expires in August 2002, although existing reactors would continue to be covered. The nuclear industry and other supporters of the Price-Anderson Act contend that the system has worked well and is necessary for the construction of new reactors. Environmental groups and other opponents see it as a hidden subsidy to the nuclear industry.

A particularly controversial provision in the Administration's nuclear energy policy is its call for renewed consideration of reprocessing technology, which chemically extracts plutonium and uranium from highly radioactive spent fuel for use in new fuel. Several U.S. programs involving nuclear reprocessing have been halted during the past 25 years, because of poor economics and concerns that commercial separation of weapons-useable plutonium could pose a nuclear weapons proliferation risk. The NEP report contends that new reprocessing technologies might reduce the proliferation risk as well as reducing the hazards of nuclear waste.

H.R. 4 does not include an extension of the Price-Anderson Act, although leaders of the House Energy and Commerce Committee have reportedly announced plans to move an extension bill before the authorization expires.[13] The House-passed bill would authorize an "Advanced Fuel Recycling Technology Research and Development Program" (Section 2321) that is related to the Bush Administration spent fuel reprocessing recommendations.

(For more background, see CRS Issue Brief IB88090, *Nuclear Energy Policy*.)

Transportation Initiatives

The Bush Administration's energy policy includes several recommendations directly related to transportation. Most of these recommendations are for the Administration to study various policy options, or to pursue the Administration's energy goals through regulatory changes. These include improving the fuel economy of automobiles and simplifying the gasoline distribution system in the United States. However, two recommendations would require legislation. These are tax credits for hybrid and fuel cell vehicles, and an extension of the existing excise tax exemption for alcohol fuels.

First, the Administration has proposed a consumer tax credit for the purchase of hybrid and fuel cell vehicles between 2002 and 2007. Hybrid vehicles combine a gasoline engine with an electric motor system to improve fuel economy, in some cases significantly. Fuel cell vehicles utilize an electrochemical process, as opposed to combustion, to generate energy for motion. While there are two production hybrid vehicles currently, and most auto makers plan to introduce more models in the near

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[12] Section 170 of the Atomic Energy Act of 1954 (42 U.S.C. 2210)

[13] "House Energy Bill May See Managers' Amendment on Fuel Efficiency." Green Sheets Express. July 11, 2001.

future, current production runs are small. Further, it is unlikely that there will be many fuel cell vehicles available for consumer purchase by 2007.[14]

The second legislative proposal from the energy plan is an extension of the current alcohol fuels exemption from the motor fuels excise tax.[15] Gasoline blended with 10% alcohol, usually ethanol, receives a 5.3 cent per gallon exemption from the standard 18.4 cent per gallon excise tax. Most of this tax goes to the Highway Trust Fund. The current exemption will be phased out by January 1, 2008. This was an extension from the original expiration date of January 1, 2001.[16] Because most ethanol is derived from corn, the passage of another extension is supported by agricultural interests, in addition to the Administration. (More details on the Administration tax proposals are in the tax section at the end of this report.)

Another part of the plan that could lead to legislation is a recommendation that the Administration study improving the flexibility of the clean fuels system in the United States. In response to federal, state, and local requirements, there are some gasoline blends that are only sold in certain areas of the country. When there is a local supply disruption, it may be difficult to move fuel from one area to another to meet the demand. As these various standards are due partly to the Clean Air Act, some suggest that an amendment to the law would be appropriate to normalize the standards.

Administrative Action. Many transportation provisions of the Administration's energy policy recommend administrative, as opposed to legislative, action. In many cases, the recommendations are for further study of promising technologies or policy options. The first of these recommendations is that the Department of Transportation (DOT) should review whether fuel economy standards for automobiles and light trucks should be changed. A study by the National Academy of Sciences (NAS), requested by Congress in the FY2001 DOT appropriations, concluded that the fuel economy of light trucks could be increased without additional cost, if fuel savings were taken into account.[17] DOT has the authority to increase or decrease corporate average fuel economy (CAFE) standards, but yearly riders to DOT's appropriations bill have held CAFE constant. No rider is expected in the FY2002 appropriations, especially in light of the reports in late June that the Administration was seriously considering proposing a boost in the CAFE standard for light-duty trucks, including SUVs.[18]

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[14]For more information on fuel cell and hybrid vehicles, see CRS Report RL30484, *Advanced Vehicle Technologies: Energy, Environment, and Development Issues.*

[15]For more information on the alcohol fuel tax incentives, see CRS Report 98-435E, *Alcohol Fuels Tax Incentives.*

[16]P.L. 105-178.

[17]National Academy of Sciences, National Research Council, *Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards*. July 30, 2001 (Prepublication copy).

[18]For more information on fuel economy standards, see CRS Issue Brief IB90122, *Automobile and Light Truck Fuel Economy: Is CAFE Up to Standards?*

The energy policy report also recommends that the government continue investment and research into intelligent transportation systems (such as electronic messaging boards and fast toll systems), fuel cell buses, and other clean fuel buses. However, the Administration does not recommend new funding, only a continuing commitment to existing funding.

In terms of new initiatives, the energy report recommends that the government partner with the trucking industry to study ways to reduce emissions and fuel consumption caused by idling at truck stops. This could be achieved through portable generators or through truck stop electrification. After such a study is completed, funding could be proposed for implementation of any further plans.

As was mentioned above, the Administration also recommends the simplification of the clean gasoline system in the United States. While major changes would likely require legislation, some goals could be achieved through regulation. Therefore, the energy plan recommends that the Environmental Protection Agency (EPA) study possible regulatory changes. Finally, the plan recommends that the President cooperate with other countries to find alternatives to oil consumption, particularly in the transportation sector.

Transportation Provisions in H.R. 4. The comprehensive House energy bill, H.R. 4, covers many of the same transportation issues as the Administration's energy policy, but goes further on some initiatives, such as alternative fuels and fuel economy. However, it does not address some issues, such as the alcohol fuels tax incentives.

In the realm of advanced technology and alternative fuel vehicles, the bill has several provisions. The bill would provide tax credits for the purchase of alternative fuel, fuel cell, and hybrid vehicles, and expand the existing credit for electric vehicles. Further, it would extend the existing tax deduction for the installation of refueling infrastructure for alternative fuel vehicles. The bill would authorize $200 million to provide grants to state and local governments, as well as transit authorities, for the purchase of alternative fuel and advanced diesel vehicles, and fueling infrastructure for those vehicles. Further, the bill would authorize $40 million in FY2002, increasing to $80 million in FY2006, as grants for the purchase of alternative fuel and advanced diesel school buses. Finally, the bill would allow states to exempt alternative fuel and hybrid vehicles from high-occupancy vehicle (HOV) restrictions, allowing such vehicles to use HOV lanes with no minimum occupancy requirement.[19]

H.R. 4 also aims to reduce petroleum consumption. The bill would require DOT to increase CAFE standards for light trucks for model years 2004 through 2010 such that 5 billion gallons of gasoline will be saved, about 0.5% of total U.S. projected gasoline consumption during the period.[20] In addition, the bill would require that the average fuel economy of federal vehicles purchased in 2003 be 1 mile per gallon (mpg) higher than the current federal fleet average, and 3 mpg higher in 2005.

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[19]For more information on alternative fuels, see CRS Report RL30758, *Alternative Transportation Fuels and Vehicles: Energy, Environment, and Development Issues.*

[20]Energy Information Administration. *Annual Energy Outlook 2001.* Table 11.

Other provisions of H.R. 4 would require federal studies. For example, the bill would require EPA to study systems to eliminate idling at truck stops. In addition, EPA would be required to study ways in which the clean gasoline system could be simplified and the costs of gasoline regulations minimized.

(For more background, see CRS Issue Brief IB90122, *Automobile and Light Truck Fuel Economy: Is CAFE Up to Standards?*)

Electricity Restructuring

The Bush Administration's energy policy calls for comprehensive electric restructuring legislation and makes recommendations touching upon broad principles of restructuring, as well as on generation and transmission infrastructure. The plan includes several legislative, as well as administrative, proposals.

Comprehensive legislation involves at least three issues. The first is reform of the Public Utility Holding Company Act (PUHCA, 15 U.S.C. 79). Some electric utilities want PUHCA changed so they can more easily diversify their assets. State regulators have expressed concerns that increased diversification could lead to abuses such as cross-subsidization. Consumer groups have expressed concern that a repeal of PUHCA could exacerbate market power abuses in a monopolistic industry where true competition does not yet exist.

The second issue concerns the provisions of the Public Utility Regulatory Policies Act of 1978 (PURPA, 16 U.S.C. 2601) that require utilities to purchase power from certain classes of non-utility generators. Many investor-owned utilities support repeal of these provisions. They argue that their state regulators' "misguided" implementation of PURPA has forced them to pay contractually high prices for power that they do not need. Opponents of this legislation argue that it will decrease competition and impede development of renewable energy.

The third issue is retail wheeling. It involves allowing retail customers to choose their electric generation supplier. Currently, this is under state jurisdiction; 24 states and the District of Columbia have moved toward retail wheeling. However, some have argued that the federal government should act as a backstop to ensure that all states introduce retail wheeling, preempting state authority if necessary.

In addition, the Bush Administration's energy policy calls for comprehensive electric restructuring legislation to include: promotion of competition, consumer protection, reliability enhancements, efficiency improvements, and a promotion of renewable energy. No comprehensive electric restructuring legislation has been introduced in the 107th Congress, though several comprehensive bills were introduced in the 106th Congress (see CRS Report RL30087).

The Administration energy report includes proposals that could affect the transmission system. The regulatory regime has been shifting in the electricity industry, but investment in infrastructure has not kept up with increases in bulk power transfers and electricity demand. Electricity demand has been growing at 2-3% per year, but additions to the transmission system have been growing by only 0.7% per year. So, in addition to generation capacity shortages that have recently become

apparent in the Western United States, transmission lines are congested in several regions of the United States.

Currently, membership in North American Electric Reliability Council (NERC), an organization formed to promote the reliability of the generation and transmission system, is voluntary. NERC has no authority to enforce reliability standards. Under the Bush Administration policy, the Secretary of Energy is to work with the Federal Energy Regulatory Commission (FERC) to enhance reliability of the transmission grid and to develop reliability legislation to create a self-regulatory organization that would be subject to FERC oversight. There are four bills that have been introduced in the 107th Congress that would establish an Electric Reliability Organization (ERO) that would prescribe reliability standards that would be enforceable by FERC.[21] Membership in an ERO would be mandatory under these bills.

One reason that transmission lines have not been built in recent years is the difficulty in siting the lines. Even though the transmission of electricity is considered interstate commerce, the siting of transmission lines remains the responsibility of the states. In addition, several federal agencies play various roles in the siting process, primarily with regards to environmental impacts. Siting and building transmission lines has been very difficult because of citizen opposition as well as inconsistent siting requirements among states. To address this issue, the NEP report calls for legislation that would extend federal authority to obtain rights-of-way for electricity transmission lines. Similar authority exists for natural gas pipelines. Some states' rights and property rights groups oppose such legislation.

The third transmission proposal in the NEP report is for the Secretary of Energy to authorize the Western Area Power Administration (WAPA), a DOE agency that sells electricity from federal dams, to explore relieving the transmission system congestion in California at the Path 15 constraint, where there is insufficient transmission capacity between the northern and southern parts of the state.. The Path 15 line is owned by Pacific Gas and Electric (PG&E). Legislation is not required for WAPA to conduct an investigation of the problem and to propose possible solutions The NEP proposes that construction be financed by non-federal contributions. On May 28, 2001, Energy Secretary Abraham directed WAPA to complete its planning of the Path 15 upgrade and determine whether outside parties would be interested in financing and co-owning the transmission line. Western is now in the process of reviewing the 13 proposals submitted by private investors and utilities, and will make a recommendation to the Secretary of Energy. However, electricity carried on Path 15 is generated primarily by non-federal entities. If WAPA gains ownership of Path 15 beyond the actual portion that moves federal power, WAPA's role would be expanded beyond its current statutory authority of marketing federal power.

Electricity restructuring provisions were not included in H.R. 4, other than various tax provisions related to industry regulatory changes. The House Energy and

[21]H.R. 312, S. 172, S. 388, and S. 597

Commerce Committee leadership has announced plans to circulate draft electricity restructuring legislation in September and mark up legislation in October.[22]

(For more information, see CRS Electronic Briefing Book on *Electric Utility Restructuring*.)

Energy Tax Incentives

In general, the Bush Administration has not been supportive of widespread use of energy tax subsidies and incentives, which it views as being inconsistent with the free market. It has, however, recommended a selected number of energy tax incentives, mostly for renewable technologies and alternative fuels. Four of these incentives first appeared in the Administration's FY2002 budget proposal, but they were incorporated into the NEP report, which also recommended four additional energy tax incentives.

The Administration provided far more details about its energy tax incentives that were first proposed in the budget than those in the NEP report, which are described only in the most general way. All of these proposals have been included in H.R. 4, which proposes a major expansion of energy tax incentives for energy supply and conservation. In the following discussion, differences between the Bush proposals and H.R. 4 are noted wherever possible.

Liberalization of the Current §45 Tax Credit. Internal Revenue Code §45 allows taxpayers to claim a 1.5¢ credit in 1992 dollars (adjusted for inflation this credit is 1.7¢ for the year 2001) per kilowatt-hour for electricity produced from qualified wind energy, "closed-loop" biomass (organic material from plants grown exclusively as fuel for electricity production), or poultry waste. The electricity must be produced from a facility owned by a taxpayer and it must be sold to an unrelated third party. The credit is allowed for the first 10 years of production from a new facility placed into service before January 1, 2002. Use of waste materials (such as scrap wood or agricultural/municipal waste) or timber does not qualify for the credit. Also, plants cannot be co-fired with any petroleum-based fuel or coal.

The Bush Administration FY2002 budget proposes to 1) extend the placed-in-service rule for wind and biomass facilities to January 1, 2005, 2) extend the credit, but at reduced rates, to forest-related products and agricultural biomass products, and 3) allow biomass co-fired with coal to qualify for a reduced tax credit for electricity produced from January 1, 2002, through December 31, 2004.

Like the Administration's proposal, H.R. 4 would extend and modify the credit, expanding the types of qualifying technologies. However, H.R. 4 would extend the placed-in-service rule to January 1, 2007, rather than January 1, 2005. Like the Administration's proposal, H.R. 4 would expand the credit to open-loop biomass and

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[22]Opening Statement of Rep. Joe Barton, Chairman of House Subcommittee on Energy and Air Quality, Energy and Commerce Committee. National Electricity Policy: Barriers to Competitive Generation. Hearing, July 27, 2001.

to landfill gas. But H.R. 4 would not expand the credit to gas produced from dual fired coal-biomass systems.

15% Energy Tax Credit for Residential Solar Property. There is no tax credit for residential application of renewable energy technologies such as solar and wind under current law although business investment in solar and geothermal systems qualify for a 10% investment tax credit. A tax credit for residential applications of solar and wind technologies was part of President Carter's National Energy Plan of 1978. The residential tax credits for solar and wind were initially 30% up to $2,000 of cost and 20% of the next $8,000 of cost (the maximum cost was $10,000, and the maximum credit was $2,200). In 1980 the rate was increased to a flat 40% of up to $10,000 in system cost, for a maximum per dwelling tax credit of $4,000. For solar, the tax credit covered only active (or mechanical) solar systems and photovoltaic systems; passive solar investments were excluded. These credits expired at the end of 1985 and have not been reinstated.

The Bush FY2002 budget and the NEP report propose a nonrefundable income tax credit of 15% of the costs of several types of residential solar technologies to either heat or cool a building or to heat water (except in swimming pools). The maximum credit would be $2,000. The provision in H.R. 4 appears to be identical to the President's proposal.

Tax Treatment of Nuclear Decommissioning Funds. Owners of nuclear power plants are required to establish independent trust funds, and to make contributions to those funds, as a reserve to ensure that funds are available to decommission those plants when they are retired. Decommissioning basically means the dismantling of the plants, disposal of the resulting nuclear waste, and cleaning up of the sites.

Nuclear decommissioning funds may be transferred tax-free in connection with a change in ownership of the nuclear facility to which they relate, but the transferee generally has to be a regulated utility eligible to maintain a qualified decommissioning fund. This and other rules spelling out the tax treatment of nuclear decommissioning costs were enacted during a time when all nuclear power plants were operated by regulated public utilities, and when any transfers of plant assets occurred between such regulated entities.

Electric industry restructuring, with its separate ownership of generation, transmission, and distribution facilities, may lead to the sale or disposition of nuclear generating plants – and, therefore, of the decommissioning fund assets to which they relate – to parties that are not regulated public utilities as the law requires for tax-exempt transactions. Under certain conditions in a deregulated and restructured industry, ambiguity regarding the tax treatment of decommissioning fund transfers may make such transactions taxable.

The President's budget proposal would specify that transfers of nuclear power plants to non-regulated companies receive the same tax benefits as transfers to regulated entities. Several other decommissioning provisions are also proposed:

- Remove the restriction that deductible amounts are limited to those reported to public service commissions under cost-of-service regulations. This means that deductions could be greater than allowed under current law and would still be allowable in a restructured, competitive market.

- Repeal the requirement that a plant owner obtain a ruling from the Internal Revenue Service (IRS) before determining the amount deductible, thus reducing administrative burden.

- Eliminate the requirement under current law that actual decommissioning expenses not be deductible until economic performance of the services occurs. Instead, such expenses would be deductible when paid or incurred.

H.R. 4 appears to be identical to the President's proposal, although H.R. 4 also includes other tax provisions relating to electric industry restructuring.

The nuclear power industry has long contended that taxation of decommissioning fund transfers could impede the ongoing consolidation of nuclear plant ownership, which the industry says is crucial for maintaining the economic viability of many reactors in competitive electricity markets. Environmental groups and other nuclear opponents contend the Administration's decommissioning tax proposals is an unwarranted subsidy.

Net Income Limitation for Percentage Depletion. Firms that extract oil, gas, or other minerals are permitted a deduction to recover their capital investment in the mineral reserve, which depreciates due to the physical and economic depletion or exhaustion of the reserve as the mineral is recovered (IRC §611). There are two methods of calculating this deduction: cost depletion and percentage depletion. Cost depletion allows for the recovery of the actual capital investment – the costs of discovering, purchasing, and developing a mineral reserve – over the period during which the reserve produces income. Under this method, the total deductions cannot exceed the original capital investment. Under percentage depletion, the deduction for recovery of capital investment is a fixed percentage of the "gross income" – *i.e.*, sales revenue – from the sale of the mineral. Under this method, total deductions may, and typically do, exceed the capital invested.

IRC §613 states that mineral producers must claim the higher of the two deductions. The percentage depletion rate for oil and gas is 15%. In 1990, a higher depletion rate for marginal wells – oil from stripper wells – was enacted for independent producers and royalty owners.

In a major reform of the nation's energy tax laws in 1975, percentage depletion was repealed for the major integrated oil companies – the majors would have to claim cost depletion. After 1975, only independent producers would be able to claim percentage depletion, and only on limited quantities of oil and gas. Currently, the 15% percentage depletion allowance applies only up to average daily production of 1,000 barrels of oil, or its equivalent in gas per day. An independent oil and gas producer is one that 1) never refines more than 50,000 barrels per day of crude oil on any given day during the producer's taxable year, and 2) has gross receipts from retail operations of $5 million or less.

There are other limitations. Percentage depletion for oil and gas is limited to the lesser of 100% of the taxable income from each property before the depletion allowance, or 65% of the taxable income from all properties for each producer. For ten years ending December 31, 1999, the 100% taxable income limitation was suspended for marginal wells. The suspension having ended, the 100% net income limitation for marginal wells was reinstated on January 1, 2000. Several tax bills during the 105th and 106th Congresses proposed to reinstate the suspension, but none was enacted.

The President's budget proposal would reinstate the suspension of the 100% net income limitation, making it available through December 31, 2002. H.R. 4 would, among other oil and gas tax liberalizations, extend the suspension of the 100% net income limitation by 5 years through December 31, 2006.

Income Tax Credit for Hybrid and Fuel Cell Vehicles. Hybrid vehicles combine an electric motor and battery pack with a gasoline or diesel engine in various configurations. These vehicles tend to be very efficient, with higher fuel economy and range than conventional vehicles. Fuel cell vehicles are basically electric vehicles but the source of the electricity is a chemical reaction between fuels stored in the vehicles tank (as opposed to batteries, which need regular recharging).

Alternative-fuel vehicles (AFVs) operating solely on specified alternative fuels can qualify for tax deductions of up to $2,000 for a vehicle up to 10,000 lbs., up to $5,000 for a truck or van of 10,000 to 26,000 lbs., and up to $50,000 for a truck or van weighing more than 26,000 lbs. Within those limits, the tax deductions for a dedicated AFV can be applied to the full cost of the engine, the fuel delivery system, and the exhaust system. For a dual-fuel vehicle, the tax deductions are limited to the incremental cost of the same components compared with the systems for conventional fuels. Alternative fuels are defined as compressed natural gas, liquefied petroleum gas, liquefied natural gas, hydrogen, electricity, and fuels that include 85% alcohol, ether, or any combination of these. In addition, all of the property that qualifies for the deduction — the new vehicle or the conversion equipment — must be new.

Qualifying vehicles must meet any applicable federal and state environmental standards. For business taxpayers, the basis of the property for purposes of the depreciation deduction is reduced by the amount of clean-fuel-vehicle deduction. In general, each of these deductions terminates at the end of 2004. But for new clean-fuel burning vehicles or retrofit equipment, the deduction is phased out evenly over a 3-year period beginning in January 2002.

The NEP report recommends that Congress develop legislation to provide a temporary income tax credit available for the purchase of a new hybrid or fuel cell vehicle. Such a credit would be provided between 2002 and 2007. As part of a significant expansion of these tax incentives for alternative-fuel vehicles, H.R. 4 would provide an income tax credit for hybrid vehicles and fuel cell vehicles, which would depend upon vehicle weight, energy efficiency, and emissions performance. The credit for hybrid vehicles would range from $250 to $10,000; the credit for fuel cell vehicles would range from $4,000 to $40,000, which would also apply to electric vehicles under a significant liberalization of that tax credit. The proposal would also

provide a new income tax credit, ranging from between $5,000 to $40,000 for an "advanced lean-burn technology motor vehicle."

Investment Tax Credit for Distributed Power Technologies. Distributed power systems and technologies are small electricity generating and storage systems (self-generated power) and small cogeneration systems, also called combined heat and power systems. Such technologies allow industrial, commercial, and even residential users (such as apartment buildings) to generate or store their own electricity – generated for their own use rather than for sale to others – and thus either be completely independent from or rely less on electric grids. The technologies are defined primarily by size and by their on-site feature, and thus could include small diesel engines, internal combustion engines, and microturbines.

Current tax law provides no tax credit for these types of energy equipment. Cogeneration equipment was added in 1980 to the list of property qualifying for the 10% business energy investment tax credits under the Energy Tax Act of 1978 (P.L. 95-618). These expired at the end of 1982, three years before the expiration of the residential energy tax credits and the other business energy tax credits.

Under current law, the depreciation treatment of these technologies also depends on the application. In commercial and residential building applications these technologies are generally treated as structural components for purposes of depreciation, which means a much longer write-off period (39 years), and straight line depreciation. In industrial applications, the depreciation system to be used depends on the capacity of the technology: those rated at more than 500 kilowatts in capacity are depreciated over 15 years using the 150% declining balance method; technologies rated at 500 kilowatts or less have no uniform recovery period but are assigned to the equipment class for the corresponding manufacturing activity of the taxpayer.

The NEP report recommends increased energy efficiency through promoting combined heat and power projects either by shortening the depreciation life or by providing investment tax credits for the equipment. H.R. 4 would provide both an income tax credit – at the rate of 10% – and shorter depreciation period (15 years) for systems that are not structural components.

Liberalization of the §29 Tax Credit for the Production of Fuels from Unconventional Sources. IRC §29 provides for a production tax credit of $3 per barrel of oil-equivalent (in 1979 dollars) for certain types of liquid and gaseous fuels produced from alternative, "unconventional" energy sources – conventional fuels (methane) mined from "unconventional" locations (such as coal mines) or produced from alternative resources (such as landfills), or alternative fuels produced from conventional fossil fuels (such as coal). This credit is also known as the non-conventional fuels credit, or more simply, the "section 29 credit."

The full credit is available if oil prices fall below $23.50 per barrel (in 1979 dollars); the credit is phased out as oil prices rise from $23.50 to $29.50 (again, in 1979 dollars). Thus, both the credit and the phase-out range has been adjusted for inflation since 1979. Currently, the credit is over $6.00 per barrel of liquid fuels ($6.14 in 2000) and over $1.00 per thousand cubic feet (mcf) for gaseous fuels, and the phase-out range for oil prices is currently from about $47 to $59 per barrel. The

credit for tight sands gas is fixed at the 1979 level of $3 per barrel of oil equivalent (about $0.50 per mcf) and is not indexed to inflation. With recent low per-barrel oil prices (averaging $15.56 for 1999), the credit was fully in effect in 2000. Even with the higher prices of 2000, the credit has been fully in effect and is expected to remain so in the near future.

Qualifying fuels include oil produced from shale or tar sands, synthetic fuels (either liquid, gaseous, or solid) produced from coal, and gas produced from either geopressurized brine, Devonian shale, tight formations, or biomass, and coalbed methane (a colorless and odorless natural gas that permeates coal seams and that is virtually identical to conventional natural gas). For most qualifying fuels, the production tax credit is available through December 31, 2002, provided that the facilities were placed in service (or wells drilled) by December 31, 1992. For gas produced from biomass such as biogas from landfills, and synthetic fuels produced from coal or lignite, the credit is available through December 31, 2007, but only for facilities that have been placed in service (or well drilled) before July 1, 1998, pursuant to a binding contract entered into before January 1, 1997. Thus new landfill projects do not qualify for the tax credit.

The §29 credit is reduced to the extent that a project is financed from government grants, subsidized or tax-exempt bonds, or receives other subsidies or benefits. For example, the credit is reduced to the extent that certain other energy tax credits are claimed for the same project (such as the enhanced oil recovery tax credit). Finally, the credit is nonrefundable, and it is limited to the excess of a taxpayer's regular tax over several tax credits and the alternative minimum tax.

The Bush Administration policy proposes to expand the §29 tax credit to make it available for new landfall methane gas (biogas). The credit would be tiered, depending on whether local or federal air pollution laws required the taxpayer to collect or flare the gas. H.R. 4 would extend the placed-in-service rule for existing fuels from January 1, 1993 to between the date of enactment and January 1, 2007. For such fuels the credit would be extended from December 31, 2002 – which means that the credit expires at the end of next year – to four years after the onset of production. For landfill gas, H.R. 4 would allow facilities placed in service between July 1, 1998 through December 31, 2006 to qualify for the tax credit, which would be available for five years after the onset of production.

Continuation of the Excise Tax Exemption for Alcohol Fuels. There are four federal tax subsidies that are available for the production and use of alcohol transportation fuels. The most important tax incentive for alcohol fuels — the one most responsible for the development of the alcohol fuels market — is the partial exemption, currently at 5.3¢ per gallon, from the otherwise standard excise tax rates on gasoline, diesel, and other transportation fuels. Mixtures of 90% gasoline and 10% alcohol (typically called gasohol) are taxed at 13.1¢ per gallon — they are exempt from 5.3¢ of the tax. Since January 1, 1993, mixtures that are 7.7% or 5.7% alcohol (either ethanol or methanol) have received a prorated exemption. Thus, 7.7% ethanol blends qualify for a 4.081¢ exemption (they are taxed at 14.319¢ per gallon); and 5.7% ethanol blends qualify for a 3.021¢ per gallon exemption (they are taxed at 15.379¢ per gallon).

The 5.7% and 7.7% blends correspond, respectively, to the 2.0% and 2.7% oxygen content standard for gasoline sold in ozone nonattainment areas and carbon monoxide nonattainment areas under the Clean Air Act.[23] Most gasohol sales are exempt at the rate of 5.3¢ per gallon because they are 90/10 blends. In all these cases, the exemption equates to 53¢ *per gallon of ethanol*.[24] Finally, straight (or neat) alcohol fuels — mixtures that contain a minimum of 85% alcohol — also qualify for the excise tax exemption at varying rates. For example, straight *biomass-ethanol* is taxed at a rate of 13.1¢ (a 5.3¢-exemption); straight *biomass-methanol* is taxed at a rate of 12.4¢ per gallon (a 6.0¢-exemption). The market for these straight, or neat fuels, is very small.[25]

The federal tax exemptions for alcohol fuels also apply to certain fuel additives called oxygenates, provided they are produced from renewables such as corn and not from fossil fuels such as natural gas. In 1995, the IRS ruled that blends of ETBE (ethyl tertiary butyl ether) and gasoline would qualify for the partial excise tax exemption. ETBE is a compound derived from a chemical reaction between ethanol and isobutylene (a byproduct of both the petroleum refining process and natural gas liquids).[26] In this reaction, the ethanol is chemically transformed and is not present as a separate chemical in the final product. In effect these rulings ensured that the oxygenate required under the CAA would also qualify for the tax subsidies. Allowing ETBE to qualify for this tax exemption was intended to further stimulate the production of ethanol. Allowing ETBE to qualify for the federal tax subsidies reduces the price differential between it and MTBE (methyl tertiary butyl ether), its main competitor.

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[23] Clean Air Act (CAA), as amended in 1990 requires that all gasoline sold in the winter months in the 40 carbon monoxide (CO) non-attainment areas contain at least 2.7% oxygenate. Oxygenates add oxygen to gasoline and make the fuel burn more completely and more cleanly. This part of the program began on November 1, 1992. The CAA also requires that all gasoline sold in 9 ozone non-attainment areas be reformulated gasoline, containing at least 2% oxygenates. Reformulated gasoline involves a more complex and extensive change to the chemical properties of fuel to 1) reduce emissions of volatile organic compounds (which form ozone), 2) reduce emissions of toxic compounds (such as formaldehyde), and 3) keep emissions of nitrogen oxide from increasing.

[24] Alcohol blended with diesel fuel or any one of the other special motor fuels is also partially exempt from tax. The exemption for "gasohol" blends also applies to blends of diesel and biomass–derived alcohol and blends of a special motor fuel and biomass–derived alcohol, whether ethanol or methanol.

[25] To qualify for any of the above exemptions, the alcohol must be at least 190 proof (95% pure alcohol, determined without regard to any added denaturants or impurities). Technically, both ethanol and methanol qualify for the exemption as long as they are not derived from petroleum, natural gas, coal, or peat. In practice, however, virtually all fuel alcohol is ethanol produced from corn; very little, if any, methanol is produced from wood, and other biomass (or renewable) sources because it is generally uneconomic. Although blends of gasoline with biomass–derived methanol would also qualify under the tax code, such blends are disqualified under the Clean Air Act because of the associated increase of emissions of ozone–forming pollutants.

[26] Natural gas liquids are those components of wellhead gas — ethane, propane, butanes, pentanes, natural gasoline, and condensate, etc. — that are liquefied at the surface in lease separators, field facilities, or gas processing plants.

In place of the excise tax exemption, gasohol blenders may claim an income tax credit, generally at 53¢ per gallon of alcohol, for alcohol used to produce a qualified mixture (a mixture of alcohol and gasoline, or a mixture of alcohol and any other special motor fuel) under §40 of the Internal Revenue Code. The mixture must either be sold for use as a fuel (not merely as an octane enhancer) or used as a fuel in the producer's trade or business. An income tax credit is also available for straight alcohol used as fuel. This credit is available only to the user directly (who must use it in a trade or business), or to the seller who must sell it at retail to the ultimate user (as long as it is placed in the fuel tank of the buyer's vehicle). Thus, whether the alcohol is a blend or straight fuel determines who qualifies for the tax credit. In all these cases, the alcohol may be either ethanol or methanol but must not be produced from fossil fuels, effectively limiting the tax credit to ethanol from corn.

The production of alcohol may also qualify for the §29 tax credit (which was discussed above, on p. 6) if produced synthetically from coal. However, this procedure is so uneconomic that there is no such production taking place.

The Bush proposal is not specific but indicates that the Administration will work with the Congress to continue the excise tax exemption. There is no such provision in H.R. 4.

(For more information, see CRS Issue Brief IB10054, *Energy Tax Policy*.)