Energy Efficiency Policy Recommendations for the New Administration and Congress

American Council for an Energy-Efficient Economy
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There are a variety of energy challenges confronting the United States at this time. First, electricity reliability problems and price surges have become a major crisis in California and are threatening to reach the crisis level in other regions of the country. Second, natural gas prices have increased by 100% or more in many parts of the country, causing skyrocketing home energy bills this winter. And high natural gas prices are expected to continue due to tight supplies and growing demand. Third, our reliance on imported oil has grown due to a combination of declining domestic oil supply and growing demand linked to the lack of fuel efficiency improvement in motor vehicles.

These interrelated challenges have increased public concern and propelled energy policy back to the "front burner" among national policy issues. The Bush Administration has established a new Energy Policy Task Force and various members of Congress are developing energy legislation. Prospects for adopting comprehensive new energy legislation are better today than they have been for the past decade.

New energy legislation is likely include sections aimed at expanding domestic energy supply as well as restraining growth in energy demand. It is critical that this legislation include a strong set of initiatives to increase the efficiency of energy use. Increasing energy efficiency should be the cornerstone of national energy policy since it provides a host of economic, environmental, and national security benefits. In particular, increasing energy efficiency will:

- reduce energy waste and increase productivity, without forcing consumers or businesses to cut back on energy services or amenities;
- save consumers and businesses money since the energy savings more than pay for any increase in first cost;
- reduce the risk of energy shortages and improve the reliability of overtaxed electric systems;
- reduce energy imports;
- reduce air pollution of all types since burning fossil fuels is the main source of most types of air pollution;
- lower U.S. greenhouse gas emissions and thereby help to slow the rate of global warming.

Furthermore, increasing energy efficiency does not present a trade-off between enhancing national security and reliability on the one hand and protecting the environment on

the other, as do a number of our energy supply options (e.g., opening up the Arctic National Wildlife Refuge and other environmentally sensitive areas to oil exploration). Increasing energy efficiency is a "win-win" strategy from the perspective of economic growth, national security and reliability, and environmental protection.

This set of energy efficiency policy recommendations will increase the efficiency of energy use in our homes, commercial buildings, factories, and vehicles. It will lead to significant reductions in future demand for electricity, oil, natural gas, and coal. It does not entirely solve our nation's energy problems–other policies to increase the energy supplies, especially cleaner energy supplies, also are needed. But adopting these policies will significantly reduce energy demand growth over the next 20 years, thereby reducing the problems and need for other policies that are not "win-win" options; i.e., that involve trade-offs between greater domestic production and security, economic well-being, and environmental protection.

The policy recommendations are listed below. They involve a wide range of mechanisms including financial incentives, financing, voluntary initiatives, stronger efficiency standards, expanded R&D, and better information and education. No one approach is adequate for transforming markets and increasing the efficiency of energy use on a large scale throughout the economy. For each recommendation, we present background, the specific proposal, precedents, and estimated impacts.[1]

List of Recommendations

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11. Expand Use of Combined Heat and Power through Environmental Permitting Reform
12. Expand Use of Combined Heat and Power through Enhanced Utility Grid Access

[1] For estimates of the overall impacts that these policies could have if adopted together, see Geller, Bernow and Dougherty 1999; Interlaboratory Working Group 2000.

Policy: Public Benefit Trust Fund as Part of Electric Utility Restructuring

Background

Electric utilities historically have funded programs to encourage more efficient energy use, assist low-income families with home weatherization and energy bill payment, promote the development of renewable energy sources, and undertake research and development. However, increasing competition and restructuring have led to a decline in these "public benefit expenditures" over the past five years. Total utility spending on all demand side management programs (i.e., energy efficiency and peak load reduction) fell by nearly 50% from a high of $3.0 billion in 1993 to $1.6 billion in 1998 (1998 dollars).

Proposal

In order to ensure that public benefits activities continue following restructuring, 15 states have established public benefits funds through a small charge on all kilowatt-hours (kWhs) flowing through the transmission and distribution grid. This policy would create a national public benefits trust fund, similar in concept to the public benefits fund included in the Clinton Administration's federal utility restructuring proposal. The federal trust fund would provide matching funds to states for eligible public benefits expenditures. This policy would encourage states and utilities to continue or in some cases expand energy efficiency and other public benefits activities. The size of the public benefits trust fund we recommend is based on a non-bypassable wires charge of two-tenths of a cent per kWh.

Once a public benefits fund is adopted, utilities, state agencies, or some other state-designated "fund manager" would carry out energy efficiency programs. In a more competitive, "restructured" utility market, these programs typically focus on assisting consumers unlikely to receive energy efficiency services by the private sector (i.e., low-income households or small businesses), expanding the private energy services industry, and encouraging market transformation. The programs lead to efficiency improvements in appliances, lighting, HVAC systems, motor systems, etc.—areas where there is still enormous cost-effective energy efficiency potential.

Precedents

As noted above, 15 states including California, New York, New Jersey, Wisconsin, and various New England states already have enacted state public benefit funds to support energy efficiency and other programs. The Clinton Administration has proposed a nation public benefits trust fund based on a charge of one-tenth of a cent per kWh, half the level proposed here. Our recommendation is included in utility restructuring bills sponsored by Senator Jeffords' (S. 1369) and Rep. Pallone's (H.R. 2569).

Impacts

Our analysis estimates the incremental investment in and savings from energy efficiency measures as a result of the federal public benefits trust fund. We do not include savings from

public benefit programs already underway or likely to occur in the absence of a federal fund. In particular, we assume that states gradually expand their eligible programs, using 90 percent of the maximum funds available by 2005 and thereafter. Based on historical trends, we assume that energy efficiency programs represent 59 percent of the public benefits expenditures and that energy savings typically cost $0.03/kWh on a levelized basis. We also assume that 20 percent of all participants are "free riders" (i.e., consumers who would invest in efficiency measures in the absence of state/utility programs).

These assumptions result in incremental end-use electricity savings of 131 TWh (3.6%) in 2005, 343 TWh (8.8%) in 2010, and 756 TWh (17.4%) in 2020, according to the ACEEE. Most of these savings are likely to be in the residential and commercial sectors since they are the main focus of state/utility efficiency programs using public benefits funds. The total investment in efficiency measures stimulated by the federal public benefits fund is estimated to be $106 billion while the energy bill savings are expected to reach $238 billion. (net present value through 2020), meaning net benefits of $132 billion. Furthermore, ACEEE estimates that this policy will reduce CO2 emissions by 103 MMT of carbon by 2010 and 207 MMT by 2020, when implemented together with other energy efficiency and renewable energy initiatives.

Policy: Voluntary Agreements and Incentives to Reduce Industrial Energy Use

Background

The industrial sector accounts for about 39 percent of total U.S. energy consumption. Manufacturing represents about two-thirds of industrial energy use, with six energy-intensive sectors dominating (petroleum refining, chemicals, primary metals, paper and pulp, food and kindred products, and stone, clay, and glass products). There is substantial potential for cost-effective efficiency improvement in both energy-intensive and non-energy-intensive industries. For example, an in-depth analysis of 49 specific energy efficiency technologies for the iron and steel industry found a total cost-effective energy savings potential of 18 percent.

Proposal

In order to stimulate widespread energy efficiency improvements in the industrial sector, we propose that U.S. government (White House or DOE) establish voluntary agreements with individual companies or entire sectors. Companies or entire sectors would pledge to reduce their overall energy and carbon emissions intensities (energy and carbon per unit of output) by a significant amount, say at least 15-20 percent over 10 years. The government would encourage participation and support implementation by: (1) providing technical and financial assistance to participating companies that request assistance, (2) offering to postpone consideration of more drastic regulatory or tax measures if a large portion of industries participate and achieve their goals, and (3) expanding federal R&D and demonstration programs.

In order to get a large fraction of industries making serious commitments and entering into voluntary agreements with the federal government, it may be necessary for the government to threaten to take more drastic action. For example, the government could indicate that is was going to issue carbon emissions standards or energy efficiency standards on major types of industrial processes (e.g., steelmaking, aluminum production, paper and pulp making, petroleum refining, etc.), or adopt energy or carbon taxes, if industries did not enter into meaningful voluntary agreements.

Precedents

A number of major companies are demonstrating that it is possible to significantly reduce energy and carbon intensity while enhancing productivity and profitability, and have set voluntary goals for doing so. For example, Johnson and Johnson set a goal in 1995 of reducing energy costs 10 percent by 2000 through adoption of "best practices" in its 96 U.S. facilities. As of April 1999, they were 95 percent of the way towards this goal, with the vast majority of projects providing a payback of three years or less. In 1998, British Petroleum announced it would voluntarily reduce its carbon emissions to 10 percent below 1990 levels by 2010, representing an almost 40 percent reduction from projected emissions levels in 2010 given "business-as-usual" emissions growth. And DuPont announced it would reduce its GHG emissions worldwide by 65 percent relative to 1990 levels while holding total energy use flat and increasing renewable energy resources to 10 percent of total energy inputs by 2010. DuPont is on track for achieving earlier commitments to reduce energy intensity 15 percent and total GHG emissions 50 percent by 2000, relative to 1990 levels. If J&J, BP, and DuPont can make and deliver on these voluntary commitments, so can other

companies.

Voluntary agreements between government and industry along the lines proposed here have resulted in substantial energy intensity reductions in some European nations such as Germany, the Netherlands, and Denmark. Voluntary agreements between government and industry have been used on a limited basis to achieve energy or environmental gains in the United States. For example, ...

Impacts

In order to estimate the impacts of this policy, we rely on a recent, detailed analysis of voluntary agreements carried out by a team from national laboratories. Based on this analysis, we estimate that widespread adoption of voluntary agreements and supporting activities could reduce primary energy use in the industrial sector by about 4.2 quads (11 percent) in 2010 and 6.9 quads (16 percent in 2020), relative to energy consumption levels otherwise forecast by the Energy Information Administration. About 40 percent of this savings comes from electricity (measured on a primary energy basis), with smaller portions coming from petroleum products, natural gas, and coal. The corresponding reductions in CO2 emissions are 71 million metric tons of carbon by 2010 and 95 million metric tons by 2020.

In order to realize these energy savings, a cumulative investment in efficiency measures of about $36 billion through 2020 is needed. But the energy bill savings would equal around $98 billion, leading to net economic benefits of about $60 billion (all values are in discounted 1996 dollars).

Policy: Raise the Corporate Average Fuel Economy (CAFÉ) Standards for cars and light trucks

Background

The average fuel economy of new passenger vehicles (cars and light trucks) has declined from a high of 25.9 miles per gallon (mpg) in 1988 to 23.8 mpg in 1999 due to increasing vehicle size and power, the rising market share of light trucks, and the lack of tougher Corporate Average Fuel Economy (CAFE) standards. The original CAFE standards for cars were adopted in 1975 and reached their maximum level in 1985. The standard for light trucks was increased via rulemaking just 0.2 mpg since 1987. For the past five years, the Congress has prevented the Department of Transportation from carrying out a rulemaking to consider raising the CAFÉ standards.

Proposal

We propose increasing the CAFE standards for cars and light trucks 5% per year so that they reach 45 mpg for cars and 34 mpg for light trucks by 2010, with further improvements beyond 2010 (i.e., standards of 65 mpg for cars and 48 mpg for light trucks by 2020). Alternatively, the separate standards for cars and light trucks could be combined into one value for all new passenger vehicles, specifically 39 mpg by 2010 and 55 mpg by 2020 for all new cars and light trucks combined. This level of fuel economy improvement is technically feasible and cost effective for consumers according to studies conducted by ACEEE and the Union of Concerned Scientists. The 5% annual fuel economy improvement is the rate of improvement that Ford has indicated it will achieve voluntarily for its SUVs over the next five years. If this rate can be achieved in SUVs, it can be achieved in all new vehicles made by Ford as well as other manufacturers, and the rate of improvement can continue for ten years or more.

Tougher CAFE standards can be met through technological improvements, both refinements to conventional vehicle designs in the near term and advanced vehicle technologies (lightweight materials, hybrid drivetrains, and fuel cells) over time. Two mass-produced hybrid electric vehicles with 50-75 percent greater fuel efficiency compared to typical new cars in their size class were introduced in the United States in 2000 and other hybrid electric vehicles have been announced. ACEEE and UCS estimate that the 2010 fuel efficiency target can be met with an average incremental vehicle cost of $830 and the 2020 target at an average incremental cost of $1,755 (retail cost expressed in 1996 dollars).

Precedents

The initial CAFE standards enacted in 1975 were largely responsible for the near doubling in the average fuel economy of cars and more than 50 percent increase in light truck fuel economy from 1975 to 1987. The standards were met largely through cost-effective technologies (e.g., weight reduction, engine efficiency improvement, etc.) and without negative side effects. Cars got both safer and less polluting at the same time they became more fuel efficient. In fact the traffic fatality rate (deaths per million vehicle miles of travel) declined by

about 50% between 1975 and 1997. The Department of Transportation has the authority to raise the standards via a rulemaking; however the Department has been prohibited from doing so by the Congress via riders attached to annual Appropriations bills in spite of overwhelming public support in favor of raising the standards.

Impacts

The CAFE standards proposed here could result in about 4 quads of energy savings by 2010 and 8 quads by 2020, relative to modest improvements in new vehicle fuel efficiency in the absence of the policies. These savings are equivalent to about 1.9 million barrels of petroleum per day by 2010 and 3.8 million barrels per day by 2020. The avoided carbon emissions would reach about 82 million metric tons of carbon equivalent by 2010 and 164 million metric tons by 2020.

In order to realize these energy and carbon savings, a cumulative investment of about $115 billion in vehicle efficiency measures is needed through 2020. But the energy bill savings over the same time period would reach about $500 billion, leading to net economic benefits of about $385 billion (all values in discounted 1996 dollars).

Proposal: Provide tax credits to purchasers of highly fuel efficient vehicles

Background

Although the average fuel economy of new cars and light trucks is not rising, a great amount of R&D and demonstration of innovative vehicle fuel efficiency measures has occurred over the past decade as part of the Partnership for New Generation Vehicles (PNGV) and other programs. Vehicle manufacturers are starting to commercialize fuel-efficient hybrid electric vehicles such as the Honda Insight and Toyota Prius, which achieve 50–85% greater fuel economy than equivalent conventional vehicles. These cars employ a variety of technologies including innovative engine designs, weight reduction, and the hybrid electric powertrain to reach these impressive fuel economy levels. Other manufacturers plan to introduce hybrid electric vehicles in the next few years.

Some vehicle manufacturers also have indicated that they will start mass producing fuel cell electric vehicles starting around 2005. A limited number of fuel cell electric buses have already been produced and field tested. Fuel cell electric vehicles have the potential for even greater fuel economy and lower emissions than vehicles employing an internal combustion engine, as do the current set of commercially available and prototype hybrid vehicles.

Cost is a major obstacle to the widespread production and sale of highly efficient hybrid and fuel cell vehicles. Honda and Toyota are absorbing a substantial portion of the cost for their initial hybrid vehicles (i.e., selling them at a loss). While costs are expected to decline over time as technology advances and economies of scale occur, it is unclear how fast this "learning" will occur and whether or not hybrid and fuel cell vehicles will reach cost competitiveness and widespread market shares without significant public support. Given the enormous public benefits–lower oil consumption, lower criteria pollutant emissions, and lower greenhouse gas emissions–that such vehicles promise, it is reasonable for the government to provide financial incentives initially in order to stimulate mass production and support initial sales of these innovative vehicles.

Proposal

The Clinton Administration and U.S. auto manufacturers have proposes extending the current tax credit of up to $4,000 for electric and fuel cell vehicles and also offering a tax credit of up to $3,000 for qualifying hybrid electric vehicles. Under this proposal, the amount of the hybrid vehicle credit would be based on the capacity of the energy storage system and amount of regenerative breaking. Also, the hybrid vehicle credit would not start until 2003 even though some hybrid vehicles already are mass produced and sold.

We propose extending the current tax credit for electric and fuel cell vehicles through 2008 but suggest fixing the credit at a flat $4,000 per vehicle. This change would give manufacturers further incentive to reduce the cost of and price of electric and fuel cell vehicles. Regarding hybrid vehicles, we propose offering tax credits tied to fuel efficiency and emissions levels, similar to the scheme proposed by the Clinton Administration in 1999. However, the

credits should start in 2001; they should be extended to all high efficiency vehicles--not just hybrid vehicles- that are at least 50% more efficient than typical new vehicles in any particular class; the credits should end or should phase down by 2006 or so; and they should be given only to vehicles meeting forward-looking emissions standards such as the California ULEV or SULEV standards. Also, tax credits should be extended to purchasers (or manufacturers) of hybrid and fuel cell buses or medium-duty trucks. Such provisions would reward fuel efficiency innovation of all types and ensure significant energy and environmental benefits.

Precedents

Extending the tax credits for electric and fuel cell vehicles is supported by the Clinton Administration and is included in a number of bills introduced in the 106th Congress with bipartisan sponsorship. Tax credits for hybrid vehicles also are supported by the Clinton Administration and are included in a number of bills introduced in the 106th Congress. However, as noted above, these bills do not include all of the features suggested above.

Impacts

It is reasonable to assume that on the order of 0.5-1.0 million electric and fuel cell vehicles and 1.0-1.5 million hybrid electric (or equivalent high fuel efficiency) vehicles would qualify for the tax credits suggested above, assuming the former run through 2008 and the latter through 2006. Roughly speaking, these are the number of qualifying vehicles assumed by the Clinton Administration in their estimates of costs and impacts from their tax credit proposals. Participation on this scale would have relatively modest direct impacts on energy use and CO2 emissions- energy savings of xxx and avoided carbon emissions of 1.5-2.5 million metric tons per year. However, if the credits are successful in helping to build markets and advance the technologies so that these innovative vehicles become competitive in the marketplace and markets continue to grow after the credits are phased out, the indirect impacts could be many times greater than the direct impacts; e.g., providing a total carbon emissions reduction of at least 10 million metric tons by 2015. On the other hand, if the tax credits are adopted in conjunction with stronger CAFE standards, then it is important not to double-count savings. Thus, the savings from the tax credits should be subsumed under those from the CAFE standards if both policies are adopted.

Proposal: Expand the Gas Guzzler Tax to Include Light Trucks and Provide Rebates to Purchasers of Efficient Vehicles

Background

The average fuel economy of new passenger vehicles is declining due to the growing market share of inefficient light trucks (SUVs, pickups, and minivans) and the lack of standards or financial incentives stimulating higher fuel economy in all new vehicles. Relatively inefficient cars–those with composite fuel economy rating below 22.5 MPG--are subject to a gas guzzler tax. The tax starts at $1,000 for vehicles 21.5-22.5 MPG and increases to a maximum of $7,700 as fuel economy drops. This policy, enacted in 1978, was relatively successful in "pulling up" the bottom end of the vehicle fleet. Relatively few new cars are subject to the gas guzzler tax today. However, millions of gas guzzling light trucks are sold today and used mainly as passenger vehicles. These vehicles are not subject to the gas guzzler tax, creating a loophole that encourages production and marketing of these inefficient and polluting vehicles. Furthermore, the revenue generated by the gas guzzler tax goes to the general Treasury rather than being used to stimulate greater production and purchase of efficient "gas sipping" vehicles.

Proposal

First, the gas guzzler tax loophole should be closed by having the current gas guzzler tax apply to all new passenger vehicles. If a consumer or business wants to by an inefficient vehicle, they should have to pay for the right to excessively pollute the atmosphere and increase U.S. dependence on oil imports. Given the sales and fuel economy of light-duty SUVs, pickup trucks, and minivans sold in 1999, automakers would have paid an additional $10.2 billion in gas guzzler taxes on their vehicles that year if this policy had been in place. Of course, the objective is to discourage sales of gas guzzlers and improve fuel economy, so that actual revenue collected after this policy is announced and takes affect could be significantly lower. But it is likely that the policy would generate billions of dollars in new tax revenue each year, at least initially.

In conjunction with closing the gas guzzler tax loophole and the revenues this would generate, we recommend providing tax credits to either manufacturers or consumers for vehicles that are "gas sippers"–significantly more efficient than the average fuel economy of all new vehicles. The combination of fees on gas guzzling vehicles and rebates or credits on gas sipping vehicles is sometimes referred to as "feebates". The credits could start at say 20% above the average fuel economy of new vehicles (i.e., now about 24 MPG based on the EPA composite rating) and could increase as the fuel economy rating increases, mirroring the way the gas guzzler tax is designed (e.g., $200 credit for vehicles 28.5-29.5 MPG, $400 credit for 29.5-30.5 MPG, etc.). Alternatively, the credits could normalized based on some measure of vehicle size (e.g., vehicles would need to be x% more efficient than the average for the vehicle class rather than the overall average for all new vehicles). In either case, a sliding scale should be used and the reference point should be adjusted as the overall fuel economy of new vehicles increases. Also, vehicles should be ineligible for tax credits via feebates if they receive separate tax credits offered to innovative hybrid and fuel cell vehicles.

Precedents

Feebates have been proposed at both the federal and state level. In 1991, then Senator Gore proposed a bill (S. 210 in the 102nd Congress) that included fees and rebates based vehicle fuel economy in each size class. Other bills in this period (H.R. 1583 and H.R. 2960 in the 102nd Congress) proposed similar schemes. At the state level, the California legislature enacted feebates based on both fuel economy and criteria emissions in 1990, but then Goveror Deukmejian vetoed this bill. In 1992, Maryland enacted a modest feebate scheme as an add-on to the state's vehicle title tax. However, implementation was blocked by a Department of Transportation opinion stating that state fuel economy incentive programs are federally preempted.

Impacts

Estimates of the impacts of feebates by Lawrence Berkeley Laboratory show that relatively modest rebates of up to about $1,000 per vehicle could have a significant impact on the average fuel economy of the new vehicle fleet, leading to about a 10-20% improvement in rated fuel economy of new vehicles within 10 years. In the short run, consumers shift towards more fuel-efficient vehicles available in the marketplace. Over the longer run, the selection of vehicles being marketed changes as manufacturers respond by adding efficiency measures. Overall, fuel savings could reach 7-8 billion gallons of gasoline annually by 2010, equivalent to about 1.0 Quads of energy savings or about 23 million metric tons of avoided carbon emissions each year.

If feebates are adopted in conjunction with stronger CAFE standards, then it is important not to double-count savings. Thus, the savings from feebates should be subsumed under those from the CAFE standards if both policies are adopted and the standards are relatively stringent. Feebates and tougher fuel economy standards are complementary, with the incentives helping to move the market towards regulatory compliance.

Policy: Promotion of High Efficiency and Cleaner Vehicles through Improved Labeling and Promotion

Background

There is considerable variation in the fuel economy and emissions levels of new vehicles in any particular vehicle class (e.g., compact cars, minivans, large SUVs, etc.). This variation is in fact growing as manufacturers introduce relatively fuel-efficient and low-emitting hybrid vehicles like the Honda Insight, Toyota Prius, as well as conventional "ultra low emissions" vehicles. Some efforts are underway to better identify and promote these vehicles, including a DOE/EPA-sponsored web site and the ACEEE Green Book that provides overall environmental ratings of new cars and light trucks. However, more can and should be done to promote purchase of "best-in-class" and innovative vehicles.

Proposal

The federal government could take a number of actions to increase awareness of and interest in buying fuel-efficient and cleaner vehicles. These actions would be voluntary in the sense that they do not require consumers or businesses to participate. But they would complement other policies such as stronger CAFE standards, expansion of the gas guzzler tax, and tax credits to promote the commercialization and sales of hybrid, fuel cell, and other innovative highly efficient vehicles, as part of a comprehensive market transformation strategy.

First, we propose extending "Energy Star" labeling to high fuel efficiency and low-emitting cars and light trucks. This would make it easy for consumers to identify "greener vehicles" , and would make it easy for fleet owners to commit to "buying green". We recommend that the Energy Star designation be based on a combination of fuel economy and tailpipe emissions, which is how the ACEEE environmental scoring is done, and would apply to the best vehicles in each vehicle category. The specifications for qualification should change over time as manufacturers introduce more efficient and cleaner vehicles. Manufacturers should be encouraged to display the Energy Star label on cars in showrooms (where applicable) and dealers trained to properly explain the label.

Second, owners of vehicle fleets, both public sector organizations and private companies, should be encouraged to commit to only buying Energy Star vehicles (or high efficiency and cleaner vehicles using some other means of identifying these vehicles). It might also be possible to organize fleet owners into "green vehicle buying cooperatives" with the cooperatives or the federal government negotiating discounts from vehicle manufacturers. The government could promote purchase commitments and buying cooperatives, along the lines of the promotion being carried out and product discounts being obtained for other Energy Star products.

Precedents

The Department of Energy and EPA have extended Energy Star labeling and promotion

to a wide range of products, new homes, and commercial buildings. It would be logical to add cars and light trucks to this "green brand" program. The Energy Policy Act of 1992 includes fleet purchase targets and requirements for alternative fuel vehicles (AFVs). DOE initiated a "Clean Cities Program" to promote purchase of and build infrastructure and markets for AFVs at the local level. However, actual purchase of AFVs is well below Energy Policy Act targets due to limited vehicle availability, relatively high cost of these vehicles, and limited fueling infrastructure. Even if the AFV targets were met, there would still be significant potential for promoting commitments to buy highly efficient and low emitting gasoline-fueled vehicles on the part of public and private fleet owners. ACEEE estimates that the target fleet market (after deducting the EPAct AFV requirements) is over 1 million vehicles per year.

Impacts

ACEEE has estimated the potential energy savings and avoided carbon emissions from a "best-in-class" vehicle labeling and promotion program. Assuming a very strong program that affects 30% of fleet purchases and 15% of the general market, the estimated energy savings is about 0.4 quads (2.5% of passenger vehicle fuel use) by 2010, equivalent to 7 MMT of avoided carbon emissions that year. Of course, if the participation is lower, the energy savings and avoided carbon emissions would be reduced. It also should be recognized that if improved labeling and promotion are carried in combination with stronger CAFE standards, these savings should be subsumed under those from the CAFE standards.

Policy: New Appliance Efficiency Standards

Background

Appliance efficiency standards are one of our nation's most effective strategies for saving energy. Appliance standards pioneered by a few states in the 1970s and subsequently adopted at the national level in 1987 have already cut national electricity use by 3%–equivalent to the power supplied by 30 large power plants. This means less fuel is burned to make electricity and less pollution is generated.

National appliance efficiency standards have received bipartisan support. The standards legislation was signed into law in 1987 by President Reagan; new standards were issued during both the Bush and Clinton Administrations. Efficiency standards already adopted will cut U.S. greenhouse gas emissions by about xx million MMT of carbon equivalent by 2010, making this a key part of our national effort to limit global warming. On the economic side, consumers and businesses will save $xxx billion net from efficiency standards already adopted. But additional energy, carbon emissions, and dollar savings are achievable through upgraded or new standards on a wide range of products.

Proposal

First, we recommend that DOE uses its existing authority to upgrade appliance and equipment efficiency standards where technically and economically feasible. Although a new set of standards were issued in January, 2001, DOE is still many years behind schedule in reviewing and upgrading standards on other products. DOE should issue new standards on transformers, refrigerators and freezers, furnaces and boilers, commercial packaged air conditioning equipment, commercial boilers, and dishwashers. These standards should be set at the highest levels justified under the current law, and the standards should be issued without further delay.

Second, we urge that minimum efficiency standards be set, either via rulemaking or new legislation, on a variety of products that DOE is not currently considering standards for. DOE has the authority, but has never used it, to extend standards to additional types of products where standards would be technically and economically feasible and would save a significant amount of energy. In particular, we urge extending standards to TVs, light fixtures, commercial refrigeration equipment, commercial clothes washers, and furnace fan motors.

Precedents

National appliance efficiency standards on products such as refrigerators, clothes washers, water heaters, and air conditioners have been upgraded previously. Appliance and equipment efficiency standards were extended to additional products including motors, various types of lamps, and heating and air conditioning equipment used in commercial buildings as part of the Energy Policy Act of 1992. Efficiency standards on TVs and standby power consumption for some products have been enacted in Japan.

Impacts

Adopting stringent new appliance standards could result in widespread implementation of innovative energy efficiency technologies such as condensing-type gas furnaces and low-loss transformers. Regarding light fixtures, standards could lead to replacement of inefficient and dangerous halogen torchiere lamps with fluorescent-based torchieres. And standards on furnace fan motors could make variable speed motors the norm.

According to ACEEE, new appliance efficiency standards (not covering standards already issued in 2001 or earlier) could save about 50 TWh of electricity and 0.12 quads of natural gas (end-use only) by 2010. By 2020, the savings could grow to 105 TWh and 0.25 quads of natural gas as the appliance stock continues to turn over. Avoided CO2 emissions would reach about 13 MMT of carbon equivalent in 2010 and 22 MMT in 2020. Households and businesses would realize tens of billions of dollars of savings since the energy bill reductions would significantly exceed any increase in purchase cost. Businesses purchasing more efficient transformers and commercial HVAC equipment, for example, would realize cumulative net savings of about $8 billion through 2020.

Proposal: Provide tax credits to purchasers or manufacturers of highly fuel efficient appliances, heating, and air conditioning equipment

Background

There are a host of innovative technologies that could significantly reduce the energy use and thus the pollutant emissions associated with heating, cooling, and appliances used in both residential and commercial buildings. For example, electric heat pump water heaters cut electricity consumption for water heating by 50–70% compared to conventional electric water heaters. Gas-fired heat pumps are about twice as efficient for heating as typical new gas furnaces and also provide space cooling using natural gas as the energy input. Super-efficient electric air conditioners, refrigerators, and clothes washers use 25-50% less energy than typical new models sold today. Fuel cell cogeneration systems offer the potential to power and heat homes or commercial buildings very cleanly and at high overall efficiency. However, none of these technologies are produced yet on a large scale. High first cost is a major barrier preventing more widespread production, marketing, and sale. Without financial incentives, they may never overcome the "initial high cost" barrier and get established in the marketplace.

Given the potential public benefits–lower energy consumption, increased electric grid reliability, lower criteria pollutant emissions, and lower greenhouse gas emissions–that such technologies promise, it is reasonable for the federal government to provide financial incentives in order to stimulate mass production and support initial sales of these innovative technologies. The incentives should be of limited duration and possibly phase down over time so that the cost to the government is limited and the technologies eventually compete (or not compete) without subsidies.

Proposal

We propose providing tax credits to either manufacturers or purchasers of highly efficient building equipment, focusing on innovative "leapfrog" technologies such as those mentioned above. This would minimize the number of "free riders" and provide the biggest "bang per buck" in terms of market transformation. Specifically, we propose tax incentives that are either fixed in value or calculated as a fraction of the first cost (with a cap on the value) for the following products:

- electric heat pump water heaters
- gas-fired heat pumps
- electric air conditioners and heat pumps with SEER > 13.5
- building fuel cell cogeneration systems
- superefficient refrigerators and clothes washers
- highly efficient ground-source heat pumps.

The tax credits should be on the order of 20% of the first cost for the most efficient products, with a sliding scale or lower tier(s) for less efficient but still innovative products. This approach has been followed in the climate technology tax credit proposals put forward by the

Clinton Administration. The tax credits should remain in effect for around 5 years, say 2001-2005, and could ramp down in magnitude in the final year or two.

Precedents

In 1999 and/or 2000, the Clinton Administration proposed tax credits for heat pump water heaters, gas-fired heat pumps, fuel cell cogeneration systems, and high efficiency central air conditioners and electric heat pumps. These proposals, or components of them, were incorporated in a number of bills introduced in the 106th Congress. Also, energy efficiency advocates and appliance manufacturers strongly supported tax credits for super-efficient appliances. Their proposal, involving credits for appliance manufacturers with a cap on the amount any one company could claim, was introduced in the 106th Congress with broad bipartisan support.

Impacts

It is likely that there would be millions of qualifying products sold during the 2001-2005 time period. The total cost to the Treasury might reach on the order of $1.5-2.0 billion, with high efficiency central air conditioners likely being the most costly component of the package. Sales of fuel cell cogeneration systems might reach 200-500 MW of total installed electric capacity, with this product costing the Treasury $80-200 million.

Participation on this scale would have a relatively modest direct impact on energy use and CO2 emissions–saving on the order of 0.05 quads of primary energy and 1.0-1.5 million metric tons of carbon emissions per year by the end of the eligibility period. However, if the credits help to establish these innovative products in the marketplace and reduce the first cost premium so that the products are viable after the credits are phased out, the indirect impacts could be many times greater than the direct impacts. Total energy savings could reach 0.25-0.5 quads and avoided carbon emissions could reach 5-10 million metric tons by 2015 if the credits are successful.

Policy: Expand Energy-Efficient Product Labeling and Promotion

Background

The Energy Star labeling program implemented by EPA and the Department of Energy covers a wide range of residential and commercial products including appliances, heating and cooling systems, office equipment, and lighting products. The Energy Star program stimulated the wide use of power management in personal computers, photocopiers, printers, and facsimile machines. Power management can reduce the energy use of office equipment by up to 50%. Around 80% of new personal computers, 95% of monitors, 99% of printers, and 65% of copiers now have power management features and thus the Energy Star label. In total, consumers bought more than 100 million Energy Star products in 1999. As a result of cumulative purchases, consumers are saving more than 29 billion kWh per year--worth about $2.3 billion annually. And recognition of the Energy Star label–the national symbol for energy efficiency–is rapidly growing.

Proposal

EPA and DOE should expand the scope and level of promotion associated with the Energy Star program. Energy Star labeling should be extended to additional types of electronic products (cable boxes, telephone equipment, battery chargers, etc.), commercial refrigeration equipment (vending machines, freezer cases, etc.), microwave ovens, motors, and other mass-produced products not currently covered. The new commercial building benchmarking and rating program so far only applies to office buildings. The program should be extended to other sectors including schools, retail buildings, healthcare, and lodging as well. And more funding is needed to expand promotion and training activities in the Energy Star Small Business and new homes programs, as well as to increase consumer awareness and market penetration of energy-efficient Energy Star products of all types.

Precedents

EPA and DOE have been trying to expand the Energy Star program but have faced funding constraints due to the Congress failing to provide adequate funding levels in recent years. Nonetheless, Energy Star labeling has begun for TVs, VCRs, and audio systems with low standby power consumption, and similar efforts are planned for other types of electronic products. Also, the Energy Star brand has been extended to cover highly efficient new homes with over 1,500 builders now participating and more than 17,000 Energy Star new homes already built. These outstanding homes use 35% less energy for heating and cooling on average compared to the current "good practice" homes. The newest product is a performance rating system for commercial buildings that allows labeling and recognition of the most efficient buildings across the country. Funding for EPA's portion of the Energy Star program (a large majority of the program is operated by EPA) will increase in FY2001 in order to support these and other new activities.

Impacts

ACEEE estimates that extending Energy Star labeling to additional types of electronic products, microwave ovens, and commercial refrigeration equipment could save about 13 billion kWh/yr by 2010 and 19 billion kWh/yr by 2020. Expansion of the Energy Star homes program and commercial building benchmarking program new appliance efficiency standards could save just as much if not more energy, as could additional publicity and promotion of all elements of the program. Assuming these combined efforts save 40 TWh/yr by 2010 and 60 TWh/yr by 2020, the avoided CO2 emissions would reach about 9 MMT of carbon equivalent in 2010 and 12 MMT in 2020. Consumers would realize substantial cost savings–on the order of $2-3 billion by 2010 and $3-4 billion by 2020–since there usually is little or no incremental first cost for upgrading products and buildings to the Energy Star levels. [Note: These savings are in addition to those from resulting from ongoing Energy Star activities.]

Financing and Technical Assistance for Energy Efficiency Investments in Federal, State, and Other Public Buildings

Background

There remains a very large potential for cost-effective energy savings in federal, state, and local government buildings. While some progress has been made through the Federal Energy Management Program (FEMP), the federal government still spends nearly $4 billion to heat, cool, light, and power its roughly 500,000 buildings. The Federal government together with state and local governments spend more than $8 billion per year on energy in public buildings, with K-12 schools responsible for additional $6 billion in energy bills annually.

Executive Order 13123 signed in 1999 requires federal agencies to reduce their energy use per square foot of floor area in buildings 30% by 2005 and 35% by 2010, relative to energy intensity levels in 1985. It is estimated that investments of $4-6 billion in energy efficiency projects will be needed to meet this goal. However, federal agencies are allocating very little in their budgets to energy savings projects, thereby maintaining energy waste and high energy bills. Use of Energy Service Companies (ESCOs) can help the public sector obtain third party financing, but are by no means a complete solution to this problem. And the situation is similar in many states and municipalities–public sector budgets are squeezed and little or no public funding is made available for investments in energy efficiency projects.

Proposal

This proposal is modeled on an outstanding state energy efficiency program in Texas (see precedent below). It also is based in part on a legislative proposal, the Federal Energy Bank Act (S. 95 in the 107th Congress), introduced by Sen. Kohl and co-sponsors. This proposal, unlike the proposed Federal Energy Bank Act, has two components–federal and non-federal.

The federal component involves first creating a "Bank" to fund energy efficiency projects in Federal buildings. The Bank would receive an amount equal to 5 percent of each agencies utility payments each year (approximately $200 million annually) for five years. This is the approach taken in S. 95, although we recommend five years of funding rather than three years. Money in the Bank would be lent back to agencies for qualifying energy efficiency projects with a payback of 10 years or less. Agencies would then pay back their loans to the Bank in order to maintain funding for energy efficiency investments over the long run. Furthermore, an additional $10-20 million per year should be provided to the FEMP for providing technical assistance in energy efficiency project development, monitoring, and commissioning, in part using techniques developed and successfully applied in the Texas LoanStar program.

The non-federal component would attempt to replicate the Texas LoanStar program throughout the country. States, or groups of states, would be encouraged to start their own financing and technical assistance programs for financing energy efficiency projects in state and local public buildings including schools. The federal government would devote $150 million per year to this effort for five years or more, and would match state commitments dollar per dollar

(i.e., if a state wanted to establish a $50 million revolving loan fund, it would have to appropriate $25 million from its own budget in order to receive $25 million in federal funds). In addition, the federal government through the DOE would help to train technical experts that would engage in project development, monitoring, and evaluation at the state and local level. In both the federal and non-federal components, the programs would make wide use of ESCOs to actually implement energy efficiency projects.

Precedent

The Texas LoanStar program was begun in 1990 with $98.6 million in capital for energy efficiency projects in state and local government buildings, universities, and public schools in Texas. In addition to this revolving loan fund, a team of energy efficiency experts from Texas A&M University received funding to provide technical support through auditing guidelines, training, monitoring, evaluation, and improved operations and maintenance techniques using monitored data (called "continuous commissioning"). This very effective program resulted in $133 million in energy efficiency project investments and $83 million in cumulative energy bill savings as of the end of 1999. Furthermore, the savings are increasing by $12-15 million each year, and other states have begun to copy elements of this award-winning program.

Impacts

This initiative is intended to stimulate approximately $500 million per year in energy efficiency project investment ($200 million in federal buildings and $300 million at the state/local level). Based on the experience in the Texas LoanStar program and elsewhere, this level of investment should result in at least $400-500 million of energy bill savings per year by the end of the fifth year, with savings continuing to grow as investments are made. By 2010, energy bill savings could equal $800 million to $1 billion per year. Primary energy savings would equal around 200 trillion Btus per year by 2010, equivalent to about 95,000 barrels of oil per day and 3 million metric tons of avoided carbon emissions that year.

Other benefits that would result from improving energy efficiency in public buildings and schools include improved comfort, better indoor air quality, higher worker productivity, lower levels of worker illness, and better student performance. For example, recent studies show that increasing natural lighting in schools can lead to better learning and better student performance on standardized tests, and that increasing natural lighting in retail stores can lead to higher sales revenue.

Policy: Promotion of Clean, High-efficiency CHP through Environmental Permitting Flexibility

Background

Combined heat and power (CHP) technology is a system that produces multiple usable energy forms together (e.g., electricity and steam) from a single fuel input. These systems can achieve much greater efficiency than separate systems that produce the same output. These systems achieve greater efficiency because they recover heat that would normally be wasted in separate power production, and displace the fuel that would otherwise be used to produce heat in a separate boiler. Because of greater efficiency achieved, the total emissions from CHP systems are often lower than the combined emissions required to produce the same output from separate power and heat systems.

Most stationary air quality permitting regulations do not reflect the reduced emission achieved from greater efficiency. Current regulation is based on either the emissions per unit of fuel burned or the concentration of a pollutant in the stack. This "tail-pipe" approach makes no adjustment in allowable emissions rate for efficiency. A less efficient system can emit more pollution because it burns more fuel. Embodied in this approach are the current "best available control technology (BACT)" and "lowest achievable emissions rate (LAER)" regulations, which set targets independent of the system's efficiency.

Thus, an efficient CHP system receives no credit for net total emissions reductions achieved when compared to separate systems meeting the same end-use. In fact, there are examples where a project significantly reduced onsite emissions, and displaced utility emissions, but was unable to receive regulators' approval. Further, many regulators apply a higher standard to projects that generate electricity. Most current regulators use an implied basis that, since an emissions level is achievable at new large central power station facilities, there was no reason to allow higher levels from smaller power generation facilities. This approach does not account for the environmental benefit of simultaneously displacing the thermal generation.

A shift to output-based emissions regulations, where total emissions are divided by a system's total used energy output, would more fairly recognize the environmental benefits of efficiency. This approach would allow a CHP system to reduce the cost of pollution control equipment, while achieving lower total emissions than separate heat and power systems.

Some disagreement exists as to what level of displaced emissions should be used for avoided utility generation. Some assert that onsite generation will displace new central station combined cycle plants. However, recent research calls that assertion into question. The preliminary results of a study by the Center for Clean Air Policy[1] suggest that new CHP capacity displaces significant amounts of existing, dirty generation. An assessment of displaced emissions needs to be undertaken using realistic utility dispatch models to determine the appropriate level of displacement.

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[1] Based on a presentation at the CHP Analysis Working Group meeting October 5, 2000 by Catherine Morris, Center for Clean Air Policy.

Proposal

Either through changes to regulation or legislation, the permitting of CHP system should be shifted from an input-based to an out-put based approach. Output-based levels for BACT and LEAR, equivalent to current input based levels for separate heat and power should be used for these systems. EPA should undertake a study of utility emissions displaced by onsite generation, and set reasonable displaced emission "credit" levels. Since these regulations will be implemented at the state level, funding should be provided to EPA to educate state environmental officials about this change, and assist them in implementing these regulatory changes.

Precedents

Output based standards are clearly within the scope of the Clean Air Act (CAA). In fact, they are applied to all mobile sources (e.g., grams per mile traveled for passenger cars), and for stationary reciprocating engines (grams per horsepower-hour). The revised New Source Performance Standards (NSPS) and the NO_x State Implementation Plan (SIP) guidance both include provisions for moving to output-based emissions. In fact, EPA issued specific guidance on implementing output-based allocations in a SIP guidance document issued in May of 2000.

Impacts

It is difficult to assess the impact of this measure in isolation. Currently, CHP systems face hurdles in both environmental permitting and utility interconnection. While the removal of one barrier is likely to allow some projects to move forward, the removal of both barriers is required to allow this efficient technology to compete fairly in the market place. With both barriers removed, it has been projected that 50 GW of additional CHP capacity could be brought to market by 2010. This CHP capacity would result in a cumulative savings of over 1.5 Quads, and emissions reduction of 42.6 MMT of carbon equivalent, 0.81 MMT of SO_2, and 0.37 MMT of NO_X.[2]

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[2] Howard Geller, et. al. 1998. *Approaching the Kyoto Targets: Five Key Strategies for the United States.* Washington, DC: American Council for an Energy-Efficient Economy.

Policy: Promotion of Clean, High-efficiency CHP through Enhanced Utility Grid Access

Background

Combined heat and power (CHP) technology is a system that produces multiple usable energy forms together (e.g., electricity and steam) from a single fuel input. These systems can achieve much greater efficiency than separate systems that produce the same output. These systems achieve greater efficiency because they recover heat that would normally be wasted in separate power production, and displace the fuel that would otherwise be used to produce heat in a separate boiler. Because of greater efficiency achieved, the total emissions from CHP systems are often lower than the combined emissions required to produce the same output from separate power and heat systems.

CHP and other distributed generation technologies have encountered hurdles to interconnecting with the electric utility system leading to a hostile environment for CHP in many utility service territories. These hurdles include both lack of a standard technical specifications, and discriminatory pricing and contractual practices by some utilities.

The lack of a technical specification resulted in each utility developing its own specification. While some were straight forward, while others made unreasonable requirements including expensive equipment, or expensive and delaying project studies. Significant progress has been made on the issue of standardized technical specifications. DOE has supported the fast-track development of a distributed power interconnect standard by the Institute of Electrical and Electronic Engineers (IEEE). This standard should become final in the spring of 2001. Creating the standards is only the first step, and adoption by state regulators must follow.

The non-technical issues are more varied and less amenable to straightforward solutions. One problem is with "exit fees." These charges are intended to recover a utility's stranded assets that result from the customer's installation of on-site generation that reduces electricity purchases. Many of these fees presume that customer should bear the full cost of any investment in generation, transmission and distribution that the utility has made, even if the load reduction addresses resource constraints that would otherwise result in additional expenditures.

Terms and conditions of service is the other non-technical issue. This area includes rates charged for supplemental power, standby power and capacity, and rate at which the utility will buy back excess on-site generation. For example, some utilities have priced supplemental and standby power at costs that approach that which they were receiving for supplying all the facilities power. While PURPA qualifying facilities have recourse through FERC, other onsite generators have only the state regulators to turn to.

Proposal

Federal legislation is needed to address these issues in a consistent manner across states. The legislation should require that a local distribution utility interconnect a CHP facility with the local distribution facilities if the owner complies with the IEEE standard and pays the directly

related costs. The costs for such interconnection must be just and reasonable, and not unduly discriminatory, as determined by the appropriate State regulatory authority, and shall be comparable to the costs charged by such local distribution utility for interconnection by any other similarly situated generating facility to the distribution facilities.

In addition, the CHP facility has a right to back-up power. If the local distribution utility is not subject to an order of a State regulatory authority to provide open access to its distribution facilities or has not offered to provide open access to its distribution facilities or does not allow a generating facility to purchase back-up power from another entity using the local distribution utility's distribution facilities, the local distribution utility must offer to sell back-up power to the CHP facility which has interconnected with the utility and to do so at rates, terms, and conditions that are just and reasonable and not unduly discriminatory or preferential, as determined by the appropriate State regulatory authority, provided that a local distribution utility is not required to offer back-up power for resale to anyone other than the entity for which the backup power is being purchased.

State's should also be mandated to exempt CHP facilities from exit fees that are not directly related to service of the customer (e.g., service lines and transformers).

Precedents

The mandate adoption of national voluntary consensus standards related to interstate commerce is well accepted precedent. In addition, PURPA mandated that qualifying facilities must be granted non-discriminatory access to the local distribution utility for purchase of standby and supplemental power, and for the purchase of excess power by the utility at reasonable rates. Eleven states have exempted CHP facilities from all or most of these exit fees based on the greater public benefit that would result from the encouragement of CHP.

Impacts

It is difficult to assess the impact of this measure in isolation. Currently, CHP systems face hurdles in both environmental permitting and utility interconnection. While the removal of one barrier is likely to allow some projects to move forward, the removal of both barriers is required to allow this efficient technology to compete fairly in the market place. With both barriers removed, it has been projected that 50 GW of additional CHP capacity could be brought to market by 2010. This CHP capacity would result in a cumulative savings of over 1.5 Quads, and emissions reduction of 42.6 MMT of carbon equivalent, 0.81 MMT of SO_2, and 0.37 MMT of NO_X. [1]

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[1] Howard Geller, et. al. 1998. *Approaching the Kyoto Targets: Five Key Strategies for the United States.* Washington, DC: American Council for an Energy-Efficient Economy.

American Gas Association

MEMORANDUM
March 22, 2001

To: Joe Kelliher

Fr: Darrell Henry

Re: AGA Energy Policy Principles.

I'm sure you may already have this information, but here again are the AGA energy policy principles and additional background for your consideration as you work on the Energy Task Force policy recommendations. We had a good meeting this morning with Joe McMonigle and offered any assistance that AGA or the new coalition, which has been formed to support the development of a comprehensive national energy policy, could provide. I will follow up with you shortly on these recommendations and your efforts for the task force.

c: Rick Shelby

400 North Capitol St., NW, Washington, DC 20001 ■ Telephone 202-824-7000, Fax 202-824-7115 ■ Web Site http://www.aga.org

American Gas Association

March 1, 2001

Natural Gas Utilities
Recommendations for National Energy Policy

Overview

It is in the nation's best interest to cultivate and develop a varied portfolio of energy resources that makes the most of each fuel's unique attributes and advantages. Natural gas is making a significant contribution to meeting Americans' energy needs for an affordable, reliable energy resource. In order to provide Americans an energy future that is free of oil embargoes and rolling power blackouts, we must now adopt a balanced national energy policy that recognizes the vital role of natural gas. Such a policy provides the energy to ensure the prosperity of American families and businesses.

Future of Natural Gas in the United States

The United States relies on natural gas for one-fourth of its energy needs. Natural gas burns cleaner than any other fossil fuel, is almost 100 percent North American and provides efficient, responsive heat and energy for consumers. Because of the many advantages that natural gas offers Americans, demand for natural gas could grow by as much as 60 percent in the first two decades of the 21st century, according to projections by the Department of Energy and the American Gas Foundation -- but only if recommended policy changes are made.

Results of Greater Use of Natural Gas

The increased use of natural gas would provide numerous benefits for all Americans:

- Lower oil imports by 4.5 million barrels per day, providing **national security.**
- Provide Americans an **extremely efficient** use of energy, especially in its "direct" applications, such as furnaces, water heaters, microturbines, desiccant dehumidifiers and combined heat and power.
- Supply needed relief to the over-burdened electric grid, along with greater **reliability** to businesses and home offices, through new technologies which generate both heat and electricity and can be sited closer to the consumer.
- **Clean** up the air by lowering carbon dioxide emissions by 930 million tons per year.

(Over for AGA's specific policy recommendations)

400 North Capitol St., NW, Washington, DC 20001 ■ Telephone 202-824-7000, Fax 202-824-7115 ■ Web Site http://www.aga.org

American Gas Association

March 1, 2001

AGA's Recommendations for a National Energy Policy

- **Protection of low-income consumers:** Expand current Low Income Home Energy Assistance Program (LIHEAP) and weatherization funding.
- **Expansion of natural gas infrastructure:** Change the current tax depreciation schedule for natural gas utility expenses to an accelerated 7-year schedule. This will free up capital for natural gas utilities to invest in new pipelines, storage facilities and upgrading the existing infrastructure; ensuring continued reliable service for all natural gas consumers. Also increase RD&D on natural gas infrastructure reliability and safety; repeal tax on new customer connections (Contributions in Aid of Construction.)
- **Development of new natural gas technologies:** Provide RD&D funding for new technologies to produce, deliver and use natural gas in a highly-efficient and safe manner; provide favorable tax treatment for highly efficient end-use technologies; reduce or eliminate barriers to market entry.
- **Increased energy efficiency:** Provide funding to improve the energy efficiency of government facilities and schools; RD&D and tax incentives for highly efficient technologies; policy recognition of total energy efficiency.
- **Adequate supplies of natural gas:** North America has abundant supplies of natural gas. More supply of natural gas means lower prices for consumers. AGA supports the recommendations by natural gas producers for expanded access to federal lands for exploration and production; tax provisions to stimulate domestic production; simplified agency review and permitting process.

- AGA -

American Gas Association (202) 824-7000
400 N. Capitol St., N.W., Suite 400, Washington, D.C. 20001

American Gas Association

FEDERAL ENERGY POLICY PRINCIPLES

Preamble

Ample, reliable energy supply at affordable prices is key to providing economic and national security for Americans. The American Gas Association (AGA) recognizes that, while the United States has tremendous energy resources, America's current energy supply and infrastructure will not sustain our growing economy and we need to act now to meet our country's energy needs for the 21st Century.

In order to continue to meet the energy needs of our unprecedented growing economy and provide affordable energy for consumers, America will need to utilize all domestic fuels and energy sources efficiently. This is also the right approach for American citizens who will benefit from more reliable and affordable energy from domestic energy sources, cleaner air, and a stronger economy.

AGA is committed to working to enact a bipartisan, consensus, market-based national energy strategy that will ensure the future security, comfort, and economic well being of our nation's citizens by meeting their energy needs, without sacrificing the quality of our environment. AGA will work with consumers, policy makers, and its partners in the energy industry to accomplish this goal.

Principles

To realize the goal of abundant energy supply for the 21st Century, America needs to enact a market-based, federal energy strategy that would accomplish the following:

1. Meet Consumer Energy Needs
   - Ensure safe, reliable and affordable energy supply for all American families and businesses today and in the future
   - Provide a balanced energy portfolio that promotes the wise use and efficient use of all fuels
   - Encourage necessary long-term energy supply and infrastructure investments
   - Meet the needs of our growing economy and create and preserve American jobs
   - Seek market-based solutions that reduce regulatory uncertainty

2. Ensure the Quality of Our Environment
   - Increase the use of new cleaner and more efficient energy technologies
   - Enhance the development of renewable and cleaner energy sources
   - Increase energy efficiency and energy conservation through sustainable development and fair and balanced incentives and standards
   - Ensure short-term energy and environmental policies support long-term goals

3. Increase our National Security
   - Increase domestic energy supply
   - Achieve greater energy independence through lower foreign oil imports

1 March, 2001
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RECOMMENDED NATURAL GAS UTILITY PROVISIONS FOR INCLUSION IN NATIONAL ENERGY POLICY LEGISLATION

Goals:

To decrease America's dependence on foreign oil to fifty percent of oil consumption by the year 2010 by conserving energy resources, improving energy efficiencies, increasing domestic energy supplies, and enhancing the use of renewable energy resources.

To accommodate and facilitate development of an expanded direct use natural gas market for residential, commercial, and industrial consumers, which would benefit the nation through increased economic and energy efficiency, enhanced energy security resulting from reduced dependence on imported oil, and improved environmental quality as a result of lower emissions of CO_2 and pollutants.

Key Legislative Components of the Bill

TITLE I—PROVISIONS TO ENHANCE THE USE OF DOMESTIC ENERGY RESOURCES.

Section 101. National Academy of Sciences Study of Exploration and Production.

Direct the National Academy of Sciences to perform a cost-benefit analysis with respect to utilizing the domestic natural gas resource base to reduce oil-import dependence and to assess the role of new technological developments in the exploration and production process. In making its cost-benefit analysis, NAS must include new exploration and production technologies as a part of the algorithm tested to determine the net benefits of providing access to additional domestic gas resources.

TITLE II—PROVISIONS TO FACILITATE RENEWAL AND EXPANSION OF DOMESTIC ENERGY INFRASTRUCTURE.

Section 201. Office of National Energy Policy.

(a) Create, within the Executive Office of the President, an Office of National Energy Policy, which will be directed to coordinate and expedite actions of executive-branch agencies and independent agencies to implement national energy policy as expeditiously as possible. The Office shall be directed to coordinate and expedite the actions of these agencies to reduce dependence on foreign oil to fifty percent of consumption, to conserve energy resources, to improve energy efficiencies, to increase domestic energy supplies, to increase energy infrastructure to meet America's energy needs, and to enhance the use of renewable resources. The Office will be empowered to work with relevant state agencies to achieve these goals and shall specifically address state concerns with respect to federal impediments to achieving these goals as well as encouraging solutions to state impediments to achieving these goals.

(b) The Office will be empowered to coordinate and expedite decision-making on permitting processes for development of the pipeline and gas distribution infrastructure necessary to sustain projected natural gas demand in the year 2010. The Office shall be empowered to issue, by rule or order, binding deadlines for completion of required agency actions and to provide that failure to act within the deadlines specified shall be deemed to be approval of the pending application.

(c) The Office will be empowered to enter into consultations with officials of Canada and Mexico with regard to energy issues of mutual concern.

Section 202. Report by Office of National Energy Policy.

Direct the Office of National Energy Policy, within 6 months, to prepare and deliver to the President and Congress a report assessing existing impediments to development of the domestic energy infrastructure necessary to sustain projected energy demand in the year 2010. The report shall include, among other things, an identification of those impediments that may be overcome by federal administrative action and those impediments that require legislative action.

Section 203. Interagency Working Group on Natural Gas.

Establish, within the Office of National Energy Policy, an Interagency Working Group on Natural Gas to produce a biannual report setting forth a policy and strategy relating to expanding natural gas usage. The Working Group will consult with cognizant state agencies to receive their views with respect to such a strategy.

Section 204. Interagency Task Force on Exploration and Production on Federal Lands.

Establish, within the Office of National Energy Policy, an Interagency and Intergovernmental Task Force on Energy and Federal Lands to streamline regulation of exploration and production on federal lands (including federal waters and the Outer Continental Shelf), while protecting the environment.

The task force shall, within 6 months, prepare and deliver a report to the President and Congress assessing existing impediments to development of the domestic natural gas resource base on federal lands. The report shall include, among other things, an identification of those impediments that may be overcome by federal administrative action and those impediments that require legislative action.

Section 205. Interagency Agreement on Energy Infrastructure.

Direct the Federal Energy Regulatory Commission and all other federal agencies involved in the environmental review of interstate pipeline applications to enter into an interagency agreement to expedite processing of applications, including deadlines for each agency to complete its required actions. Failure of an agency to complete its review by the deadline shall be deemed to be assent to the project.

Section 206. Reduction of Infrastructure Lead Times.

Reduce infrastructure lead-times and federal impediments of state siting through regulatory reform of federal agencies.

Section 207. Increased Funding for Infrastructure Safety and Reliability.

Increase funding on RD&D to enhance pipeline and distribution infrastructure safety and reliability to optimize utilization of pipeline and distribution infrastructure, and to increase the operational efficiency of pipeline and distribution infrastructure.[S. 3002.]

TITLE III—PROVISIONS TO ESTABLISH COMPREHENSIVE, BALANCED AND EQUITABLE EFFICIENCY AND ENVIRONMENTAL REGULATIONS.

Section 301. Congressional Findings.

Congress finds that it is the policy of the United States to reduce the reliance upon foreign-source energy (i.e., energy produced outside North America), to encourage reliance upon energy produced in North America, and to improve the energy efficiency of the United States as a whole. Furthermore, Congress finds that it is the policy of the United States, in implementing energy efficiency measures, to consider principally, but not exclusively, the total energy consumed in an application.

Section 302. Energy Efficiency Programs.

Direct DOE and other agencies to reexamine current efficiency and environmental regulations in light of the stated national energy policy. Charge DOE with placing priority in energy efficiency rulemaking, analysis of energy efficiency policies, and all codes and standards activities on energy efficiency as measured over the full fuel cycle (i.e., Total Energy Efficiency), including air emissions of criteria air pollutants and carbon dioxide and on cost effectiveness of alternatives for achieving efficiency targets.

Section 303. Cost Effectiveness and Economic Justification.

Direct DOE and other agencies to review current regulations and assess future regulations to ensure that the costs and benefits of each energy option are accurately assessed. Provide specific guidance for DOE's consideration of cost effectiveness and economic justification of energy efficiency regulations and standards, including cost-benefit analysis, stakeholders to be addressed, and fuel competitiveness issues. Much of this section would codify and clarify DOE procedures currently covered by regulations (e.g., the 1996 "Process Improvement Rule"), but which provide considerable ambiguity on the specifics of compliance.

Section 304. Voluntary Standards.

Revise and define the role of DOE staff, national laboratories, and contractors in regard to model codes and voluntary standards to reduce undue federal government influence. Revise the roles of voluntary standards (including ASHRAE standards) in energy policy and the role of DOE in establishing minimum efficiency standards for equipment and buildings to gain more equitable treatment of natural gas end use options.

TITLE IV—PROVISIONS TO PROTECT CONSUMERS AND LOW-INCOME FAMILIES AND ENCOURAGE ENERGY EFFICIENCY.

Section 401. Extend and Increase Funding for LIHEAP Program.

(a) Extend the LIHEAP program from 2001 to 2006, increase the base authorization from $2 billion to $3 billion annually, and increase emergency funds authorization from $600 million to $1 billion annually.

(b) For years subsequent to 2001, ensure that LIHEAP funding tracks changes in low-income consumer fuel costs by increasing the authorization specified in Section 401(a), in formulaic fashion, tracking increases in Energy Information Administration short-term forecasts of residential heating costs.

Section 402. Government Building Energy Efficiency.

Authorize $500 million per year for 5 years for capital improvements, including distributed energy resources and natural gas systems, to modernize government facilities through the installation of sustainable energy systems, especially to replace energy systems that are older, less energy efficient and less environmentally sensitive, including high efficiency and renewable energy systems. Sustainable energy systems funded with this authorization must be cost effective as well as environmentally beneficial.

Section 403. Energy Efficiency of School Buildings.

Reauthorize DOE program to increase energy efficiency in school buildings and provide funds to switch buildings to the most economical and efficient energy source.

Section 404. Conversion of Federal Facilities from Oil-Fueled to Gas-Fired.

Authorize federal funds to convert federal buildings and other facilities from fuel oil to natural gas.

TITLE V—TAX PROVISIONS TO ENHANCE THE USE OF CLEAN AND DOMESTIC ENERGY RESOURCES AND TO IMPROVE ENERGY EFFICIENCY.

Section 501. Tax Incentives For Environmental Preservation And Other Costs Associated With Siting and Construction of Energy Infrastructure.

(a) Allow current-year deduction of costs for environmental scoping and preparation of environmental impact statements and studies for new gas distribution, storage, and transmission infrastructure.

(b) Allow three-year accelerated depreciation for environmental mitigation and related actions for new gas distribution, storage, and transmission infrastructure.

(c) Allow seven-year accelerated depreciation for other costs of new gas distribution, storage, and transmission infrastructure.

Section 502. Tax Incentives For Clean, High-Efficiency, Distributed Energy Resources.

(a) Provide tax credits for distributed energy resources, including but not limited to natural gas fuel cells, microturbines, turbines, reciprocating engines, and natural gas cooling and dessicant systems. For natural gas fuel cells, microturbines, turbines, and reciprocating engines, tax credits would be available only for units that are highly efficient and comparatively environmentally beneficial.

(b) Revise depreciation schedules for distributed energy resources and combined heat and power to provide for seven-year depreciation. "Distributed energy resources" for purposes of this section is not limited to particular technologies; instead, electric generation of any type shall qualify so long as approximately fifty percent of the power generated is consumed at the site of the generation, or within reasonable proximity of the site of generation, and the facility has a capacity of 5Mw or less.

Section 503. CIAC Repeal.

Remove tax associated with homes and businesses connecting to a utility to receive natural gas.

Section 504. Deduction For Costs of Storing Natural Gas.

Allow deduction of certain expenses associated with the storage of natural gas, including liquefaction facilities and propane-air injection facilities.

Section 505. Tax Incentives for Natural Gas Transportation.

Provide tax credits for NGVs and alternative transportation fuels, including infrastructure required to serve these alternatives.

Section 506. Tax Normalization.

Normalize the treatment of the revised tax provisions in the bill.

TITLE VI—PROVISIONS TO EXPAND THE USE OF NEW NATURAL GAS TECHNOLOGIES.

Section 601. Energy Research, Development, and Demonstration Funding.

(a) Increase federal funding for research, development, and demonstration for sustained and improved natural gas system reliability and integrity, infrastructure expansion, and reasonable natural gas prices and rapid commercialization of new on-site natural-gas equipment advances that would provide lower emissions, greater North American energy reliability, and sustain America's leadership in energy technologies.

(b) Utilize ten percent of the federal share of royalties received for production from new federal lands opened to exploration and production to support research, development, and demonstration. This funding will, in aggregate, be subject to a stated dollar cap. Approximately half of these royalties will be designated to support exploration and production RD&D, and half of these royalties shall be designated to support distribution and transmission RD&D.

(c) Authorize for each of the fiscal years 2001-2006 federal funding for natural gas research, development, and demonstration of $600 million annually.

Section 602. Periodic Review of Energy Regulations to Accommodate New Technologies.

Direct federal government agencies to review existing rules and standards periodically to ensure that promising technologies, such as distributed energy resources that offer diversity of supply and other benefits are not discourage from market entry.

TITLE VII—PROVISIONS TO SUPPORT AND ENCOURAGE ENHANCED DOMESTIC NATURAL GAS EXPLORATION AND PRODUCTION

AGA supports legislative initiatives to increase the production of natural gas from current sources and to bring forth enhanced production from new and potential sources of domestic natural gas supply.

American Gas Association

MEMORANDUM
March 22, 2001

To: Joe McMonigle

Fr: Darrell Henry

Re: AGA Legislative Policy Principles.

Thanks for meeting with Charlie Fritts and me this morning. As promised, here are the AGA Legislative Policy Principles your work on the Energy Task Force policy recommendations. I also sent a copy to Joe Kelliher. Please call me, 202-824-7219, if you have any questions or if we can provide any assistance for the Secretary's efforts.

c: Charlie Fritts

400 North Capitol St., NW, Washington, DC 20001 ■ Telephone 202-824-7000, Fax 202-824-7115 ■ Web Site http://www.aga.org

American Gas Association

March 1, 2001

Natural Gas Utilities
Recommendations for National Energy Policy

Overview

It is in the nation's best interest to cultivate and develop a varied portfolio of energy resources that makes the most of each fuel's unique attributes and advantages. Natural gas is making a significant contribution to meeting Americans' energy needs for an affordable, reliable energy resource. In order to provide Americans an energy future that is free of oil embargoes and rolling power blackouts, we must now adopt a balanced national energy policy that recognizes the vital role of natural gas. Such a policy provides the energy to ensure the prosperity of American families and businesses.

Future of Natural Gas in the United States

The United States relies on natural gas for one-fourth of its energy needs. Natural gas burns cleaner than any other fossil fuel, is almost 100 percent North American and provides efficient, responsive heat and energy for consumers. Because of the many advantages that natural gas offers Americans, demand for natural gas could grow by as much as 60 percent in the first two decades of the 21st century, according to projections by the Department of Energy and the American Gas Foundation – but only if recommended policy changes are made.

Results of Greater Use of Natural Gas

The increased use of natural gas would provide numerous benefits for all Americans:

- Lower oil imports by 4.5 million barrels per day, providing **national security.**
- Provide Americans an extremely **efficient** use of energy, especially in its "direct" applications, such as furnaces, water heaters, microturbines, desiccant dehumidifiers and combined heat and power.
- Supply needed relief to the over-burdened electric grid, along with greater **reliability** to businesses and home offices, through new technologies which generate both heat and electricity and can be sited closer to the consumer.
- **Clean** up the air by lowering carbon dioxide emissions by 930 million tons per year.

(Over for AGA's specific policy recommendations)

400 North Capitol St., NW, Washington, DC 20001 ■ Telephone 202-824-7000, Fax 202-824-7115 ■ Web Site http://www.aga.org

American Gas Association

March 1, 2001

AGA's Recommendations for a National Energy Policy

- **Protection of low-income consumers:** Expand current Low Income Home Energy Assistance Program (LIHEAP) and weatherization funding.
- **Expansion of natural gas infrastructure:** Change the current tax depreciation schedule for natural gas utility expenses to an accelerated 7-year schedule. This will free up capital for natural gas utilities to invest in new pipelines, storage facilities and upgrading the existing infrastructure; ensuring continued reliable service for all natural gas consumers. Also increase RD&D on natural gas infrastructure reliability and safety; repeal tax on new customer connections (Contributions in Aid of Construction.)
- **Development of new natural gas technologies:** Provide RD&D funding for new technologies to produce, deliver and use natural gas in a highly-efficient and safe manner; provide favorable tax treatment for highly efficient end-use technologies; reduce or eliminate barriers to market entry.
- **Increased energy efficiency:** Provide funding to improve the energy efficiency of government facilities and schools; RD&D and tax incentives for highly efficient technologies; policy recognition of total energy efficiency.
- **Adequate supplies of natural gas:** North America has abundant supplies of natural gas. More supply of natural gas means lower prices for consumers. AGA supports the recommendations by natural gas producers for expanded access to federal lands for exploration and production; tax provisions to stimulate domestic production; simplified agency review and permitting process.

- AGA -

American Gas Association (202) 824-7000
400 N. Capitol St., N.W., Suite 400, Washington, D.C. 20001

American Gas Association

FEDERAL ENERGY POLICY PRINCIPLES

Preamble

Ample, reliable energy supply at affordable prices is key to providing economic and national security for Americans. The American Gas Association (AGA) recognizes that, while the United States has tremendous energy resources, America's current energy supply and infrastructure will not sustain our growing economy and we need to act now to meet our country's energy needs for the 21st Century.

In order to continue to meet the energy needs of our unprecedented growing economy and provide affordable energy for consumers, America will need to utilize all domestic fuels and energy sources efficiently. This is also the right approach for American citizens who will benefit from more reliable and affordable energy from domestic energy sources, cleaner air, and a stronger economy.

AGA is committed to working to enact a bipartisan, consensus, market-based national energy strategy that will ensure the future security, comfort, and economic well being of our nation's citizens by meeting their energy needs, without sacrificing the quality of our environment. AGA will work with consumers, policy makers, and its partners in the energy industry to accomplish this goal.

Principles

To realize the goal of abundant energy supply for the 21st Century, America needs to enact a market-based, federal energy strategy that would accomplish the following:

1. Meet Consumer Energy Needs
   - Ensure safe, reliable and affordable energy supply for all American families and businesses today and in the future
   - Provide a balanced energy portfolio that promotes the wise use and efficient use of all fuels
   - Encourage necessary long-term energy supply and infrastructure investments
   - Meet the needs of our growing economy and create and preserve American jobs
   - Seek market-based solutions that reduce regulatory uncertainty

2. Ensure the Quality of Our Environment
   - Increase the use of new cleaner and more efficient energy technologies
   - Enhance the development of renewable and cleaner energy sources
   - Increase energy efficiency and energy conservation through sustainable development and fair and balanced incentives and standards
   - Ensure short-term energy and environmental policies support long-term goals

3. Increase our National Security
   - Increase domestic energy supply
   - Achieve greater energy independence through lower foreign oil imports

1 March, 2001
09:29

RECOMMENDED NATURAL GAS UTILITY PROVISIONS FOR INCLUSION IN NATIONAL ENERGY POLICY LEGISLATION

Goals:

To decrease America's dependence on foreign oil to fifty percent of oil consumption by the year 2010 by conserving energy resources, improving energy efficiencies, increasing domestic energy supplies, and enhancing the use of renewable energy resources.

To accommodate and facilitate development of an expanded direct use natural gas market for residential, commercial, and industrial consumers, which would benefit the nation through increased economic and energy efficiency, enhanced energy security resulting from reduced dependence on imported oil, and improved environmental quality as a result of lower emissions of CO_2 and pollutants.

Key Legislative Components of the Bill

TITLE I—PROVISIONS TO ENHANCE THE USE OF DOMESTIC ENERGY RESOURCES.

Section 101. National Academy of Sciences Study of Exploration and Production.

Direct the National Academy of Sciences to perform a cost-benefit analysis with respect to utilizing the domestic natural gas resource base to reduce oil-import dependence and to assess the role of new technological developments in the exploration and production process. In making its cost-benefit analysis, NAS must include new exploration and production technologies as a part of the algorithm tested to determine the net benefits of providing access to additional domestic gas resources.

TITLE II—PROVISIONS TO FACILITATE RENEWAL AND EXPANSION OF DOMESTIC ENERGY INFRASTRUCTURE.

Section 201. Office of National Energy Policy.

(a) Create, within the Executive Office of the President, an Office of National Energy Policy, which will be directed to coordinate and expedite actions of executive-branch agencies and independent agencies to implement national energy policy as expeditiously as possible. The Office shall be directed to coordinate and expedite the actions of these agencies to reduce dependence on foreign oil to fifty percent of consumption, to conserve energy resources, to improve energy efficiencies, to increase domestic energy supplies, to increase energy infrastructure to meet America's energy needs, and to enhance the use of renewable resources. The Office will be empowered to work with relevant state agencies to achieve these goals and shall specifically address state concerns with respect to federal impediments to achieving these goals as well as encouraging solutions to state impediments to achieving these goals.

(b) The Office will be empowered to coordinate and expedite decision-making on permitting processes for development of the pipeline and gas distribution infrastructure necessary to sustain projected natural gas demand in the year 2010. The Office shall be empowered to issue, by rule or order, binding deadlines for completion of required agency actions and to provide that failure to act within the deadlines specified shall be deemed to be approval of the pending application.

(c) The Office will be empowered to enter into consultations with officials of Canada and Mexico with regard to energy issues of mutual concern.

Section 202. Report by Office of National Energy Policy.

Direct the Office of National Energy Policy, within 6 months, to prepare and deliver to the President and Congress a report assessing existing impediments to development of the domestic energy infrastructure necessary to sustain projected energy demand in the year 2010. The report shall include, among other things, an identification of those impediments that may be overcome by federal administrative action and those impediments that require legislative action.

Section 203. Interagency Working Group on Natural Gas.

Establish, within the Office of National Energy Policy, an Interagency Working Group on Natural Gas to produce a biannual report setting forth a policy and strategy relating to expanding natural gas usage. The Working Group will consult with cognizant state agencies to receive their views with respect to such a strategy.

Section 204. Interagency Task Force on Exploration and Production on Federal Lands.

Establish, within the Office of National Energy Policy, an Interagency and Intergovernmental Task Force on Energy and Federal Lands to streamline regulation of exploration and production on federal lands (including federal waters and the Outer Continental Shelf), while protecting the environment.

The task force shall, within 6 months, prepare and deliver a report to the President and Congress assessing existing impediments to development of the domestic natural gas resource base on federal lands. The report shall include, among other things, an identification of those impediments that may be overcome by federal administrative action and those impediments that require legislative action.

Section 205. Interagency Agreement on Energy Infrastructure.

Direct the Federal Energy Regulatory Commission and all other federal agencies involved in the environmental review of interstate pipeline applications to enter into an interagency agreement to expedite processing of applications, including deadlines for each agency to complete its required actions. Failure of an agency to complete its review by the deadline shall be deemed to be assent to the project.

Section 206. Reduction of Infrastructure Lead Times.

Reduce infrastructure lead-times and federal impediments of state siting through regulatory reform of federal agencies.

Section 207. Increased Funding for Infrastructure Safety and Reliability.

Increase funding on RD&D to enhance pipeline and distribution infrastructure safety and reliability to optimize utilization of pipeline and distribution infrastructure, and to increase the operational efficiency of pipeline and distribution infrastructure.[S. 3002.]

TITLE III—PROVISIONS TO ESTABLISH COMPREHENSIVE, BALANCED AND EQUITABLE EFFICIENCY AND ENVIRONMENTAL REGULATIONS.

Section 301. Congressional Findings.

Congress finds that it is the policy of the United States to reduce the reliance upon foreign-source energy (i.e., energy produced outside North America), to encourage reliance upon energy produced in North America, and to improve the energy efficiency of the United States as a whole. Furthermore, Congress finds that it is the policy of the United States, in implementing energy efficiency measures, to consider principally, but not exclusively, the total energy consumed in an application.

Section 302. Energy Efficiency Programs.

Direct DOE and other agencies to reexamine current efficiency and environmental regulations in light of the stated national energy policy. Charge DOE with placing priority in energy efficiency rulemaking, analysis of energy efficiency policies, and all codes and standards activities on energy efficiency as measured over the full fuel cycle (i.e., Total Energy Efficiency), including air emissions of criteria air pollutants and carbon dioxide and on cost effectiveness of alternatives for achieving efficiency targets.

Section 303. Cost Effectiveness and Economic Justification.

Direct DOE and other agencies to review current regulations and assess future regulations to ensure that the costs and benefits of each energy option are accurately assessed. Provide specific guidance for DOE's consideration of cost effectiveness and economic justification of energy efficiency regulations and standards, including cost-benefit analysis, stakeholders to be addressed, and fuel competitiveness issues. Much of this section would codify and clarify DOE procedures currently covered by regulations (e.g., the 1996 "Process Improvement Rule"), but which provide considerable ambiguity on the specifics of compliance.

Section 304. Voluntary Standards.

Revise and define the role of DOE staff, national laboratories, and contractors in regard to model codes and voluntary standards to reduce undue federal government influence. Revise the roles of voluntary standards (including ASHRAE standards) in energy policy and the role of DOE in establishing minimum efficiency standards for equipment and buildings to gain more equitable treatment of natural gas end use options.

TITLE IV—PROVISIONS TO PROTECT CONSUMERS AND LOW-INCOME FAMILIES AND ENCOURAGE ENERGY EFFICIENCY.

Section 401. Extend and Increase Funding for LIHEAP Program.

(a) Extend the LIHEAP program from 2001 to 2006, increase the base authorization from $2 billion to $3 billion annually, and increase emergency funds authorization from $600 million to $1 billion annually.

(b) For years subsequent to 2001, ensure that LIHEAP funding tracks changes in low-income consumer fuel costs by increasing the authorization specified in Section 401(a), in formulaic fashion, tracking increases in Energy Information Administration short-term forecasts of residential heating costs.

Section 402. Government Building Energy Efficiency.

Authorize $500 million per year for 5 years for capital improvements, including distributed energy resources and natural gas systems, to modernize government facilities through the installation of sustainable energy systems, especially to replace energy systems that are older, less energy efficient and less environmentally sensitive, including high efficiency and renewable energy systems. Sustainable energy systems funded with this authorization must be cost effective as well as environmentally beneficial.

Section 403. Energy Efficiency of School Buildings.

Reauthorize DOE program to increase energy efficiency in school buildings and provide funds to switch buildings to the most economical and efficient energy source.

Section 404. Conversion of Federal Facilities from Oil-Fueled to Gas-Fired.

Authorize federal funds to convert federal buildings and other facilities from fuel oil to natural gas.

TITLE V—TAX PROVISIONS TO ENHANCE THE USE OF CLEAN AND DOMESTIC ENERGY RESOURCES AND TO IMPROVE ENERGY EFFICIENCY.

Section 501. Tax Incentives For Environmental Preservation And Other Costs Associated With Siting and Construction of Energy Infrastructure.

(a) Allow current-year deduction of costs for environmental scoping and preparation of environmental impact statements and studies for new gas distribution, storage, and transmission infrastructure.

(b) Allow three-year accelerated depreciation for environmental mitigation and related actions for new gas distribution, storage, and transmission infrastructure.

(c) Allow seven-year accelerated depreciation for other costs of new gas distribution, storage, and transmission infrastructure.

Section 502. Tax Incentives For Clean, High-Efficiency, Distributed Energy Resources.

(a) Provide tax credits for distributed energy resources, including but not limited to natural gas fuel cells, microturbines, turbines, reciprocating engines, and natural gas cooling and dessicant systems. For natural gas fuel cells, microturbines, turbines, and reciprocating engines, tax credits would be available only for units that are highly efficient and comparatively environmentally beneficial.

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(b) Utilize ten percent of the federal share of royalties received for production from new federal lands opened to exploration and production to support research, development, and demonstration. This funding will, in aggregate, be subject to a stated dollar cap. Approximately half of these royalties will be designated to support exploration and production RD&D, and half of these royalties shall be designated to support distribution and transmission RD&D.

(c) Authorize for each of the fiscal years 2001-2006 federal funding for natural gas research, development, and demonstration of $600 million annually.

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Direct federal government agencies to review existing rules and standards periodically to ensure that promising technologies, such as distributed energy resources that offer diversity of supply and other benefits are not discourage from market entry.

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AGA supports legislative initiatives to increase the production of natural gas from current sources and to bring forth enhanced production from new and potential sources of domestic natural gas supply.

Green Mountain Energy™

Choose wisely. It's a small planet.™

April 12, 2001

Mr. Joseph T. Kelliher
Senior Policy Advisor
Office of the Secretary
U.S. Department of Energy
Room 7B-252
1000 Independence Ave., SW
Washington, D.C. 20585

Dear Mr. Kelliher:

Green Mountain Energy Company greatly appreciated the opportunity to meet with you last week to discuss the development of national energy policy. As a follow-up to that meeting, we would like to provide in writing some information about Green Mountain Energy and a few thoughts regarding competition in the electric industry as a key component of our national energy strategy.

Since its inception in 1997, Green Mountain Energy Company has been committed to using the power of customer demand to help change the way power is made. As a result of its activities in competitive markets to date, the company has spurred the development of several new renewable energy projects, including one of the largest wind farms on the East coast, the first new wind turbines to be built as a result of customer demand in California, and the largest solar array in the San Francisco Bay area.

Green Mountain Energy currently supplies cleaner and renewable electricity to residential, business and government consumers in California, Pennsylvania, New Jersey and Connecticut, and we plan to expand nationwide as more states open their energy markets to competition. Near-term plans include entering the Texas market when the state begins its pilot program in June, 2001, and starting service in September, 2001, to over 400,000 residential customers in Ohio pursuant to a six-year agreement with the Northeast Ohio Public Energy Council ("NOPEC"), a public electricity buying group which represents households across eight Ohio counties.

Green Mountain Energy firmly believes that effective competition in the electric industry can produce benefits for even the smallest customers and is part of the solution to, rather than the cause of, current problems in the western wholesale power markets. We also believe that

Green Mountain Energy Company • 75 Green Mountain Drive • South Burlington, Vermont 05403 • Phone (802) 846-2560 • Fax (802) 846-2564

competition can be an important complement to responsible policy initiatives in support of the environment. Competition presents the opportunity for choice, and choices available in competitive energy markets today include products that are significantly cleaner and higher in renewable content than traditional system power. Moreover, experience in markets to date clearly demonstrates that a significant percentage of switching customers will choose energy products based on their environmental characteristics as well as price. In addition, in several situations where significant blocks of customers were up for bid, Green Mountain Energy, at least, has been able to bid successfully with energy products that are significantly cleaner than system average power. In short, the potential for the market to impact how power is made in the future is significant, and grows as consumers become more educated about the environmental consequences of alternative power generation sources.

The potential economic and environmental benefits of competition, however, will not be realized without support and leadership from policymakers. This is a critical time for the competitive energy industry. Recent events in California, high prices in wholesale markets across the country, less-than-effective federal regulation of the interstate transmission grid, and a variety of flawed state restructuring programs are making it increasingly difficult for competitive suppliers to deliver to customers the benefits that would flow from free and fair competition. A number of states are delaying their restructuring programs or considering price control measures that are likely to kill off the competition that would provide the best long-term protection for customers. Leadership is needed now on the federal level to address directly the obstacles to competition that are within the federal government's control, and to provide guidance and encouragement to the states to address effectively those issues within their jurisdiction. We urge the Administration to provide that leadership as part of its national energy policy.

Specifically, we urge that the national energy policy, at a minimum, incorporate the following two elements with respect to electric industry restructuring:

- **Support for federal legislation that 1) assures a robust interstate transmission grid, 2) clarifies federal/state authority over the interstate grid, and 3) mandates efficient interconnection with the transmission grid.** These issues are addressed in a recent letter to you from the Electric Power Supply Association, of which Green Mountain Energy is a member. We will not repeat its discussion of the issues here, but commend EPSA's letter for your consideration.

- **Encouragement of, and support for, retail electric competition.** As described above, it is important that the states and the public hear that effective competition in the energy industry, at both the wholesale and retail levels, will benefit customers and is part of this nation's energy policy. There is much that the federal government could do now to promote competition by, for instance, rationalizing a hodgepodge of state rules and procedures, limiting monopoly functions, and providing tax incentives for restructuring

investments. But even if, as many have suggested, the time is not right politically for federal action effecting retail electric restructuring, it is still possible to set a broad direction and begin plotting a course toward full competition. Currently, the Federal Trade Commission, at the request of Congress, is considering comments and developing a report on what is working and what is not in retail electric competition programs, and on what additional federal legislation or regulation might be desirable. Green Mountain Energy urges the Administration to ensure that this is a serious effort, and to utilize the resulting FTC report to inform further direct federal action and/or to press states to reform existing programs and implement new programs that will bring the benefits of competition to customers. The FTC has played the role of advocate and expert advisor to states before, and might productively play such a role with respect to retail electric competition.

Of course, as a marketer of and advocate for renewable energy, Green Mountain Energy also urges the Administration's aggressive support for renewable energy as part of our national energy strategy.

Thank you again for the opportunity to meet and to provide you with our views on electric restructuring and national energy strategy. We are, of course, available to discuss these issues in greater detail at any time.

Sincerely,

Karen O'Neill
Vice President, New Markets
Green Mountain Energy Company

CSX CORPORATION

Suite 560, National Place
1331 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Arnold I. Havens
Vice President - Federal Affairs

March 5, 2001

Mr. Joe Kelliher
Senior Policy Analyst
U.S. Department of Energy
Room 7B-252
1000 Independence Avenue, SW
Washington, DC 20585

Dear Joe,

John Snow and I very much appreciated the opportunity to visit with Secretary Abraham and you to share our thoughts on the importance of developing and implementing a broad-based energy policy that maximizes the use of abundant domestic fuel sources including coal.

We also appreciated the chance to discuss the need to eliminate the unjustified 4.3 cents-per-gallon deficit reduction fuel tax that the rail and barge industries continue to pay into the general funds of the Treasury.

Given how fuel efficient railroads are, the elimination of the tax would have both fuel savings and environmental benefits (see attachment).

Once you have had the chance to review the attachment I would be happy to respond to any questions you may have.

Again, many thanks for your time and consideration.

Sincerely,

attachment

Telephone: (202) 783-8124 · Facsimile: (202) 783-5929

Energy-Related Benefits of Eliminating the 4.3 Cents Per Gallon Deficit Reduction Tax on Railroad Fuel

1. Coal is an abundant energy source which plays a vital role in the U.S. economy. In addition to its use for industrial purposes, including the production of iron and steel, coal is the source of more than half of our nation's electricity. And coal will be increasingly important in meeting America's future energy demands and energy independence – the U.S. Department of Energy projects demand for U.S. coal to grow from 20 percent to 38 percent over the next 15 years. Because freight railroads handle 65 percent of all coal transported in the United States, their ability to offer efficient, economical, and safe transportation is critical to America's energy outlook.

   The annual $174 million cost reduction produced by the elimination of the 4.3 cents per gallon deficit reduction fuel tax would greatly assist freight railroads in responding to our nation's energy transportation needs. Over the next 10 years, these savings would enable railroads to make needed investments such as the following:

   - Augment their locomotive and freight car fleets used in the transportation of coal. By adding one new locomotive for every eight currently in coal service or one additional coal freight car for every five currently hauling coal.

   - More readily fund the heavy costs of track and signaling expansion – which can amount to millions of dollars per mile – needed to create the increased rail capacity required to accommodate the higher volumes of rail-transported coal.

2. The deficit reduction fuel tax on railroads and barges artificially increases their operating costs. Elimination of the tax would allow these modes to compete more effectively with motor carriers based upon actual price, service, and other competitive factors. Because freight railroads are, on average, three times more fuel efficient than trucks, according to the Environmental Protection Agency, the elimination of the tax would allow more traffic to move by rail as competitive forces dictated, thereby producing both fuel savings and environmental benefits that would result from rail's greater fuel efficiency.

3. Elimination of the deficit reduction fuel tax would allow railroads to continue investment in research which has the goal of reducing locomotive emissions and increasing locomotive fuel efficiency.

AARP

February 12, 2001

Mr. Joseph Kelliher
Department of Energy
Forrestal Building
1000 Independence Avenue, S.W.
Washington, DC 20515

Dear Joe:

It was great speaking with you again on Friday and thank you for contacting AARP regarding the President's formulation of a National Energy Plan. Based on our discussion I have assembled a number of different items related to the Protection of Consumers and Low Income Families. I will also provide you with the names of other organizations that may prove helpful.

While the majority of the information deals specifically with electric utility restructuring, I believe that many of the basic principles apply to natural gas, home heating oil, gasoline, water and other fuel sources. Before itemizing the enclosures let me outline what our overriding interests are. AARP, and consumer groups in general, want to ensure that energy sources are available, at affordable prices and that the competitive marketplace that provides these necessary items abides by basic consumer protection principles. From this flows, universal service, consumer protections, conservation, weatherization, LIHEAP and the like.

Enclosures

1) AARP Energy Policy
2) AARP Congressional Testimony on Consumer Protections
3) Stakeholder Principles
4) Universal Service Principles
5) The Winter Outlook for the Poor
6) A Study on Utility Consumer Advocates which offers strategies to help consumers
7) AARP's Model State Restructuring Bill – Includes some creative ways to aid consumers

601 E Street, NW Washington, DC 20049 (202) 434-2277 www.aarp.org
Esther "Tess" Canja, President Horace B. Deets, Executive Director

I realize that this is a lot of information, not all of it on the mark, but each piece has some important points from our perspective. Let me also add that we are pleased with the LIHEAP section of the Murkowski and have always supported the consumer protection provisions of last years Barton bill. Additionally, we are in to beginning stages of developing a plan to promote weatherization among our members. I am having trouble grasping exactly what will be included in this section of the Plan, but I would very much like to participate in drafting once you have an outline. Energy and utilities has risen to become a priority issue at AARP, so we are more than willing to do our part to aid the Administration.

Finally, I would suggest talking to Meg Powers, the author of the Winter Energy Outlook piece. I think that the National Consumer Law Center and NASUCA are other logical choices. Would you like me to get in touch with them and coordinate the effort, or would you prefer to deal with them individually? Either way is fine with me.

Joe, thanks again for including AARP in this enormous yet critically important effort. Please get back to me when you have a chance to let me know what I can do.

Take care.

Gratefully,

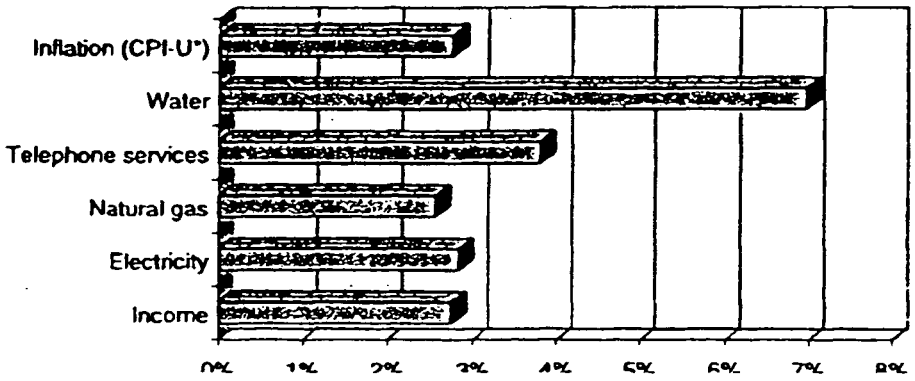
Jeff Kramer
Legislative Representative

UTILITIES AND ADVANCED COMMUNICATIONS

INTRODUCTION

Utility services are essential to modern life. Telecommunications, electricity, natural gas, water and sewer services are all crucial to health and personal welfare. For older Americans in particular, the ability to contact police, fire, medical and other services in times of emergency; to readily access affordable, safe water; and to have air conditioning during the summer and heat during the winter are absolutely necessary. The loss of any of these utility services could have devastating consequences.

Figure 10-1
Annual Percent Change in Income and Utility Costs 1990-1998
Households Age 65 and over



*CPI-U = Consumer Price Index for all Urban Consumers
Source: Bureau of Labor Statistics, *Consumer Expenditure Survey, 1998; Consumer Price Index, Historical Table, 1913-2000*
Prepared by AARP Public Policy Institute

The cost of utilities makes up a significant portion of an average consumer's personal expenditures. Energy alone can account for as much as ~~5~~ 6 percent of a median-income household's monthly budget and telephone and other services add substantially to that burden. For some older Americans, this share can be much higher, with energy, water and sewer services consuming as much as ~~30~~ 18 percent of income. Some low-income households often spend a greater share of their income on utilities than on certain other necessities such as health care or property taxes. This is the case for an increasing number of older persons as the average expenditures for telephone, electricity, water and sewer services for households headed

by persons age 65 and older increase at a faster rate than both the level of income in these households and inflation (see Figure 10-1).

Because of the large amounts of capital required to build utility systems, these crucial services traditionally have been provided under conditions of near or complete monopoly. Governments have granted exclusive-service territories to single, large companies in exchange for universal, high-quality service. To ensure that such service is provided, federal, state and local authorities have regulated utility companies closely. These firms have been guaranteed the opportunity to earn a set rate of return on their capital. Their rates and investment plans have been subject to close public scrutiny and government approval. The goal of this system is to provide adequate levels of service and just and reasonable rates across the country.

In recent years, however, new pressures have begun reshaping the nation's utility industries. Alternative providers of electricity, natural gas and telecommunications services, in particular, are promising expanded and better service at lower prices. Some utility regulators are responding by opening utility markets to competition for the first time.

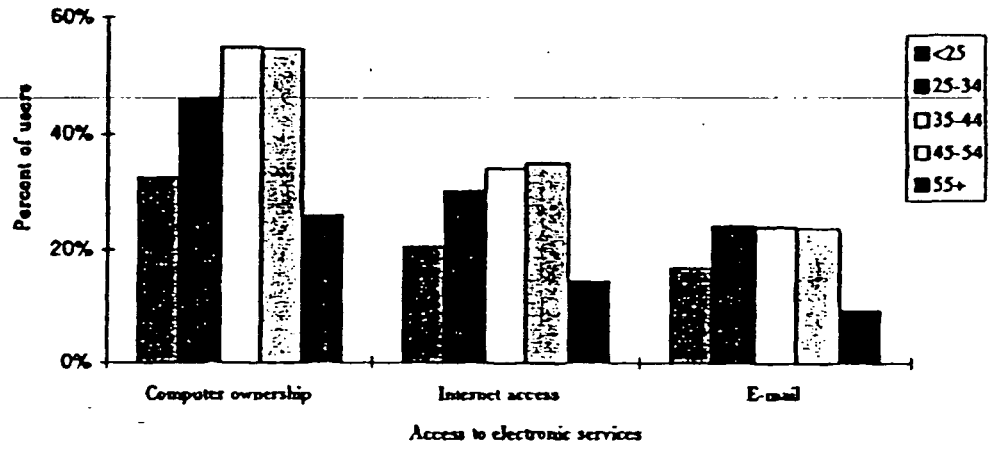
While competition will benefit large consumers and some small customers, many of the proposed plans for regulatory and structural change contain a number of potential pitfalls. For example, most plans call for relinquishing at least some public oversight of utilities and the benefits of competition may not reach individual households in rural and other areas where new competitive markets do not develop. Any proposed plans for regulatory change must maintain a provision for universal service and assistance to low-income households and ensure that services are always available in emergencies. Such proposals should also address utility companies' increasing international investments, which move resources away from domestic customers. In short, the new era dawning in utility regulation may hold much promise, but only strong safeguards will ensure that all consumers share the benefits.

This same principle also applies to the development and deployment of advanced information and communications technology. Recent advances in technology over the past two decades have led to an array of new and improved services and profound social and economic benefits for many people. As the rapid pace of technological achievement continues, an increasing percentage of consumers are taking advantage of these technologies and services. They are connecting with friends and colleagues through e-mail, accessing the Internet to search for information or shop online and conversing from practically anywhere through the use of wireless telephone service. Some even have access to more sophisticated services such as video-on-demand and teleconferencing that will allow them to hold business meetings, visit the doctor or rent a movie, all without having to leave their home. Simply put, new technologies and services are dramatically changing the way Americans work, communicate, shop and obtain information. At the same time, however, there is still a significant gap, often referred to as the "digital divide," between those with access to technology and those without it. Older persons as well as persons with lower incomes and education levels, certain minorities and residents of rural areas or central cities are among the groups that typically lack access. In fact, persons

aged 55 and over trail all other age groups with respect to computer ownership and access to e-mail and the Internet (see Figure 10-2). In the future, ready access to information and communication services such as e-mail and the Internet will become only more critical to economic success and personal well-being. As such, it is critically important that these services be available to everyone regardless of gender, income or age.

Figure 10-2

Computer Ownership and E-mail and Internet Access by Age of Household



Source: *Falling through the Digital Divide*, NTIA, 1999.
Prepared by AARP Public Policy Institute.

AARP PRINCIPLES

UTILITIES AND ADVANCED COMMUNICATIONS

Universal Service. Essential utility services should be affordable to all households. Even in a competitive utility market, the goal of universal service must be maintained.

Customer Rights and Information. Consumers threatened with service termination should have established rights and protections.

To ensure that consumers make informed decisions about utility providers and products, terms and conditions should be clearly stated on all bills, marketing literature and other relevant communications.

Consumer Education. States should establish and maintain adequately funded education programs to help consumers in a competitive marketplace select utility services wisely and protect themselves against fraud.

Public Participation. Public utilities seeking rate changes should be required to justify such requests in advance at widely publicized public hearings conducted in the service area to be affected so that a wide range of residents and others can voice their views.

States should establish and maintain adequately staffed consumer advocacy organizations to represent residential and other small ratepayers at public hearings before regulatory bodies.

Low-Income Discounts. Regulators should ensure that low-income persons do not bear more than twice the burden median-income households bear to secure necessary utility services. Enrollment in programs that provide low-income assistance for utility services should be automatic for all eligible customers.

Regulation and Rate Structures. Utility rate structures should provide stable revenues, reflect private and social costs and benefits, distribute costs among customer classes fairly, be easy to understand and not be unduly discriminatory.

Regulators should hold utilities that are no longer rate-regulated to the same high standards of service quality, customer service and reliability as they do those that are rate-regulated.

Legislators and regulators should reevaluate on a periodic basis any alternative form of regulation to ensure that utilities continue to offer reliable, high-quality service at reasonable rates.

Regulators should perform mandatory and rigorous audits of unregulated affiliates, parent holding companies and regulated utilities in order to ensure the fair allocation of costs and profits.

Terms and Conditions for Competitive Markets. Legislators and regulators should ensure that, where allowed, true and effective competition develops before deregulation takes place in the utility industries.

Mergers. Regulators should prohibit utility company mergers that would compromise regulatory protection for residential ratepayers, hinder competition or fail to increase economic efficiency.

Residential ratepayers should receive at least 50 percent of the short-term and long-term forecasted economic benefits, as determined by regulators, of any proposed merger or acquisition.

Ratepayers should not bear the costs and risks of utility mergers or takeovers.

Anticompetitive Safeguards. Specific safeguards should be adopted to protect the consumer against anticompetitive activity.

Prudent Investment. Regulators should not allow utilities to recover from consumers any plant costs that were not prudently incurred. Regulators should prohibit utility companies from billing customers for the costs of construction work in progress. Ratepayers should not pay for plant additions until they receive service from them (an idea known as the "used and useful" rule). Regulators should ensure that all costs reflected in customers' bills are for resources that are used and useful. Regulators should minimize the cost to ratepayers of completed construction by requiring utilities to spread rate increases over several years.

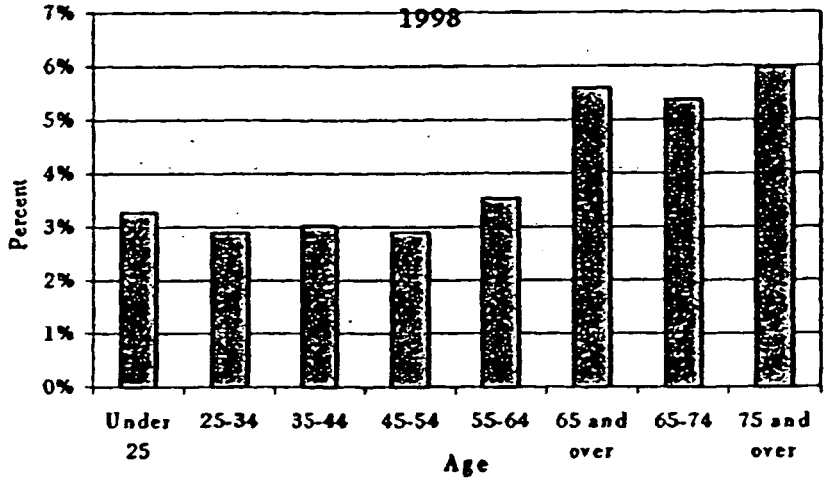
ENERGY

BACKGROUND

Older Americans are particularly vulnerable to rapid increases in energy prices. Although they consume approximately the same amount of energy as do younger people, older Americans devote a higher percentage of total spending to residential energy (see Figure 10-~~23~~). This may be because older persons spend a greater proportion of their income on home-heating costs (even after adjusting for weather and home size). Among low-income older families, an average of ~~17.5~~14 percent of their income is spent on residential energy. Too often, low-income older persons must choose between risking their health and comfort by cutting back on energy expenditures or reducing spending for other basic necessities.

Figure 10.3

Energy Expenditures as a Percent of Income, by Age, 1998



Source: Bureau of Labor Statistics: *Consumer Expenditure Survey, 1998; Average annual expenditures and characteristics.*
Prepared by AARP Public Policy Institute

ENERGY ■ Electricity Restructuring

BACKGROUND

For much of this century, electric utilities have exclusively controlled the generation, transmission and distribution of the nation's electricity; that is, they have provided the power generated at the plant and the transmission or delivery of that power to community wires

and poles that distribute or carry the power to a customer's home. Under this monopoly system, utilities have been subject to regulation by state public utility commissions and obligated to provide reliable service to all customers who want it.

Changes to the industry proposed by Congress and state legislators would spur retail competition and allow consumers to choose the generator of their electricity and purchase electricity from the generator of their choice. In most instances, the poles and wires would still be owned by one company, which would thus have a monopoly over the transmission and distribution of power in a certain geographic region (a "service area" or "service territory").

Restructuring is the movement allowing consumers to purchase electricity generation services from competing suppliers rather than from the traditional regulated monopoly structure. As it is generally used, restructuring refers to retail competition, whereby consumers have the opportunity to choose from among a number of power generators to purchase their electricity. The transmission and distribution of electric power would remain under regulatory control.

Contrary to the rhetoric of some restructuring proponents, benefits in the form of lower costs are not guaranteed to residential ratepayers. If the outcome of restructuring is left entirely to the marketplace, residential consumers are likely to be the last class of customers to benefit—if they receive any benefits at all. Residential consumers and small businesses are at a disadvantage because they do not purchase enough electricity to be as attractive to competitors as industrial customers. Thus, if residential consumers are not the first or at least among the first, to have access to competition, large commercial and industrial users will corner the market for lower-priced power.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring

Regulators should adopt safeguards that ensure just, reasonable and affordable rates and high-quality service for residential customers under retail competition.

In the transition to a competitive market for electricity, state policymakers should ensure that utilities do not give discounts to industrial consumers at the expense of residential ratepayers.

Legislators and regulators should ensure that residential ratepayers receive equitable and simultaneous benefits, including rate reductions, equal access and better service, from retail competition.

ENERGY ■ Electricity Restructuring
Consumer Protections in the Electric Industry

BACKGROUND

Consumer protection laws must be fully applicable to the sale of electricity in a restructured industry. Low-income, non-English-speaking, and elderly consumers, in particular, will need strong protections and access to special market information to prevent abuse in the competitive market.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring

Consumer Protections in the Electric Industry

Legislators and regulators should vigorously and effectively enforce the following consumer protection principles in a competitive retail market.

- All suppliers and service providers must meet service quality standards or pay significant penalties for noncompliance.
- All suppliers and service providers must abide by state consumer protection statutes and not engage in unfair or deceptive acts and practices. States should impose substantial fines on violators for each specific offense.
- All suppliers and service providers should be required to disclose such information as price per kilowatt-hour of electricity and its generation sources as well as any fees or minimums.
- Customer consent should be obtained before any personal data such as usage, billing and payment information is shared or sold.
- All suppliers and service providers must adhere to strict credit and collection standards that ensure consumers are not disconnected from basic service if they fail to pay for deregulated services.
- All suppliers and service providers must be licensed to do business in the state in which they operate and must meet minimum market standards of conduct.
- All customers should have access to information and education to help them understand their rights and responsibilities.
- Residential consumers should participate in all decisions on electric utility restructuring.

- Utilities should continue to provide repair services in emergency situations and should base their emergency response on a set of principles that include the following.
  - An emergency exists when, for example, a gas odor is detected, a home is without heat or a pilot light needs to be lighted.
  - Emergency repair services should be free of charge.
  - The rules covering minor repairs should be fair to both the ratepayer and the service repair operator.

ENERGY ■ Electricity Restructuring
Safety and Reliability

BACKGROUND

The reliability of the Nation's electric system is of paramount importance to consumers and must not be compromised by current electric industry restructuring efforts.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Safety and Reliability

Legislators and regulators should ensure a reliable, safe, and high-quality electricity system before endorsing retail competition.

ENERGY ■ Electricity Restructuring
Universal Service

BACKGROUND

Any effort to restructure the electric utility industry should incorporate a broad definition of universal service, one that includes the concept of affordability. All consumers should be able to purchase a level of service that meets daily needs at an affordable price. The requirement of affordability clarifies that customers should not have to forego other necessities in life such as medicine and food in order to use necessary electricity. Moreover, it recognizes that just and reasonable rates may be unaffordable to some.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Universal Service

Federal and state regulators should establish a definition of "universal service" that is similar to the one in the Telecommunications Act of 1996. In particular, the definition should specifically state that rates should be just, reasonable and affordable and that energy assistance programs should be available to low-income households and to ratepayers in high-cost areas.

ENERGY ■ Electricity Restructuring
Consumer Education

BACKGROUND

Success in implementing retail electric competition will depend in large part on the readiness and willingness of consumers to change their understanding of how to purchase electricity. Indeed, consumer participation in the market, will not occur if consumers have to spend hours figuring out jargon and making choices among disparate and differing arrays of services in order to save a very modest amount of money.

STATE POLICY

ENERGY ■ Electricity Restructuring
Consumer Education

State policymakers should establish and adequately fund a consumer education program to maximize public participation in restructuring, minimize customer confusion about the changes taking place, and inform consumers about how to shop for electricity. More specifically, any consumer choice education plan, at a minimum, should:

- begin in advance of retail competition and before most electric suppliers initiate retail marketing activities;
- ensure that residents can access information about electric restructuring when, where, and how they want it through a variety of communications tools and channels;
- ensure that all communications efforts are clear and jargon-free;
- involve community-based organizations in delivering information and optimizing educational strategies as means to extend the reach of the plan and address the unique characteristics and needs of the communities and people throughout the state;
- be competitively neutral so as to avoid favoring one supplier or energy source over another;

Stranded costs (sometimes called transition or uneconomic costs) are assets and investments that no longer have economic value (e.g., nuclear power plants and above-market independent power producer contracts) because of the move to a restructured electric utility industry. Under traditional regulation, utilities have been allowed to charge rates that cover costs and provided a reasonable return on investment. Some of the investments, however, were not cost-effective and are not sustainable in a truly competitive market. Thus, the stranded cost is the difference between the utility's costs under traditional regulation for generating plants or contracts for the output of such plants and the cost of replacing that power in the open market today.

Stranded cost recovery is one of the most contentious and important issues in electric industry restructuring. It refers to any mechanism that requires customers to pay charges over and above the market price for electricity. Reducing stranded costs is essential to lowering consumer electricity bills. Ratepayers will not benefit from a restructured electric utility industry if they must assume excessive stranded costs.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Stranded Costs

State policymakers should ensure that residential ratepayers do not have to pay for stranded costs as long as they do not benefit from retail competition.

If policymakers endorse retail competition, then stranded costs should be shared fairly and equitably among stockholders and all classes of consumers contributing to the need for plant capacity.

In calculating stranded costs, regulators should consider the following mitigating factors: previously compensated risk, investments made as a result of poor management decisions, ongoing profitable investments and new revenue opportunities.

Any mechanism for recovering stranded costs should be nondiscriminatory and nonbypassable; that is, no customer or customer class should be exempt from paying for stranded costs.

ENERGY ■ Electricity Restructuring
Securitization

BACKGROUND

Securitization is a financial mechanism that allows a utility to recover stranded costs up front, in a single lump-sum payment. It converts into a bond the value of ~~what~~ which customers would pay in a surcharge to recoup stranded costs.

In most states, securitization begins with state electric restructuring legislation. Securitization laws typically ensure that consumers will pay for stranded costs through a charge on their electric bill, often referred to as a transition charge. It also directs the state public utility commission (PUC) to determine the amount of stranded investment that can be recovered through securitization and to authorize the transaction. Once the PUC approves the transaction, a special government-established entity, often a trust, issues bonds whose repayment is guaranteed by the legislature. The trust then gives the proceeds from the sale of these bonds to the utility in exchange for the right to collect the utility's transition charge. Unless restricted by law, the utility can use the money from the bonds to retire its debt, buy back stock, make investments or do anything else it wants. In theory, securitization lowers transition charges by replacing the utility's higher-cost debt with lower-cost bond debt and thus reducing financing costs. The lower interest rate is a result of the legislature's declaration in the securitization law that customer repayment is irrevocable.

Proponents of securitization contend that it:

- reduces the financial effect of stranded investment at no cost to customers or shareholders,
- can accelerate the reduction of rates consumers pay and
- provides utilities with cash they can use to restructure their capitalization for competitive markets.

Opponents of securitization are concerned that it:

- bypasses the regulatory process by converting a utility's opportunity to recover its costs and earn a return into a guarantee protected by legislation;
- traps customers into taking on market risk that investors should bear;
- replaces annual revenue the utility would have received with an up-front, lump-sum cash payment; ignores future market price changes; provides poor incentives to mitigate stranded costs; and guarantees a payment stream that may be entirely inappropriate in the future;
- does not necessarily guarantee that the utility will use the money wisely; and
- could be anticompetitive because it gives the utility a large sum of cash that its competitors do not have.

STATE POLICY

ENERGY ■ Electricity Restructuring

Securitization

State policymakers should rely on securitization only as a least desirable means for utilities to recover their stranded costs.

Before authorizing any securitization plan, state policymakers should guarantee that the plan would result in rate reductions for consumers.

ENERGY ■ Electricity Restructuring
Cost Allocation

BACKGROUND

States that permit retail competition must decide whether to allocate transmission, distribution and other joint and common costs in proportion to use and cost causation. In particular, there is concern that the residential customers will bear costs incurred solely in serving large users, which will not have to pay their share for the costs for utility services.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Cost Allocation

Federal and state regulators should devise cost allocation methods that appropriately assign transmission and distribution costs and accelerated depreciation expenses to those customers responsible for the costs and expenses.

Federal and state regulators should ensure that all ratepayers share in the responsibility for paying joint and common costs based on a user-pays principle.

ENERGY ■ Electricity Restructuring
Market and Industry Structure

BACKGROUND

Under retail competition, legislators and regulators will have to decide what industry and market structures to adopt. One policy option to address market power in a restructured electric utility industry is to separate completely the ownership and control of transmission and distribution lines from the ownership of power plants. This procedure, known as divestiture, would ensure that state-regulated investor-owned utilities do not have the opportunity to subsidize competitive, nonregulated operations with revenues from regulated services.

Establishment of a regional transmission organization (RTO), such as an Independent System Operator (ISO) or other similarly independent competitively neutral entity, to manage a transmission grid ~~is another option~~ also could help to address market power concerns. Depending on how it is structured, an ~~ISO~~ RTO lessens or eliminates the potential for owners of the transmission system to favor one generation facility over another in providing transmission access. An ~~ISO~~ RTO could also help to alleviate transmission congestion and ensure safe and reliable electric service.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Market and Industry Structure

To ensure a fully competitive market, policymakers should require electric companies to divest their generating capacity from their transmission and distribution capacity.

Legislators and regulators should carefully scrutinize the costs and benefits of various market structures and adopt a model that ensures benefits for residential ratepayers.

~~If an Independent System Operator (ISO) is necessary to maintain the integrity of the transmission and distribution system, the~~ The Federal Energy Regulatory Commission, with assistance from the states, should ensure that ~~the ISO~~a Regional Transmission Organization (RTO):

- is accountable to a broad group of stakeholders, including residential consumer representatives and is entirely independent of transmission owners and generators;
- provides comparable and nondiscriminatory service to all end users of the transmission system;
- covers a geographic region of sufficient size to avoid charges from multiple transmission operators and increase supply options for consumers;
- maintains safe and reliable service for all end users of the transmission system; and
- minimizes system congestion and other real or potential transmission constraints.

~~FEDERAL & STATE POLICY~~

~~ENERGY ■ Electricity Restructuring~~
~~Safety and Reliability~~

~~Legislators and regulators should ensure a reliable, safe and high quality electricity system before endorsing retail competition.~~

~~FEDERAL & STATE POLICY~~

~~ENERGY ■ Electricity Restructuring~~
~~Universal Service~~

~~Federal and state regulators should establish a definition of "universal service" that is similar to the one in the Telecommunications Act of 1996. In particular, the definition should specifically state that rates should be just, reasonable and affordable and that~~

energy assistance programs be available to low-income households and to ratepayers in high cost areas.

ENERGY ■ Electricity Restructuring Aggregation

BACKGROUND

Aggregation occurs when an entity brings together retail electric customers into buying groups to increase each consumer's purchasing power. Because large users of electricity are the most attractive customers in a competitive marketplace, aggregation may represent the residential customer's best opportunity to benefit from electric utility restructuring.

Local governments may be best suited to implement aggregation. Municipal aggregation can combine the best of local control and competitive markets, while allowing individual, low-consumption customers to band together for more purchasing muscle.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring Aggregation

Federal and state policymakers should encourage and facilitate aggregation among residential consumers to ensure that they realize benefits from restructuring.

Policymakers should require regulated distribution utilities to encourage and facilitate aggregation among residential consumers.

Policymakers should permit local entities, which include but are not limited to municipalities, county governments, local community organizations and neighborhood civic groups, to conduct a bid process and select a competitive electricity supplier for their constituency. For local entities that implement such a plan, all consumers must still have the ability to opt out and choose their own supplier.

ENERGY ■ Electricity Restructuring Consumer Protections in the Electric Industry

BACKGROUND

The full force of all consumer protection laws must apply to the sale of electricity in a restructured industry. Low income, non English speaking and elderly consumers, in particular, will need strong protections and access to special market information to prevent abuse in the competitive market.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Consumer Protections in the Electric Industry

Legislators and regulators should vigorously and effectively enforce the following consumer protection principles in a competitive retail market.

- All suppliers and service providers must meet service quality standards or pay significant penalties for noncompliance.

- All suppliers and service providers must abide by state consumer protection statutes and not engage in unfair or deceptive acts and practices. States should fine violators for each specific offense.

- All suppliers and service providers should be required to disclose such information as price per kilowatt-hour of electricity and its generation sources as well as any fees or minimums.

- Customer consent should be obtained before any personal data such as usage, billing and payment information is shared or sold.

- All suppliers and service providers must adhere to strict credit and collection standards that ensure consumers are not disconnected from basic service if they fail to pay for deregulated services.

- All suppliers and service providers must be licensed to do business in the state in which they operate and must meet minimum market standards of conduct.

- All customers should have access to information and education to help them understand their rights and responsibilities.

- Residential consumers should participate in all decisions on electric utility restructuring.

- Utilities should continue to provide repair services in emergency situations and should base their emergency response on a set of principles that include the following.
  - An emergency exists when, for example, a gas odor is detected, a home is without heat or a pilot light needs to be lighted.
  - Emergency repair services should be free of charge.

~~The rules covering minor repairs should be fair to both the ratepayer and the service repair operator.~~

ENERGY ■ Electricity Restructuring
Slamming and Cramming

BACKGROUND

Slamming and cramming, prevalent problems for long distance telephone customers, may become problems for electricity consumers as competition increases among utility companies. Slamming refers to arranging for a customer's competitive supplier to be switched without the customer's agreement. Cramming refers to the practice of adding services to a customer's account that the customer never ordered.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Slamming and Cramming

Federal and state regulators should fully enforce existing laws and regulations against slamming, cramming and other deceptive marketing practices.

Federal and state policymakers should ensure that electric bills contain complete and clear descriptions of all charges listed and clearly identify the service provider (by names, addresses and telephone numbers) responsible for each charge.

Federal and state regulators should require a utility to obtain clear, verifiable and written authorization before changing any consumer's electricity provider.

Federal and state policymakers should impose substantial penalties on companies that engage in slamming, cramming and other deceptive marketing practices.

Federal and state policymakers should ensure that consumers who have been slammed or crammed do not have to pay for any resulting charges.

Consumers who have been slammed or crammed should receive full refunds on any payments for unwanted services.

~~ENERGY ■ Electricity Restructuring~~
~~Pilot Programs~~

BACKGROUND

~~The purpose of a pilot program is to provide choices to a selected group of customers so that valuable lessons can be learned about how to bring competitive opportunities to all~~

~~customers. These lessons can then be applied when customer choice is offered to all customers.~~

~~FEDERAL & STATE POLICY~~

~~ENERGY ■ Electricity Restructuring~~
~~Pilot Programs~~

~~State policymakers should ensure that participants in pilot programs represent an equal percentage of each customer class (residential, commercial, industrial) based on kilowatt hours consumed.~~

ENERGY ■ Electricity Restructuring
Environmental Issues

BACKGROUND

Electricity generation is a major producer of emissions that cause acid rain, smog and global warming. As such, electric utility restructuring efforts create risks, as well as opportunities, for the environment and for public health.

FEDERAL & STATE POLICY

ENERGY ■ Electricity Restructuring
Environmental Issues

Legislators and regulators should support the development of an affordable, cost-effective and efficient program to ensure energy conservation and environmental protection in a restructured electric utility industry.

Legislators and regulators should consider requiring utilities to inform customers of their portfolio of generation (i.e., how much nuclear fuel, coal or gas they use to produce power).

ENERGY ■ Natural Gas

BACKGROUND

For much of this century, the structure of the natural gas industry remained relatively stable. Gas manufacturers sold gas to pipeline companies. Pipeline companies sold and transported gas to local distribution companies (LDCs). LDCs sold gas to residential, commercial and industrial end users. The federal government regulated the prices for gas sold by producers to pipelines and pipelines to LDCs. State government regulated the price at which LDCs sold gas to end users. Although this system offered consumers some protections from market abuse, it did not give them a choice in purchasing gas services. Instead, LDCs were regulated franchise monopolies serving specific geographic areas. They made decisions on purchase, storage, distribution and other customer functions.

Starting in the late 1970s, however, a series of changes at the federal level significantly transformed the structure of the natural gas industry. The changes required pipeline companies to separate services they offered to the LDCs and limited their activity to transportation of gas for third parties. Some gas purchasers can now negotiate prices with different suppliers and deal separately with the pipeline companies over the cost of delivery.

The changes in the natural gas industry also mean that large industrial consumers are now able to transport gas themselves, avoiding LDCs as well as the costs associated with their delivery systems. A number of states are now considering programs that would allow residential and commercial customers to purchase natural gas from a supplier other than their LDC. If these efforts are adopted, LDCs would distribute gas only for those residential consumers who select an independent supplier.

FEDERAL & STATE POLICY

ENERGY ■ Natural Gas

Federal and state regulators should ensure that local gas monopolies procure gas supplies and allocate costs for residential ratepayers at the lowest possible cost consistent with maintaining adequate profits and reliable supply inventories.

Legislators and regulators should ensure a reliable, safe and high-quality natural gas system before implementing retail gas competition.

If the natural gas industry is restructured to permit residential consumers to select their supplier, regulators should adopt safeguards that protect just, reasonable and affordable rates and high-quality service for residential customers.

State policymakers should ensure that residential ratepayers do not have to pay for stranded costs as long as they do not benefit from the move to retail competition.

State policymakers should require natural gas suppliers to abide by the state's consumer protection statutes and prohibit them from engaging in unfair or deceptive acts and practices.

LOW-INCOME ~~FEDERAL~~ ENERGY ASSISTANCE PROGRAMS

BACKGROUND

Federal energy assistance programs are the primary source of help for low-income older persons in meeting home fuel costs and improving the energy efficiency of their residences. The two major programs are the Low Income Home Energy Assistance Program (LIHEAP), administered by the US Department of Health and Human Services and the US Department of Energy's Weatherization Assistance Program. Thirty-seven percent of all households served by LIHEAP have at least one member age 60 or older.

Under federal rules, a household is eligible for LIHEAP if income does not exceed 150 percent of poverty level or 60 percent of the state median income, whichever is greater. States, however, may establish a more restrictive standard and set income eligibility as low as 110 percent of the poverty level.

Current funding levels permit only 19 percent of eligible households to receive LIHEAP benefits. The average benefit covers only about 49 percent of a recipient's heating cost in most states.

FEDERAL POLICY

Low-Income ~~Federal~~ Energy Assistance Programs

Congress should preserve and increase funding for the Low Income Home Energy Assistance Program (LIHEAP) and the Weatherization Assistance Program. These programs should strengthen outreach, provide meaningful education and conduct effective publicity campaigns.

Congress should pass supplemental, emergency appropriations to replenish LIHEAP funds when energy crises prematurely exhaust these funds.

Congress should require an annual study to document the extent to which low-income energy assistance is needed among low-income consumers. Such an evaluation should determine the extent to which low-income consumers undertake unfavorable actions (e.g. foregoing prescription medications, going one or more days without food, not paying rent, etc.) as a result of unaffordable or "nonsustainable" home energy bills.

Congress should require a performance-based evaluation methodology that measures the performance of LIHEAP.

STATE POLICY

Low-Income ~~Federal~~ Energy Assistance Programs

States should encourage companies that supply LIHEAP households to plan and coordinate service with the responsible state agency. Coordination can reduce the adverse impact of delayed federal funding for other critical state programs and services until all federal funds are available.

TELECOMMUNICATIONS AND ENERGY ANTICOMPETITIVE SAFEGUARDS ■ Subsidiary and Affiliate Activities

BACKGROUND

As new markets in energy and telecommunications develop, dangers for individual consumers may arise from the residual monopoly advantages held by existing utility providers. Many utilities have formed separate, unregulated subsidiaries in order to participate in markets closed to their regulated divisions. These utilities, seeking to combat rising competition, may use tactics, such as preferential pricing and hidden asset transfers, to give their subsidiaries an unfair advantage in the marketplace and drive potential competitors out of business.

FEDERAL & STATE POLICY

TELECOMMUNICATIONS AND ENERGY ANTICOMPETITIVE SAFEGUARDS ■ Subsidiary and Affiliate Activities

Policymakers should adopt legislation that protects the consumer from anticompetitive activities between providers of monopoly services and their separate subsidiaries. The following guidelines should apply:

- Separate affiliates (subsidiaries and parent companies) should conduct all competitive business independently.
- Parent companies and subsidiaries should own assets separately.
- Regulated assets should not qualify as security for loans to affiliates or be subject to legal action against affiliates.
- Parent companies and subsidiaries should maintain and audit separate financial records and have different employees, officers and directors.
- Affiliates should conduct transactions between themselves at arm's length. Transactions are subject to public notice and hearing.

- Incumbent utility service providers should not discriminate in favor of their separate affiliates, nor cross-subsidize any business of an affiliate.

- The federal Justice Department and corresponding state agencies should monitor anticompetitive behavior and enforce laws prohibiting such practices.

TELECOMMUNICATIONS AND ENERGY ANTICOMPETITIVE SAFEGUARDS ■ Mergers and Acquisitions

BACKGROUND

Mergers and acquisitions threaten to inhibit the development of truly competitive utilities because they increase the market power of the newly formed entity, which, in turn, either creates a barrier to entry for potential competitors or allows the newly formed entity to engage in anticompetitive marketing and pricing practices.

FEDERAL & STATE POLICY

TELECOMMUNICATIONS AND ENERGY ANTICOMPETITIVE SAFEGUARDS ■ Mergers and Acquisitions

Regulators should prohibit utility company mergers that compromise regulatory protection for residential ratepayers, retard competition or fail to increase economic efficiency.

State policymakers should ensure that residential ratepayers receive at least 50 percent of the short-term and long-term forecasted economic benefits, as determined by regulators, of any proposed merger or acquisition.

Federal and state policymakers should ensure that ratepayers do not bear the costs and risks of utility mergers or takeovers.

WATER AND SEWER

BACKGROUND

The residential water industry in the US is, in reality, three separate industries that collectively include more than 60,000 water systems serving the public. One industry comprises small groups of large, sophisticated, investor-owned water companies. Another water industry consists of large, sophisticated water systems that are owned and operated by large cities. The third water industry is composed of more than 50,000 small water systems, each serving fewer than 3,000 customers, with many serving fewer than 100 customers. These systems may be either publicly or privately owned and lack full-time employees and basic financial and managerial controls. Most people in the US and most urban areas are served by

large water systems in the first two categories. However, the third category contains the greatest number of water systems in the country. These serve many suburban areas and essentially all rural areas with public water.

WATER AND SEWER ■ Rising Cost of Water

BACKGROUND

Water and sewer rates are rising dramatically in almost every community across the nation. In fact, water rates are rising much more quickly than incomes. These rising rates are a particular hardship for many older persons and other households who are living on fixed and/or limited incomes. A number of factors are responsible for increase in rates.

- Increased Regulation of the Quality of Water—The Environmental Protection Agency (EPA) is considering several major changes in regulations to improve the quality of drinking water that could result in dramatic increases in cost. For example, EPA expects to finalize in the near future new regulations concerning the treatment of surface water supplies, at an estimated price tag of more than $1 billion nationwide. Additional regulations dealing with the presence of radon and arsenic in water are also being considered by EPA. If these regulations lead to more stringent requirements, they could fuel another round of dramatic increases in water costs within the next several years. Further, EPA is scheduled to propose regulations governing the disinfection of groundwater sources, which could have major cost implications for small water systems within five years.

- The Physical Age of Water Systems—Many of the nation's water systems are beginning to fail. A large percentage of these systems have outlived their 100-year life expectancy. Many other systems, built during World War II with inferior metals, are also failing. Replacing water mains is extremely expensive—often about $100 per foot—particularly when the original mains cost about a few dollars per foot. According to a 1997 EPA study, water systems will need to spend a minimum of $138.4 billion over the next 20 years to install, upgrade or replace infrastructure and ensure the provision of safe drinking water. Of this total, almost $77 billion is for infrastructure improvements needed as soon as possible to protect public health.

- Increased Demand for a Scarce Resource—For the western US, additional factors contribute to the rising cost of water. First, much of the land is arid, with more than half of the area of the western states receiving less than 20 inches of rainfall per year, the minimum rainfall required by agricultural crops without artificial irrigation. Some areas receive less than 10 inches of rain per year. Second, water supplies are strained further as the West continues to experience a rapid growth in population. In fact, the population of western states increased by about 32 percent in the past 25 years, compared with 19 percent for the rest of the nation. By the year 2025, the West is expected to add another 28 million residents. Finally, the population in the West is distributed unevenly over a vast area of land. Western states account for more than 60 percent of the land area of the continental

United States but have less than 40 percent of the population. For this reason, water often has to flow great distances through pipeline and canal systems before reaching its destination. The combination of these three factors has made water increasingly expensive in the West.

- Consolidation and Restructuring of Small Water Systems—Many small systems need to improve treatment and pumping equipment and other infrastructure components, as well as come into compliance with government requirements and become financially viable. Although such efforts tend to improve the safety and reliability of water service, they also can result in dramatic price increases. Rate increases of 300 percent or more are not uncommon when a neglected small water system begins modernization. Because of the rising cost of water, a number of large investor-owned water utilities are moving to acquire small private or investor-owned water systems—as well as many thousands of municipal systems facing budgetary constraints and considering privatization. This consolidation trend in the water industry is likely to continue over the next several years as the cost of water increases.

- Privatization—Most water systems are publicly owned and operated. Some government officials and many executives of large, privately owned water companies believe that government should not be in the business of providing this essential utility service. In addition, because of budgetary constraints, some publicly owned water systems have been neglected and are in need of major capital improvements. These factors are fueling an increasing trend toward privatizing some or all of the operations of publicly owned water systems. Although ~~privatization~~ it may result in improved levels of service in some instances, ~~private owners must pay taxes and other expenses that a publicly owned system does not incur.~~ privatization in itself does not equal or ensure competition or provide protection against monopoly abuse. Ownership is less important than competition (or regulation) in achieving performance gains. Efficiency practices and economies of scale are most important.

~~Because of the rising cost of water, a number of large investor-owned water utilities are moving to acquire small private or investor-owned water systems—as well as many thousands of municipal systems facing budgetary constraints and considering privatization. This consolidation trend in the water industry is likely to continue over the next several years as the cost of water increases.~~

FEDERAL & STATE POLICY

WATER AND SEWER ■ Rising Cost of Water

Congress should make sufficient funds available for states and municipalities to help defray the costs of complying with increased water quality regulation.

Congress should require states and municipalities to implement low-income affordability or payment programs or both so that low-income residents may qualify for federal assistance in paying for water.

Regulators should consider consolidation, technological innovations and other methods that would allow the water industry and regulators to recognize economies of scale and, as a result, to control costs.

Regulators should develop least-cost water policies that will provide universal service and ensure adequate, potable and affordable water for current and future users.

WATER AND SEWER ■ Flexible Standards and Goals for Water Quality

BACKGROUND

Community prosperity and well-being depend directly on the sufficient supply of clean water. In addition to providing basic human health and sanitation, a clean and adequate water supply provides crucial benefits such as irrigation for agriculture, a habitat for myriad plants and animals, aesthetics, recreational opportunities and economic vitality. Many of these benefits are not complementary. Obtaining one benefit may make it more difficult to pursue another. In this regard, the most appropriate choices and compromises are often those that are made based on the values and needs of individual communities.

FEDERAL POLICY

WATER AND SEWER ■ Flexible Standards and Goals for Water Quality

Legislators and regulators should balance water demands for municipal, agricultural and industrial uses with environmental protection and preservation of water quality.

Federal policymakers should allow states and localities reasonable flexibility to achieve national standards and goals for the quality of water. At the same time, policymakers should require careful monitoring and strict accountability to ensure compliance with the national standards.

TESTIMONY BEFORE THE

ENERGY AND POWER
SUBCOMMITTEE

OF THE

HOUSE COMMERCE COMMITTEE

ON

ELECTRIC UTILITY INDUSTRY RESTRUCTURING

OCTOBER 6, 1999

WASHINGTON, D.C.

WITNESS: Rutherford "Jack" Brice

For further information, contact:
Jeff Kramer
Federal Affairs Department
(202) 434-3800

Mr. Chairman and Members of the Committee:

My name is Jack Brice and I am a member of AARP's Board of Directors. We thank Chairman Barton and the other members of the Committee for inviting us to present our views on the consumer protection provisions within H.R. 2944, the "Electricity Competition and Reliability Act." We will confine our remarks to the provisions contained in Title III of the bill as well as to the section in Title V dealing with aggregation. However, as representatives of residential consumers we also share some of the concerns surrounding the market power provisions voiced by other panelists today.

AARP's membership has a vested interest in the move towards competition now underway in the electric utility industry. For everyone, electricity is a basic necessity of modern life. The cost of this necessity, however, can comprise a significant portion of an average consumer's personal expenditures. In fact, energy costs can take up to as much as 5 percent of the median-income household's monthly budget. Older Americans are particularly vulnerable to rapid increases in energy prices. Although older persons consume approximately the same amount of residential energy as

non-elderly Americans do, they devote a higher *percentage* of total spending to residential energy. Among low-income older families, an average of 17.5 percent of their income is spent on residential energy. Too often, low-income older persons are faced with the choice of risking their health and comfort by cutting back on energy expenditures or reducing spending for other basic necessities.

In testimony AARP presented to this Committee earlier this year we discussed generally our concerns surrounding the move to retail competition. We questioned the claims that retail competition would bring about substantial rate reductions for all ratepayers, including the elderly. We also expressed hope that consumers would receive the corollary benefits of the ability to shop among competitive providers, and to take advantage of a new array of products and pricing options. We concluded that the fate of residential consumers in a restructured electric industry will depend on whether the new market structure gives them a fair chance to receive the benefits of competition, ensures that their interests are represented in the market, and provides fundamental protections against abuse.

Residential ratepayers, and particularly older Americans, face very significant risks – and few, if any, assured benefits -- in the move to retail competition in the electric power industry. These risks go beyond the ability to benefit from choice. They also include risks associated with confusion, deception and fraud.

AARP is pleased that H.R. 2944 addresses these risks. Our testimony today will focus on how elements of Chairman Barton's bill support AARP's goals to:

- Ensure that residential customers are among the first to benefit from competition;
- Provide strong consumer protection provisions; and
- Establish a comprehensive universal service policy, including a guarantee of affordability.

Residential Customers First

AARP believes that residential customers should benefit from restructuring. Unfortunately, residential consumers are simply not as attractive to utilities

as industrial customers are. Discussions between AARP staff and representatives of electric utilities, industrial consumers and regulators have highlighted the fact that residential consumers are not likely to reap the full benefits of restructuring during the initial years of competition. The ability to aggregate, however, will help to bring some benefit in the short-term.

Aggregation will allow residential consumers from like communities or associations to pool their respective electricity needs, enabling them to negotiate lower rates from a power provider and benefit from the outset.

AARP supports a federal role in facilitating aggregation in states that have opened their markets to competition. H.R. 2944 recognizes the importance of aggregation as well. The bill provides residential consumers with flexibility, allowing that any entity that aggregates consumers may acquire retail electric energy on an aggregate basis. As we have suggested before, residential consumers would further benefit if aggregation were offered on an opt-out basis. The opt-out provisions would ensure that a majority of underserved consumers could reap the benefits of lower rates. Rep. Brown

has introduced the concept of a residential opt-out aggregation system in his "Community Choice for Electricity Act of 1999."

Consumer Protection Laws

For competition in the electricity industry to work, strong consumer protection laws must be applied to the sale of electricity in a restructured industry. Low-income, non-English speaking and elderly consumers, in particular, will need very strong consumer protections to prevent abuse in the competitive market.

We are pleased that Title III of H.R. 2944 is devoted to addressing consumer protection concerns. Attacking the problems of slamming and cramming, while providing for information disclosure and privacy restrictions is to be commended.

If enacted, the anti-slamming and anti-cramming provisions of the Chairman's legislation will go a long way towards addressing these abuses. AARP is pleased that the need for information disclosure is increasingly understood by policymakers and is reflected in H.R. 2944. The bill

includes provisions outlining the kind of information that suppliers must present to consumers when offering services. Many of the elements that we have urged be included in billing statements, such as price information, description of charges, and information regarding interruptibility of service are included in this section. Further, the legislation clarifies that states may impose additional requirements. This kind of "consumer information floor" is what we have been seeking.

Further, we applaud Chairman Barton for striking a delicate balance between the protection of individual privacy regarding information exchange and the need to make aggregate consumer information available to promote competition. AARP values the individual's right and ability to control the movement of personal information. We are pleased that the provisions in H.R. 2944 recognize that right by requiring prior written approval before personal information can be disclosed.

We also support the provision in H.R. 2994 that requires local distribution companies to make aggregate consumer information available to retail

electric suppliers upon request. By facilitating the transfer of this type of information, residential consumers are more likely to be offered choice.

While we are pleased overall with the consumer protection provisions included in H.R. 2944, there are certain areas that need further attention. In earlier testimony we detailed the importance of adopting a "Truth-in-Billing" requirement to supplement the information disclosure provision. AARP suggested that a comprehensive, easy-to-read billing statement each month would help alleviate consumer confusion, making consumers more likely to become participants in the competitive marketplace. This provision is missing from H.R. 2944.

AARP also supports the creation of a consumer database housed at the FTC to assist residential customers in obtaining information about retail electric utility providers, including aggregators. Additionally, the creation of an Office of Consumer Counsel within the FERC, as outlined in an earlier draft, would assist consumers.

Finally, as large aggregators, utility companies and power marketers are likely to operate on an interstate basis, it is incumbent upon the Congress to ensure that they meet certain threshold operational requirements and that deceptive, fraudulent or other illegal behavior not be not tolerated.

Universal Service

As we have said previously, electric utility service is essential. Therefore, one of the cornerstones in any restructuring effort is the requirement that electric utility service be universal and affordable. A universal service policy must ensure basic electric service at a level of consumption that would meet the needs of residential ratepayers for lighting, heating, cooling, cooking, and recreation. In our view, affordability means that electricity rates do not strain the household budget.

AARP is concerned that in a competitive environment, less attractive customers may be adversely affected. H.R. 2944's only recognition of universal service is through a "Sense of the Congress" provision. Unfortunately, such a declaration places the full burden on the states to collect fees and implement the program. AARP believes that there is still a

role for the federal government in ensuring that electric service is provided to all consumers. At a minimum, federal involvement should include participation on a Federal-State Joint Board that would oversee a program funded by a fee placed on all generators of electricity.

Conclusion

AARP is pleased with the attention Chairman Barton has devoted to residential consumers in H.R. 2944. The consumer protection and aggregation provisions should benefit consumers, but only if adequate market power provisions are put in place to ensure that competition becomes a reality.

AARP hopes that as legislation moves toward passage in the House, the provisions we have discussed today remain intact or are improved. We urge this Committee to remember that residential consumers will benefit from restructuring only if aggregation is facilitated, strong consumer protection provisions are enacted and electric service is ensured for all.

Mr. Chairman, the work that you have done to highlight many of the inherent problems in the move to a deregulated environment is to be commended. H.R. 2944 is a big step in the right direction. AARP looks forward to continuing our active participation in this debate on both the federal and state level and to working with you in crafting solutions that will ultimately benefit not only our members, but the nation as a whole.

ELECTRICITY STAKEHOLDERS

Legislative Principles for Competitive Wholesale Power Markets

In 1992, the Congress adopted the Energy Policy Act (EPAct). This law paved the way for increased competition in wholesale electric power markets. Since then, the U.S. has experienced dramatic growth in wholesale power sales, accelerated technical innovation and new supply options for power consumers. However, as the turmoil in some regional markets makes clear, the time has come to revisit federal electricity policy and bring it up to date. The following principles represent a legislative framework that will help ensure competitive wholesale power markets and enhanced consumer benefits for the next decade and beyond.

The organizations listed below believe that such legislation should, at a minimum, include the following principles:

- **Clarify that FERC has jurisdiction over the entire interstate transmission network** (recognizing state authority to set retail sales rates, as applicable under state law). This includes language to:
  - Clarify FERC's jurisdiction over both bundled and unbundled transmission services.
  - Affirm FERC's authority to ensure open and non-discriminatory access to transmission services at just and reasonable rates.
  - Preserve local decision-making over transmission rate-setting for cooperatively owned and publicly owned utilities.
  - Affirm that FERC retains the authority over the classification of facilities as transmission, provided that FERC must consider the views of a state PUC when making a decision.

- **Create Federally-sanctioned mandatory bulk power reliability rules** established by an independent self-regulating organization subject to FERC oversight.

- **Promote effective Regional Transmission Organizations (RTOs):**
  - Support the minimum functions and characteristics for RTOs and FERC's authorities set out in Order No. 2000.
  - Direct FERC to take action to ensure appropriate scope and configuration, and independent governance, of all RTOs.
  - Promote interregional coordination.
  - Retain FERC's authority to determine which facilities must be included in an RTO.
  - Clarify that FERC has the authority to require jurisdictional (as of the date of enactment) utilities to participate in an RTO as a generic condition for continued or requested market-based rate authorizations or as a standard requirement for merger approval or to remedy undue discrimination.
  - Authorize FERC to require transmission-owning federal utilities to participate in

an RTO to remedy undue discrimination.
- Allow FERC to order municipal and cooperative utilities to participate in an RTO based on a finding that the utility has engaged in undue discrimination in the provision of transmission service, or abused its control over transmission so as to disadvantage competitors, and open access transmission tariffs are not likely to remedy the problem.
- Ensure that orders issued with respect to cooperatively and publicly owned utilities accommodate tax code restrictions and/or bond covenants.

- **Establish and enforce non-discriminatory wholesale interconnection standards**, including interconnections at the distribution level that preserve appropriate local authority to protect distribution system safety, reliability and power quality.

- **Address wholesale market power abuses** by directing FERC to:
  - Establish and enforce rules and procedures to ensure competitive wholesale markets so as to prevent the abuse of market power, promote greater regulatory certainty for market participants, and protect the public interest;
  - Monitor market conditions and behavior;
  - Investigate, mitigate and remedy the abuse of market power where it exists in wholesale power markets; and
  - Eliminate regulatory barriers to the availability of anti-trust remedies in competitive wholesale markets.

- **Facilitate curtailable load responses** needed to reduce transmission and generation constraints and lower prices for consumers.

- **FERC's authority to review mergers** pursuant to Section 203 of the Federal Power Act should continue without time limits and should clearly include review of mergers between utility holding companies.

- **Repeal PUHCA and provide FERC and state PUCs with sufficient authority to protect consumers**, including access to books and records.

- **Prospectively reform PURPA:**
  - Preserve and respect all current obligations;
  - Provide relief from prospective mandatory purchase requirements of Section 210 of PURPA once a state has certified that a utility has unbundled and is providing nondiscriminatory open access to all of its transmission and distribution facilities.
  - End ownership restrictions on PURPA facilities.

- **Support consumer protection provisions:**
  - Anti-slamming and anti-cramming protections.
  - Consumer access to sufficient price, terms and environmental information to choose among competing suppliers.
  - Consumer friendly and transparent bill statements.
  - Consumer privacy safeguards.
  - Promote universal service.

- Promote and protect the ability of any entity, including municipalities and cooperatives, to aggregate electricity purchases on behalf of retail customers located in one or more states.

- Provide for Federal and state bodies to jointly develop a **model code of conduct regarding inter-affiliate transactions.**

- **Promote clean energy and a cleaner environment** by extending and expanding tax credits for renewable energy to include open loop biomass (including agricultural and municipal solid waste) waste heat and waste gases and provide a refundable production and investment tax credit for municipal and cooperative utilities renewable energy projects, including open loop biomass.

- **Correct elements of the tax code that impede the development of competitive markets,** including:
  - private use restrictions on bonds issued by publicly-owned utilities;
  - the 85/15 restrictions on the income of rural electric cooperatives;
  - disincentives to utility transfer of assets to form an RTO;
  - tax treatment of nuclear decommissioning funds associated with the transfer of existing assets; and
  - tax treatment of transmission interconnections (CIAC).

- **Limit any grandfathering provision** to state competition programs enacted prior to the date of enactment.

- **Remain silent on the subject of stranded costs** recognizing existing federal and state authority over these issues.

- **Federally-owned electric customers should be able to purchase power on a competitive basis pursuant to other applicable laws.**

AARP
American Public Power Association
American Chemistry Council
City Utilities of Springfield, Missouri
Consumer Federation of America
Consumers for Fair Competition
Dynegy
EDS
Electricity Consumers Resource Council
Electric Power Supply Association
Enron
Indiana Municipal Power Agency
Integrated Waste Service Association
Madison Gas & Electric
Minnesota Power

Missouri River Energy Services
National Association of State Utility Consumer Advocates
National Energy Marketers Association
Northern California Power Agency
Ohio Municipal Electric Association
PG&E Corp.
Portland General Electric
PPL
Transmission Access Policy Study Group
UtiliCorp
Wisconsin Electric Power Company
Wisconsin Public Power Inc.

Residential Customers First: 20 Principles to Protect Universal Service
for Residential Customers

Electricity is a basic necessity of modern life. It contributes to the well-being of all Americans. Over the years, the nation's utilities have provided reliable service at rates among the lowest in the world. Both residential and industrial customers have benefited from the rules and regulations set up by the federal, state and local bodies that oversee a utility's operations.

Currently, Congress and the states are considering legislation to deregulate the industry in ways that may subject residential customers to harm. One of the glaring weaknesses exhibited to date in the majority of the legislative offerings is the absence of adequate provisions to expand and maintain universal service.

In an effort to bring attention to the importance of universal service for residential consumers, a set of principles has been developed. The undersigned consumer, environmental, senior citizen, and agricultural groups believe that these principles (attached) must be part of any legislation which seeks to restructure and/or deregulate the electric utility industry.

We are actively working to address other critical problems in many of the proposals aimed at restructuring the electric utility industry. Among the issues that need to be addressed by Congress are: the removal of language suggesting a date certain, unfair recovery of stranded costs, strong consumer protection provisions, adequate safeguards to avoid market power dominance and environmental protections.

However, our goal today is to fill a void and inject a discussion of universal service into the debate. The undersigned organizations strongly believe that without provisions reflecting the "Principles", residential customers and in many cases, low-income residential customers, will not only be deprived of the benefits of competition in the industry, but may in fact be hurt.

We ask you to give strong consideration to the "20 Principles to Protect Universal Service for Residential Customers" and if you have any questions, please contact any one of us.

Consumer Federation of America	National Consumer Law Center	Public Citizen
National Consumers League	National Grange	Consumers Union
USPIRG	AARP	Communities for Action
Reform Organization of Welfare	Action Coalition of Englewood	National People's Action
National Association of Community Action Agencies	South Austin Coalition Community Council	
Sunflower Community Action	Massachusetts Senior Action Council	

RESIDENTIAL CUSTOMERS FIRST:
20 PRINCIPLES TO PROTECT UNIVERSAL SERVICE FOR RESIDENTIAL CUSTOMERS

THERE MUST BE A COMMITMENT TO UNIVERSAL SERVICE
1. The Federal government must set guidelines for universal service and the states must implement them.
2. Federal and state regulators each must have sufficient authority to execute their responsibilities in establishing and maintaining universal service.

BASIC, UNIVERSAL SERVICES MUST INCLUDE:
3. Hook-up on a non-discriminatory basis.
4. A firm, uninterruptible supply of power sufficient to sustain household needs.
5. Fair priorities for restoration of service following an outage.
6. A default provider must secure firm power at the lowest reasonable cost for all customers not served by other providers.

RATE AND PRICING PRINCIPLES FOR UNIVERSAL SERVICE MUST BE ESTABLISHED
7. Rates must be just, reasonable and affordable.
8. Rates must be based on average residential use, not time-of-day peak.
9. Residential customers shall bear no more than a fair share of fixed costs.
10. Residential customers shall not subsidize utility entry into new, competitive businesses and sufficient mechanisms to detect, prevent and correct such subsidization shall be established.
11. Rates should not be deaveraged or rebalanced, to prevent shifting of costs onto those customers without competitive alternatives.

SERVICE ASSISTANCE MUST BE PROVIDED TO LOW INCOME PERSONS AND AN ADEQUATE UNIVERSAL SERVICE FUND MUST BE ESTABLISHED
12. Hook-up assistance and bill payment assistance must be provided to low-income persons and difficult-to-serve areas, funded by a universal service fund.
13. All producers and classes of customers must contribute to the universal service fund equitably on a per-kilowatt-hour basis, and producers must not shift their contributions onto customers.
14. A Federal-State Joint Board or similar entity should have oversight over the establishment and implementation of universal service.

CONSUMER PROTECTIONS ASSOCIATED WITH MAINTENANCE OF UNIVERSAL SERVICE MUST BE ESTABLISHED AND ENFORCED
15. Information on individual customers, such as name, address, telephone number, energy usage and payment history must not be divulged to anyone unless the customer has provided knowledgeable written consent.
16. Electricity suppliers must have adequate business office hours & 24-hour phone coverage.
17. Customers must be protected from dangerous or unreasonable disconnection.
18. Customers must receive fair and clear billing statements with uniform labels that disclose price, price variability, length of contract, supply mix and environmental pollutants and must have access to fair dispute resolution procedures; suppliers must comply with fair marketing practices including standardized disclosure requirements for price, terms and conditions and environmental claims.
19. Customers must have a private right-of-action, including class actions, for enforcement and damages.
20. There must be effective licensure and regulatory systems to protect against unscrupulous marketers and suppliers and their practices.

The Large Public Power Council

1050 Thomas Jefferson Street NW, 7th Floor, Washington, DC 20007 • 202/298-1856 (phone) • 202/338-2381 (fax)

www.lppc.org

MARCH 28, 2001

TO: THE HONORABLE SPENCER ABRAHAM
SECRETARY OF ENERGY

FROM: THE LARGE PUBLIC POWER COUNCIL

RE: DEVELOPMENT OF A NATIONAL ENERGY STRATEGY

The Large Public Power Council (LPPC) is comprised of 20 of the nation's largest community-owned and operated electric systems from across the country. Our members own and operate over 44,000 megawatts of electric generation. In addition, we own and operate in excess of 24,000 circuit miles of transmission lines, and serve major urban centers as well as suburbs and rural communities. America's public power systems serve 15% of the nation's electricity customers.

LPPC strives to provide reliable power to its consumers at reasonable rates. Our members supply their customers using both their own generation and purchased power. On behalf of our customers, we want to see the transmission system used efficiently and that new generation and transmission can be constructed.

Today, public power systems in the West and elsewhere are working diligently to serve customers without interruption, although many in the West have had significant rate increases and those in California have been subject to blackouts despite the fact that they have had adequate supplies to serve their customer loads. As the national supply/demand situation becomes increasingly strained, it is critically important that existing capacity be preserved and that every effort be made to encourage increased conservation and to develop new resources.

This memo has been developed to offer to you and the other members of The White House Energy Task Force our observations and recommendations as you develop a comprehensive energy strategy for this nation.

We are offering to the Department and the Task Force our recommendations on mid- to long-term energy needs as well as short-term actions to mitigate the Western energy crisis. Throughout this memorandum, we have included a number of "case studies" or programs that have been initiated by our member companies to increase supply or to achieve energy savings. Some of these case studies may prove to be useful illustrations of the kinds of policies you may be recommending in your energy policy.

Austin Energy (TX) • Chelan County PUD (WA) • Colorado Springs Utilities (CO) • JEA (FL) • Knoxville Utilities Board (TN)
Lower Colorado River Authority (TX) • Memphis Light, Gas and Water Division (TN) • Municipal Electric Authority of Georgia (GA)
Nebraska Public Power District (NE) • New York Power Authority (NY) • Omaha Public Power District (NE) • Orlando Utilities Commission (FL)
Puerto Rico Electric Power Authority (PR) • Sacramento Municipal Utility District (CA) • Salt River Project (AZ)
Santee Cooper (SC) • Seattle City Light (WA) • Snohomish County PUD (WA) • Tacoma Public Utilities (WA)

FUEL DIVERSITY: THE FOUNDATION FOR AN ENERGY POLICY

At the outset, the LPPC offers its strong support for fuel diversity as an essential component of a national energy policy. Our membership comes from areas of the country with access to generation from coal, hydropower, natural gas, biomass, wind, solar, landfill methane and nuclear energy. We strongly support enhanced, environmentally responsible development of all of these resources.

We further believe that sound energy and environmental policy should flow from this "fuel diversity" strategy and encourage the Administration to employ such an approach in development of the national energy strategy.

MID- TO LONG-TERM ENERGY POLICY NEEDS

ENCOURAGING EFFICIENCY AND CONSERVATION

LPPC members believe that measures that will help our customers and us achieve greater energy efficiency and conservation are essential to a national energy policy. Investments in energy efficiency can reduce price pressures, energy consumption and operating costs. In addition, efficiency and conservation measures help protect the environment and can encourage more responsible energy usage. Programs that reduce consumption by end users are important as are methods designed to improve energy efficiency in production.

CASE STUDY
A Nationally Recognized Efficiency Program

The Green Building Program, developed and administered by Austin Energy, an LPPC member, is a good example of the type of energy-efficiency conservation program we advocate. The program promotes green building practices, provides technical assistance and incentives, and rates buildings. Through this program, the city achieves significant avoided emissions and customer consumption rates which are 25% lower than in comparable cities.

CASE STUDY
Efficiency Where It's Needed

Sacramento Municipal Utility District (SMUD) has developed a wide variety of environmental programs to reduce energy demand. These programs include educational services and advice, incentives for installation of energy-efficient appliances and lighting, incentives to build efficient homes and buildings, promotion of solar water heating, and planting of shade trees. These services cost approximately $11 million each year, but they have provided approximately $129 million in savings for customers, as well as giving SMUD better load management and decreasing the need for new supply.

CASE STUDY
Investing In Efficiency

New York Power Authority (NYPA) invests $100 million yearly in energy efficiency and clean energy technologies. There are energy conservation projects in public facilities, fuel cell and solar power installations, as well as 180,000 high efficiency refrigerators in New York City public housing.

COAL – AMERICA'S SECURE SUPPLY

We believe that the Administration should advocate a diverse generation mix. Coal, in particular, is an essential part of this country's fuel mix. Coal accounts for over 50% of electric generation and approximately 23% of all the energy consumed. The continued use of coal decreases reliance on high-priced natural gas and helps maintain a stable price for the production of electricity. LPPC supports incentives and Federal funding for coal burning and advanced clean coal technology to work toward reducing conventional (health-based) pollutants and substantially improve power plant efficiency.

CASE STUDY
Construction Of New Coal-Fired Generation And Fuel Diversity

Jacksonville Electric Authority (JEA) has committed to replace older generating units with state-of-the-art clean fossil generation as well as renewable energy sources (such as landfill methane and fast growing trees or other biomass vegetation). In one instance, JEA, with DOE cost sharing, is installing an innovative clean coal technology, Circulating Fluidized Bed (CFB) combustors, that will increase energy output 2 ½ times while reducing 98% of SO_2 emissions and lowering NOx emissions to 40 percent lower than EPA new source performance standards. JEA has also set as a company goal that 7.5% of total generation will be from renewable energy sources by the year 2015.

RENEWABLE ENERGY SOURCES

LPPC members generate electricity from wind, solar and hydropower and other renewable resources. These renewables are a growing part of a diverse fuel mix.

The need for federal incentives for renewable energy production is crucial. Renewable energy has demonstrated its place in contributing to the diversity of the nation's fuel mix in an environmentally friendly manner. Production of renewable energy is becoming increasingly competitive; however, continued research to address environmental problems and to expand energy choices is an appropriate and essential role for government.

CASE STUDY
Voluntary Targets To Add Renewable Energy

The Austin City Council has resolved that 5% of Austin's electricity should come from renewable energy sources by the year 2005. To meet this goal, Austin Energy has contracted with companies to build facilities to specifically provide green power for Austin. That will include bringing online 17 wind turbine generators and 4 landfill gas energy projects. The landfill projects will be located in Austin, Houston, San Antonio, and near Dallas. In addition, Austin Electric currently has 28 solar panel installations in operation.

CASE STUDY
Renewables For Arizona

Arizona's Salt River Project (SRP) has committed to a four-year, $29 million program to fund renewable energy resources. This significant investment was made without raising prices for SRP customers. The program is investing in solar power, landfill gas projects, photovoltaics, fuel cells, and other renewable resources. For example, SRP installed a thermal hybrid electric solar dish (THF Sun Dish) at the Salt River landfill. This device is a first of its kind, generating electricity from the sun and using landfill gas when the sun is not shining.

CASE STUDY
Wind In Texas

The Lower Colorado River Authority (LCRA) in Texas is involved in three wind energy projects. In 1995 LCRA became a partner in the first commercial wind project in the state by agreeing to purchase 35 megawatts of power from the Texas Wind Power Project located in West Texas. The LCRA sells 10 megawatts of the power to the City of Austin. In 1999 the LCRA agreed to purchase another 7.5 megawatts of wind-generated electricity from the Delaware Mountain Wind Farm also in West Texas. And last year LCRA announced an agreement to purchase 50 megawatts from the Indian Mesa Wind Farm, another West Texas project that is scheduled to come on line later this year. LCRA's commitment to wind power as well as hydroelectric power makes it the largest supplier of renewable energy in Texas.

NUCLEAR ENERGY

Nuclear energy, as well, is a valued part of a diverse energy supply. LPPC strongly supports moving quickly to resolution of the current nuclear waste storage issue. We also advocate a "forward looking" policy that includes a future for nuclear energy.

HYDRO PROCESS NEEDS REFORM

Hydroelectric facilities provide just under 10% of total U.S. electric energy. In the West and parts of the Northeast electricity from hydro facilities constitutes a major part of the generation mix. Hydro is emission free, has no fuel cost, and because of its virtually

instantaneous start-up capability, provides an invaluable operating reserve. The existing regulatory system does not recognize these values.

The current Federal licensing/relicensing process for non-federal hydro projects is time-consuming, expensive, and extremely complex, creating an unworkable framework that imposes significant costs in terms of time, resources, and capital upon a utility. A relicensing case averages 8 years and must be started many years in advance of the expiration of the license. One recent class of relicensed projects suffered a reduction of 8% of their generating capacity due to restrictions imposed during relicensing. Facilities are often required to make extensive and costly modifications and retrofits as a result of the relicensing process. Administrative costs of relicensing proceedings and licensing conditions imposed in these proceedings threaten to eat up much of the national economic benefit derived from continued operation of existing hydro projects. Reform of the current system is desperately needed.

CASE STUDY
Improvements Threatened By Bureaucracy

For example, New York Power Authority (NYPA) recently sought to upgrade its Niagara hydroelectric project. Advances in technology in the past 20 years would allow for increased efficiency and greater output in times of need. NYPA planned to upgrade all 13 turbines at the project at a cost of $292 million, which would create a 10-15% increase in output. However, those efficiency upgrades subjected the company to a lengthy permitting review, costing both time and money.

EMERGING TECHNOLOGIES

LPPC recommends that the Administration support emerging technologies such as fuel cells and increased use of established technologies such as distributed generation (DG). At this time, there are significant constraints on the use of DG technologies. But the use of DG technologies by users during the West Coast crisis has shown itself to enhance reliability of the grid as a whole as long as there is careful coordination with power providers.

CASE STUDY
Load Management

Nebraska Public Power District (NPPD) has developed an extensive load management program with its wholesale customers. Reductions come from shifting on-peak electricity demand by farmers and their electric pump irrigators to off-peak periods using rate incentives. These efforts have offset more than 350 MW, or 15% of NPPD's firm demand resulting in more efficient use of current generation, reduced power costs to farmers and deferral of new construction.

ENSURING THAT POWER IS DELIVERED WHERE AND WHEN IT IS NEEDED

Enhanced transmission must go hand-in-hand with enhanced generation. The current transmission system was not built to serve today's wholesale power markets. With larger volumes being moved in an increasingly competitive market over transmission paths that were not anticipated at the time the existing grid was built, suppliers are sometimes faced with bottlenecks in and constraints on the transmission system. LPPC believes that a national energy policy should include provisions that will streamline siting authority and encourage technologies to upgrade existing transmission systems. There are technologies in existence today that can optimize existing transmission; these must be deployed. Provisions to remove federal tax constraints (contained in Secs. 957 – 959 of Senator Murkowski's energy bill), including private use, are necessary to ensure that all utilities can use existing power lines as efficiently as possible, and to ensure that new transmission can be built.

Addressing the issue of supply, LPPC urges the earliest feasible construction of a natural gas pipeline from Prudhoe Bay, Alaska to the lower 48 states. The addition of this pipeline to the infrastructure would serve to greatly expand the existing supply, dampen soaring prices, and would bring natural gas to both the West Coast and directly into the middle of the country. The President's energy policy should emphasize quick action to begin construction of the Alaskan Natural Gas Transportation System.

To build well-functioning wholesale markets in the Southeast, we believe that the Tennessee Valley Authority's (TVA) role in these markets must be addressed by Congress. TVA cannot remain unregulated and still retain its legal rights to be sole supplier to the Tennessee Valley electric power distributors.

The cost-based rates offered by Power Marketing Administrations to their customers must be preserved to maintain stability in the marketplace.

As you are well aware, public power systems do not operate for profit--these systems pass through all power costs to customers. In the face of extremely volatile electricity and natural gas prices consumers are finding locally controlled, cost-based public power systems an increasingly attractive option.

ENVIRONMENTAL POLICIES SHOULD FLOW FROM AN INTEGRATED ENERGY STRATEGY

LPPC would encourage the Administration to explore an integrated approach to regulation of emissions from power generation as part of the national energy strategy. As previously stated, environmental policy should be based upon a national energy strategy that ensures a diversified fuel mix, which includes increasing use of coal, natural gas, nuclear, hydro, wind, biomass, landfill gas, solar and other renewable technologies.

CASE STUDY
Good Energy And Environmental Policy

Jacksonville Electric Authority (JEA) is in the process of developing both biomass and landfill gas projects. The landfill gas project, located in west Jacksonville, currently flares the equivalent of 2000 KW of landfill gas and is expected to generate 7000 KW by 2006. JEA is also negotiating a 65 MW renewable energy power purchase contract. This closed-loop biomass project will generate power by combusting a renewable fuel source (e-grass) in a rotary gassifier.

Recognizing that health related air quality concerns exist which may warrant reductions in emissions of NOx, SO_2, and mercury, LPPC believes that an integrated approach to these pollutants is a reasonable and feasible path for the power generation sector. LPPC believes that a comprehensive multi-pollutant control strategy addressing these emissions should occur over a reasonable period of time, provide regulatory certainty, and encourage the use of flexibility mechanisms. In addition, these future emission controls should not be layered on top of existing regulatory requirements. The Clean Air Act must be modified to streamline existing unit-by-unit emissions control requirements that are barriers to flexible implementation.

LPPC also believes that EPA and FERC disincentives to generation upgrades and improvements should be eliminated. The permitting process for upgrades in technology and efficiency improvements must be streamlined and impediments removed.

Public power recognizes that concern over climate change could be a factor in shaping future energy choices.

LPPC supports a flexible approach to mitigating greenhouse gas concentrations in the atmosphere but does not support regulation of carbon as a pollutant.

The President's recently stated position on addressing climate change is an approach embraced by LPPC. We also do not believe that "the government should impose on power plants mandatory emission reductions for carbon dioxide, which is not a 'pollutant' under the Clean Air Act." LPPC supports the use of technologies, market-based systems, and innovative options for addressing concentrations of greenhouse gases in the atmosphere. A climate change strategy must provide full flexibility to achieve goals or targets.

Continued research and sound science is fundamental to the development of an integrated energy strategy. Flexibility must be a key ingredient, meaning that fuel diversity and all activities and measures resulting in an ultimate reduction or stabilization of greenhouse gas concentrations in the atmosphere should be recognized. Such activities or measures may include, but are not limited to, increased use of cleaner burning and renewable technologies, conservation and efficiency initiatives, carbon sequestration projects and mitigation of other greenhouse gases.

CASE STUDY

Flexible Environmental Compliance Works

For example, although Seattle City Light generates most of its electricity through hydropower, it has committed to offsetting the greenhouse gas emissions from any fossil fuel generation, owned or purchased. In order to meet this obligation, Seattle City Light is soliciting offsets through the Oregon Climate Trust, a non-profit organization, which has developed an extensive list of criteria for project approval and will seek renewable energy, transportation, efficiency, and sequestration projects in the U.S. and other countries.

WHAT CAN THE ADMINISTRATION DO TO HELP MITIGATE THE WESTERN ENERGY CRISIS AND PREVENT FUTURE CRISES?

LPPC members in the West, from Sacramento to Washington State, are facing serious effects from the failed California restructuring initiatives, combined with generation and transmission shortages. In the near term, we support efforts by our Western members to find regional solutions that can counteract the irrational pricing that has been created by this environment. This means aggressive mitigation of inappropriate exercise of market power, efforts to better coordinate new increments of supply and a holistic, regional approach to the problem.

SHORT-TERM RELIEF OPPORTUNITIES

First and foremost, the Administration should insist that FERC take whatever steps are needed to ensure that wholesale rates are "just and reasonable". Unless the volatile Western market is stabilized consumers and policy makers are likely to lose confidence in electric competition.

Wholesale electric prices in the Western US are far higher than any we would expect to see in a competitive market, averaging 29¢/kwh in December and 27¢/kwh in January. FERC's March 9th refund order required refunds of less than 2% of California's $5.2 billion January wholesale power bill.

The Department of Energy should also ask FERC to put effective market power mitigation measures in place for this summer, when prices are likely to be even higher than last winter's. If we hope to revitalize a healthy market system we will have to do a better job of restoring order, and sanity, to the Western electricity market. And, in our view, any responsible action to deal with wholesale prices has to allow the wholesale purchaser to pass through actual purchased-power costs to customers.

These temporary measures will be necessary until additional generating resources come on line and a competitive market emerges.

STREAMLINING: SUPPLY OPTIONS

At this time, it is essential for the Administration to undertake a thorough review of the various processes that serve as a barrier to constructing new power generation and to the more efficient use of existing power generation. There are multiple, sometimes duplicative permitting requirements for new generation facilities. Recognizing the need for the most efficient and transparent permitting system, LPPC would urge the Administration to review permitting requirements for new and existing generation and, where possible, require that the processes be streamlined, conducted in parallel and expedited to the maximum degree feasible.

In light of recent events, the Administration should also step up the dialogue with Canada and Canadian generators to facilitate access to and guarantee supplies of fairly priced Canadian power and natural gas. Managing that relationship may prove important to a balanced supply.

In addition, DOE should request that FERC give the absolute highest priority to its review and approval of the three gas pipeline expansion projects into California. New generation cannot operate without gas to supply it.

REMOVING TAX CONSTRAINTS TO TRANSMISSION

Prompt resolution of the electric power industry's federal tax issues is necessary to permit full utilization of the existing transmission grid and remove transmission bottlenecks that constrain expanding transmission capacity. Congress and the Administration need to revise the current "private use" tax rules that keep public power from making transmission facilities financed with tax exempt bonds fully available for use by investor-owned utilities and private businesses and to deal with the private use constraints on generation. This issue is an extremely important energy policy matter, which can be resolved quickly and can deliver more efficient transmission and generation immediately.

WHOLESALE MARKET STRUCTURE

While the debate has temporarily shifted away from national wholesale market structure issues, we believe it remains essential to build robust wholesale markets, with independent RTOs, a national reliability organization to enforce mandatory reliability standards, and appropriate authority for FERC to address market power and mergers. Today's market chaos cries out for these solutions.

These are our thoughts and recommendations, Mr. Secretary, as you and The White House Task Force attempt to shape a long-overdue national energy strategy.

We appreciate being encouraged to offer our input to the Task Force and pledge our continued cooperation and support of your endeavors.

Large Public Power Council
Critical Issues Brief
March, 2001

LPPC

- The Large Public Power Council comprises 20 of the nation's largest community-owned and operated electric systems from across the country. Our members own and operate over 44,000 megawatts of generation. In addition, we own and operate in excess of 24,000 circuit miles of transmission lines, and serve major urban centers as well as outlying suburbs and rural communities.

ENERGY POLICY

- Across the country, LPPC members are seeking to meet their customers' needs by ensuring adequate generation, ensuring that the transmission system is used efficiently and ensuring that new generation and transmission can be constructed.

- We strongly support fuel diversity. Our membership comes from areas of the country with access to coal, hydropower, natural gas, renewable and nuclear energy. LPPC supports enhanced, environmentally responsible development of all of these resources. Environmental policy should flow from this "fuel diversity" strategy.

- Within the energy policy debate, we will look to these measures to ensure fuel diversity:

  - Clean Coal technology funding

  - Reform of the hydro relicensing process combined with appropriate classification of hydro as a renewable

  - Incentives for the electric power industry to develop additional renewable and alternative fuels and ensure parity for public power

- Enhanced transmission must go hand-in-hand with enhanced generation.

  - New, improved transmission planning and streamlined siting mechanisms are needed to assure adequate transmission.

  - Provisions to remove federal tax constraints (contained in Secs. 957 – 959 of Senator Murkowski's energy bill), including private use, are necessary to ensure that all utilities use new and existing power lines as efficiently as possible, and to ensure that new transmission can be built. Power must be delivered where it is needed without being hindered by an outdated tax code.

- LPPC members also encourage measures that will help us and our customers achieve greater energy efficiency and conservation.

- LPPC members in the West, from Sacramento to Washington State, are facing serious effects from the failed California restructuring initiatives, combined with generation and transmission shortages. In the near term, we support efforts by our Western members to find regional solutions that can counteract the irrational pricing that has been created by this environment.

- The debate has temporarily shifted away from national wholesale market structure issues. It remains essential to build robust wholesale markets, with independent RTOs, a national reliability organization to enforce mandatory reliability standards, and appropriate authority for FERC to address market power and mergers.

- To build a well-functioning wholesale market, Tennessee Valley authority's role in the Southeastern markets must be addressed by Congress. And, the cost-based rates offered by PMAs to their customers must be preserved to maintain stability in the marketplace.

ENVIRONMENTAL POLICY

- Environmental policy should be based upon a national energy strategy that ensures a diversified fuel mix, which includes increasing use of coal, natural gas, nuclear, hydro, wind, biomass, landfill gas, solar and other renewable technologies.

- LPPC supports a multi-part, flexible approach to reducing carbon concentrations in the atmosphere.

- LPPC does not support regulation of carbon as a health-based (NAAQS) pollutant.

- Continued research and sound science is fundamental to the development of a carbon strategy.

- A carbon strategy must provide full flexibility to achieve goals or targets. Flexibility means that all activities and measures resulting in an ultimate reduction or stabilization of greenhouse gas emissions should be recognized. Such activities or measures may include, but are not limited to, increased renewable technologies, conservation and efficiency improvement initiatives, carbon sequestration projects and mitigation of other greenhouse gases.

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FREDERICK L. WEBBER
PRESIDENT AND CEO

American Chemistry Council
Good Chemistry Makes It Possible

April 13, 2001

The Honorable Spencer Abraham
Secretary of Energy
1000 Independence Avenue, S.W.
Washington, DC 20585

Dear Secretary Abraham:

Congratulations on your leadership at the Department of Energy in developing a National Energy Policy.

The business of chemistry is America's leading exporting industry and one of the nation's largest consumers of energy. We have been hit hard by recent price increases. We stand ready to assist you in your efforts to increase supply, expand existing infrastructure and improve efficiency toward the goal of lower costs and greater energy independence.

We are concerned about possible amendments to the Public Utility Regulatory Policies Act (PURPA). Existing PURPA provisions include mandatory connection to the grid, backup power at non-discriminatory prices and the sale of excess power. Without these protections, many of our industry's cogeneration facilities and the manufacturing plants they serve will be at the mercy of electric utilities that view them as direct competitors.

The business of chemistry is heavily reliant upon cogeneration (the sequential generation of electricity and heat) for many of our production processes. The statutory provisions of PURPA have allowed our industry and others to utilize cogeneration within markets dominated by monopoly electric utilities. Any changes to the provisions impacting qualified facilities (QFs) will undermine your efforts to solve our nation's electric generation shortage by jeopardizing existing power generation and limiting the potential for certain new generators.

The benefits of cogeneration were made evident by a report issued by the Congressional Research Service last year that included these findings:

- The energy savings from cogeneration in 1997 was equivalent to the electricity use of 11.2 million households, or 5 percent of U.S. oil imports.

- NO_x emissions savings from cogeneration in 1997 were equivalent to eliminating the exhaust of more than 39 million vehicles.

- Without cogeneration made viable through PURPA, U.S. electric utility emissions of SO_2 would have been 18 percent higher in 1997, with NO_x emissions 14 percent higher.

For these reasons, we would ask that the Administration oppose any attempts to modify existing PURPA language and thus jeopardize our industry's cogeneration contribution to the nation's electricity supply.

Sincerely,

Frederick L. Webber
President and CEO

cc: Joe Kelliher
Sr. Advisor to the Secretary
Dept. of Energy

Andrew Lundquist
Executive Director of the
National Energy Policy Development Group

Karen Knutson
Deputy Director of the
National Energy Policy Development Group

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STATEMENT OF CRAIG MOYER,
MANATT, PHELPS & PHILLIPS
SUBMITTED ON BEHALF OF
THE WESTERN INDEPENDENT REFINERS ASSOCIATION
BEFORE THE HOUSE SUBCOMMITTEE ON ENERGY AND AIR QUALITY
MARCH 30, 2001

On behalf of the Western Independent Refiners Association (WIRA), in my capacity as counsel for WIRA, I am pleased to provide this statement for the record providing an overview of the current challenges facing small business refiners (refiners with fewer than 1500 employees and less than 155,000 barrels per day total capacity). WIRA is a trade association of small and independent refineries on the West Coast. At this time, ten small independent refineries continue to operate on the West Coast, nine in California and one in Tacoma, Washington. In California, these refineries are located in each of the three refining areas within California. One is located in the San Francisco Bay area. One is located in the Bakersfield area of the Southern San Joaquin Valley and the remaining facilities operate in the Los Angeles Basin. Small independent refineries employ thousands of people and each company pays millions of dollars in taxes, even after excluding income taxes. WIRA members produce a full slate of petroleum products including everything from gasoline, diesel fuel and jet fuel to asphalt, lube oil and specialty petroleum products. At this time, when it so clear that all domestic energy sources should remain viable and that no domestic source should be overlooked, I believe that it is important for this Subcommittee to understand the role of small refiners to the energy supply of our nation.

The Pro-competitive Role of the Small Refiners

Small and independent refiners have long been recognized as an important competitive force in the refining sector. Individually, each small refiner represents a relatively small share of the petroleum product marketplace. Cumulatively, however, their impact is substantial. Their pricing competition pressures the larger integrated companies to lower prices to the consuming public. Without that competition pressure, consumers will pay more. For example, in early 1991, Amoco shut down a 40,000 barrels per day refinery in Casper, Wyoming, and gasoline prices jumped almost 10 cents per gallon. In California, the Attorney General concluded that after five small refiners shut down because they could not manufacture California's cleaner burning gasoline, the loss of competition cost consumers hundreds of millions of dollars. Through experience, we know that when small refiners leave the marketplace, prices go up and consumers suffer.

Congress and many agencies, including the Environmental Protection Agency ("EPA") and the California Air Resources Board ("CARB"), have long recognized the importance of the independent refining sector to maintaining a competitive market for petroleum products. For example, after EPA promulgated rules limiting the sulfur content of diesel fuel to 500 parts per million effective October 1, 1993, Congress recognized the implications of this rule on small diesel refiners and authorized the issuance of acid rain credits to small diesel refiners pursuant to Section 410 (h) of the

1990 Clear Air Act amendments. Because of the important pro-competitive impact of small refiners, CARB, an agency that has promulgated perhaps the most stringent fuels regulations in the Country, has provided separate treatment for small refiners in virtually every fuels regulation it has passed since 1988. In its two most recent fuels rulemakings, EPA has authorized separate treatment for small business refiners, as well. Even the South Coast Air Quality Management District, an agency leading the nation and perhaps the world, in stringent air quality regulations, authorized separate treatment for small refiners in its recently promulgated Rule 431.1 regulating diesel fuel.

In addition to maintaining competition, small and independent refiners often supply other petroleum products not otherwise available in certain areas. For example, small refiners manufacture 100 percent of California's grade 80-aviation fuel, aliphatic solvents, and JP-4 jet fuel. Small refiners also manufacture 100 percent of the asphalt produced in southern California and much of the off-road diesel fuel. Half of the diesel fuel produced in the San Joaquin Valley, California's farm belt, is refined by small refiners.

Small business refiners also fill a critical national security function. For example, in 1998 and 1999, small business refiners provided almost 20 percent of the jet fuel used by U.S. military bases. This adds up to almost 500 million gallons of jet fuel supplied each year under defense contracts between the government and small business refiners.

Challenges Facing the Industry

Today, approximately 124 refineries are operating in this country. About 25 percent are small, independent refiners. Small business refiners are primarily owned by U.S. citizens including privately held businesses and one farmer cooperative.

As Secretary of Energy Spencer Abraham noted in recent comments to the United States Chamber of Commerce, the number of American refineries has been cut in half since 1980. Many of these were small business refiners unable to meet the challenges of poor refining margins and expensive regulations. Meanwhile, no new refinery has been built in the United States in over 25 years and regulatory requirements limit the ability of existing refineries to expand capacity. Government regulations require the production of more than 15 types of gasoline. Existing refineries are operating at capacity resulting in more frequent unplanned shutdowns. Every small refiner forced from the marketplace increases our vulnerability. Given the foregoing, one must agree with Secretary Abraham that we "have a refining industry strained to capacity, leaving us dangerously vulnerable to regional supply disruptions and price spikes."

Some of the major challenges facing small refiners in today's market include:

- Small refiners are large users of electricity and natural gas. The remarkably high prices of these inputs are affecting the small refiners.
- The phase out of MTBE as an oxygenate will lead to increased costs as reformulations are required.

- Access to crude oil is an ongoing challenge, as large companies merge and the remaining mega-companies are not consistently willing to supply small refiners.
- Wastewater treatment controls and stationary source air quality controls have become increasingly stringent, thus raising costs for small refiners.

The challenges facing small refiners continue. Not only must they compete head to head with some of the largest companies on the planet, but also they must comply with increasingly stringent government regulations. Of most concern: on January 18, 2001, the EPA published new regulations, which create **new standards for levels of sulfur in highway diesel fuel** beginning in June, 2006. Under the new regulations, refiners must meet a stringent new standard of 15 parts per million sulfur limit for most on-road diesel volume ("Ultra Low Sulfur Diesel Fuel"). Small refiners produce about four percent of the Nation's diesel fuel and in some regions produce over half of the diesel fuel. In the final rule, EPA stated regarding the diesel sulfur standards "that small business refiners would likely experience a significant and disproportionate financial hardship in reaching the objectives of our diesel fuel sulfur program." In the final rule, EPA agreed with the final Small Business Administration report regarding the diesel sulfur standards "that small business refiners would likely experience a significant and disproportionate financial hardship in reaching the objectives of our diesel fuel sulfur program." However, EPA has made no provision to assist small business refiners in financing the mandated capital expenditures.

The new regulations also will make it even less likely that new refineries will ever be built. With the exception of one small topping facility in Alaska, no new refinery has been built in the United States for almost 20 years. Existing facilities are operating at full sustainable capacity. Operational demands imposed by the new regulations will result in a reduction of on-road diesel production. At the same time, U.S. consumer demand for diesel fuel, as forecast by the Energy Information Administration, is expected to grow by 6.5 percent between now and 2007. If small business refiners are eliminated from diesel production, supply shortages will become even more likely. Therefore, it is important to seek methods to reimburse small business refiners for their costs in meeting these new government imposed mandates, which endanger their long-term economic viability.

EPA estimates that small business refiners will incur average capital costs of $14 million per facility to meet the new diesel regulations. For some facilities, the cost will be substantially more.

In addition, costs to produce low-sulfur gasoline and to comply with other regulations will add significantly to capital requirements in approximately the same time frame. Such capital investments are significantly beyond the financial capability of facilities operated by small business refiners, whose total investment is dwarfed by these requirements. On top of the initial required capital expenditures, the related increases in operating costs could equal or exceed the refineries' historical annual profits, and thus, imperil the viability of these important US businesses.

While WIRA does not oppose the regulation, and is fully committed to compliance, we believe that national energy policy should take into account the importance of the small refiners and should include proposals for mitigating the impact of this regulation. Without such provisions, some small business refiners will shut down and all will struggle to meet the mandated expenditures. Such a policy ignores the important role of the small business refiner in the U.S. energy market. The result of such a policy will have serious consequences for our country.

Conclusion: U.S. Government Energy Policy Should Recognize the Role of the Small Refiner

The challenges to small business refiners, including the need for mitigation for the impact of otherwise appropriate environmental policies, should be recognized by the Congress and should be addressed in overall U.S. energy policy. If this does not occur, and small refiners go out of business, the competitive fabric of the U.S. oil and gas industry will be irreparably damaged.

Thank you for your consideration of these important comments.

Western Independent Refiners Association

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Impacts of EPA Regulation

Small Refiners Are Key

- WIRA represents refiners with fewer than 1,500 employees and less than 155,000 barrels per day total capacity. WIRA members produce a full slate of petroleum products including everything from gasoline, diesel and jet fuels to asphalt, lube oil and specialty petroleum products.
- Today, approximately 124 refineries are operating in this country. About 25 percent are small, independent refiners. Small business refiners are primarily owned by U.S. citizens, including privately held businesses and one farmer cooperative.
- Small independent refineries employ thousands of people and each company pays millions of dollars in taxes, even after excluding income taxes.
- In addition to maintaining competition, small and independent refiners often supply other petroleum products not otherwise available in certain areas. For example, small refiners manufacture 100 percent of California's grade 80-aviation fuel, aliphatic solvents, and JP-4 jet fuel. Small refiners also manufacture 100 percent of the asphalt produced in southern California and much of the off-road diesel fuel. Half of the diesel fuel produced in the San Joaquin Valley, California's farm belt, is refined by small refiners.

Refining Capacity is at a Maximum

- As Secretary of Energy Spencer Abraham noted in recent comments to the United States Chamber of Commerce, the number of American refineries has been cut in half since 1980. Many of these were small business refiners unable to meet the challenges of poor refining margins and expensive regulations. Meanwhile, no new refinery has been built in the United States in over 25 years and regulatory requirements limit the ability of existing refineries to expand capacity.
- Government regulations require the production of more than 15 types of gasoline. Existing refineries are operating at capacity resulting in more frequent unplanned shutdowns. Every small refiner forced from the marketplace increases our vulnerability. Given the foregoing, one must agree with Secretary Abraham that we "have a refining industry strained to capacity, leaving us dangerously vulnerable to regional supply disruptions and price spikes."

Federal Regulations Burden Small Refiners Disproportionately

- On January 18, 2001, the EPA published new regulations, which create new standards for levels of sulfur in highway diesel fuel beginning in June 2006. Under the new regulations, refiners must meet a stringent new standard of 15 parts per million sulfur limit for most on-road diesel volume ("Ultra Low Sulfur Diesel Fuel").
  - Small refiners produce about four percent of the Nation's diesel fuel and in some regions produce over half of the diesel fuel.

- In the final rule, EPA stated regarding the diesel sulfur standards "that small business refiners would likely experience a significant and disproportionate financial hardship in reaching the objectives of our diesel fuel sulfur program." In the final rule, EPA agreed with the final Small Business Administration report regarding the diesel sulfur standards "that small business refiners would likely experience a significant and disproportionate financial hardship in reaching the objectives of our diesel fuel sulfur program."
- However, EPA has made no provision to assist small business refiners in financing the mandated capital expenditures.

Mitigation Required

- Unmitigated, the new regulations will make it even less likely that new refineries will ever be built. Therefore, it is important to seek methods to reimburse small business refiners for their costs in meeting these new government imposed mandates, which endanger their long-term economic viability.
- EPA estimates that small business refiners will incur average capital costs of $14 million per facility to meet the new diesel regulations. For some facilities, the cost will be substantially more.
- Costs to produce low-sulfur gasoline and to comply with other regulations will add significantly to capital requirements. Such capital investments are significantly beyond the financial capability of facilities operated by small business refiners, whose total investment is dwarfed by these requirements. On top of the initial required capital expenditures, the related increases in operating costs could equal or exceed the refineries' historical annual profits, and thus, imperil the viability of these important US businesses.
- WIRA does not oppose the diesel fuel regulation. We are fully committed to compliance. We believe, however, that national energy policy should take into account the importance of the small refiners and should include proposals for mitigating the impact of this regulation. Without such provisions, some small business refiners will shut down and all will struggle to meet the mandated expenditures. Such a policy ignores the important role of the small business refiner in the U.S. energy market. The result of such a policy will have serious consequences for our country.

Kelliher, Joseph

Release

(12)

From: Linda Stuntz [lstuntz@sdsatty.com]
Sent: Wednesday, February 14, 2001 12:37 PM
To: Kelliher, Joseph
Cc: Dave Nevius; David Cook
Subject: Reliability Legislation

tmp.htm

Dave Nevius, David Cook and I would appreciate the opportunity to visit with you sometime soon to talk about reliability legislation. As you may know, Senator Gordon Smith has introduced the Gorton bill of last year (S. 172). Mr. Wynn and others have introduced legislation similar to the Wynn Bill of last year, which includes RTO coordination amendments (H.R. 312). I understand that you are working with the Vice President's task force on a Comprehensive Energy Strategy. We would like to talk with you about making the NERC reliability legislation a part of that Strategy, and address any questions you may have about our legislative effort.

Dave would also be prepared to talk about the status of NERC's summer assessment, and how things look to them.

I know you are swamped. Please just let me know when you could fit us in, and we will be there.

thanks and best regards,
Linda

Tripodi, Cathy

(13)

From: Kelliher, Joseph
Sent: Sunday, June 10, 2001 2:40 PM
To: Tripodi, Cathy
Subject: FW: Statement on Energy Policy/Implementation

Importance: High

NEP Statement.doc

-----Original Message-----
From: Jim Ford [mailto:Fordj@api.org]
Sent: Tuesday, March 20, 2001 2:06 PM
To: Kelliher, Joseph
Subject: Statement on Energy Policy/Implementation
Importance: High

As we discussed, please find attached a short paper on the U.S. oil and natural gas supply situation, together with a list of steps that the Administration could take at once to alleviate the situation. I will send
you additional materials under separate cover.

Jim Ford
Federal Relations Director
American Petroleum Institute
682-9210
fordj@api.org <mailto:fordj@api.org>

Kelliher, Joseph

From: Jim Ford [Fordj@api.org]
Sent: Tuesday, March 20, 2001 2:06 PM
To: Kelliher, Joseph
Subject: Statement on Energy Policy/Implementation

Importance: High

NEP Statement.doc

As we discussed, please find attached a short paper on the U.S. oil and natural gas supply situation, together with a list of steps that the Administration could take at once to alleviate the situation. I will send
you additional materials under separate cover.

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Overview: U.S. Oil and Natural Gas Supply Situation

Energy has not been an overriding government priority for some time. The energy problems of the past year have showcased the price we are having to pay for the failure to develop an effective national energy policy. Time is not on our side. U.S. energy concerns must have a place at the decision-making table and the energy impact of government decisions must be carefully weighed.

Crude Oil

The Department of Energy has forecast U.S. energy consumption between 1999 and 2020. While natural gas rises from 23 percent of consumption in 1999 to 28 percent in 2020, oil stays about the same (40 percent in 1999 and 39 percent in 2020). Seventy percent of petroleum consumed in the U.S. is for transportation. Most recent energy studies agree that this share is likely to continue well into this century – even with strong increases in energy efficiency and a rapid infusion of new technology.

However, under the best of circumstances, the U.S. will become more and more dependent on oil imports. This dependency now amounts to about 57 percent of U.S. oil demand. DOE projects that 64 percent of oil demand will be met by imports in 2020. In order to ensure reliable and secure sources of oil, we have no choice but to diversify the sources of our supplies, both domestic and foreign, and increase both. The U.S. oil and natural gas industry has the advanced technology needed to find and produce oil and gas in an environmentally safe manner.

However, domestically, access to federal government lands has become an acute problem. For example, from 1983 to 1997, access to federal lands in eight Western states declined by more than 60 percent – and that does not reflect major land withdrawals since 1997. At the same time, the U.S. oil and gas industry's ability to compete for opportunities abroad have been threatened by two U.S. policies: the alarming tendency to use unilateral economic sanctions against oil producing countries as an instrument of foreign policy – despite the evidence that they don't work -- and the adverse tax treatment of foreign source income of U.S. oil and gas companies.

– Refinery Capacity and Utilization. Even if we obtain all the oil we need, our energy supply would still be under an enormous strain. While environmental requirements now in place are giving us the most environmentally-sensitive fuels ever manufactured, these requirements have drastically reduced refinery flexibility and further tightened the U.S. supply situation.

The U.S. refinery system is basically maxed out. Capacity utilization averaged 92.6 percent in 2000. At peak levels of seasonal demand, it topped 95 percent. This compares to an average capacity utilization rate in other industries of 82 percent. Refinery capacity utilization is high because our capacity is below what it was 20 years ago. Recent increases have not kept up with the growth in demand – so we've had to import products. But we cannot import much more, because tightening fuel specifications and the proliferation of so-called boutique fuels make it much more difficult for foreign producers to meet the U.S. demand for refined products.

-- Regulatory Burden. Increased regulation of fuels and refineries is a major reason why refinery capacity has not kept up with demand. We haven't built a major new refinery in this country in 20 years. Moreover, complex, time-consuming permitting requirements greatly limit the ability of refiners to increase capacity. They also inhibit efforts to increase pipeline capacity. The pipeline system in the U.S. was designed decades ago to handle some 70 percent of liquid fuel transportation, but the increased demand and proliferation of fuels is making this system increasingly inadequate.

-- Boutique Fuels. The Clean Air Act Amendments require state implementation plans (SIPs) under which individual metropolitan areas can create their own fuels to meet clean air requirements. There are 15 different types of gasoline now in use because of clean air requirements. This balkanization of fuels greatly reduces refinery flexibility. The reduced flexibility means that relatively minor disruptions and down-time for maintenance can have a much more disruptive impact on the flow of supply.

Natural Gas

Natural gas is a clean, safe, efficient and reliable fuel. Consequently, demand is rising, particularly as the fuel of choice for new power plants. Approximately 85 percent of the natural gas consumed in the U.S. is produced domestically. Most of the remainder comes from Canada. The landmark natural gas study issued a year ago by the National Petroleum Council – a DOE advisory committee – projected that producers would have to invest about $658 billion between 1999 and 2015 to meet the growth in gas demand.

The growing demand for natural gas underscores the urgent need for increased access to potentially gas-rich government lands. However, most government lands with the best prospects for new gas discoveries are off limits to development: 100 percent of resources offshore on both coasts; 56 percent of the eastern Gulf of Mexico resources; and 40 percent of the Rocky Mountain region resources.

Needed: A National Energy Policy

What is needed from government decision-makers is a serious effort to address U.S. energy problems and shape a fair and effective national energy policy. That is why API welcomes the energy policy initiatives now underway in both Congress and the Administration. However, it took some 25 years to get into today's energy situation – and the problems will not be solved overnight. So it is extremely important that energy be fully represented at the government decision-making table and that the energy impact of environmental and other decisions be fully considered.

After more than two decades of inaction, the American public can no longer afford the luxury of not coming to grips with U.S. energy needs, while maintaining a clean environment. The nation can do both. Meeting U.S. energy needs and protecting the environment are both critical to our nation's continued economic growth – and to achieving the future prosperity and well-being we all seek.

Available Administrative Actions on National Energy Policy in the Oil and Natural Gas Sectors:

Require Executive Branch agencies to avoid significant adverse energy consequences in proposing regulatory and other administrative actions.

Require Executive Branch agencies to review existing rules and policies and revise them as necessary to eliminate significant adverse energy consequences.

Make energy policy a key assignment for a senior White House aide.

Direct the Interior Department, in consultation with other federal land management agencies and the Energy Department, to complete the inventory of federal oil and natural gas resources mandated by the 2000 amendments to the Energy Policy and Conservation Act.

Direct the Energy Department, in consultation with the federal public land management agencies, to identify administrative barriers to timely exploration and development of federal oil and gas resources and take steps to remove those barriers.

Provide a "strike force" to complement existing staff of public land management agencies to immediately reduce the tremendous backlog of pending applications for permits to develop federal oil and gas leases, to revise resource management plans, and to complete required environmental analyses. Ultimately, provide adequate staffing/resources to maintain and expedited timetable for these activities.

Direct the Interior Department to expand royalty-in-kind (RIK) programs onshore and offshore, with any RIK oil to be transferred into the Strategic Petroleum Reserve.

Maintain the December 2001 schedule for OCS Lease Sale 181.

Grant California's request to the Environmental Protection Agency for a waiver from the Clean Air Act's oxygen mandate for reformulated gasoline.

Ensure that the first annual report from the advisory group to EPA on technological feasibility (equipment and construction resources) of the on-road diesel sulfur rule includes meaningful conclusions and recommendations that the agency can use quickly to decide whether modifications should be made to avoid adverse fuel supply and price consequences.

Direct the Labor Department, in consultation with the Energy Department, to develop recommendations for a job-training program designed to fill employment needs in the oil and natural gas industry.

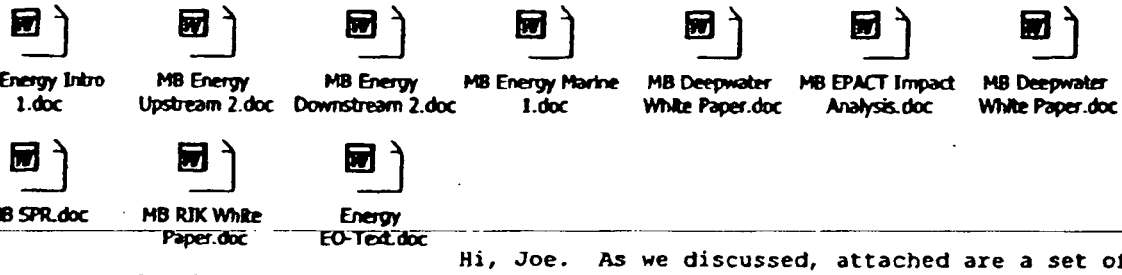
Direct the Office of Management and Budget to determine whether fiscal 2001 funds could be reprogrammed to increase grants to states for low-income heating and weatherization assistance.

Direct OMB to determine whether funds could be reprogrammed to ensure full funding of U.S. Coast Guard nautical charting programs and Corps of Engineers harbor maintenance activities to ensure that tankers can move needed petroleum products safely and expeditiously.

Kelliher, Joseph

From: Jim Ford [Fordj@api.org]
Sent: Tuesday, March 20, 2001 2:51 PM
To: Kelliher, Joseph
Subject: Recommendations on National Energy Policy

Importance: High



Hi, Joe. As we discussed, attached are a set of papers on national energy policy recommendations. Much of it is designed to be self-explanatory. The last document is a suggested executive order to ensure that energy implications are considered and acted on in rulemakings and other executive actions. This draft has DOE as the coordinator. Probably also need to make energy a major portfolio item for a senior White House aide.

Let me know if you have questions or additional info needs. Thanks.

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RECOMMENDATIONS FOR A NATIONAL ENERGY POLICY

The United States is approaching the end of a year in which consumers have experienced a heating oil price spike followed by a gasoline price spike and higher prices for all petroleum products due to significantly higher crude oil prices, and, most recently, escalating prices for natural gas. These fuel supply challenges facing the United States over this past year are only the most recent reminders that our nation has fallen far short of addressing our energy needs in a sustainable, strategic fashion.

At the same time that energy usage continues to rise, the industry's capability to meet energy demands faces increased limitations that make supplying the marketplace ever more difficult. U.S. crude oil production peaked in 1970 at 9.6 million barrels per day (B/D). Over the first six months of 2000 it has averaged 5.9 million B/D – 39% less than 30 years ago. In the face of tremendous demand, U.S. production of natural gas declined 14 percent between 1973 and 1999. The recent natural gas study by the National Petroleum Council projects that producers will have to invest about $650 billion in upstream capital between 1999 to 2015 to meet the growth in natural gas demand. U.S. refinery utilization is at historically high levels, nearly 96 percent for the third quarter of this year, while refinery capacity has declined from a high of 18.6 million barrels per day in 1981 to 16.5 million barrels per day in 2000, leaving no room for continued economic growth.

If we are to continue America's economic growth and continue creating jobs and wealth across the country, we must have the affordable, reliable energy that fuels our economy and supports our way of life. Congress must develop cost-effective mechanisms for increasing domestic supply. At the same time, environmental concerns must be addressed, and these can be best dealt with through free-market-based incentives, which provide the best foundation for cost-effective solutions. While the U.S. has a strong strategic and economic interest in a vibrant domestic oil and gas industry, we also need a wide diversity of international supplies. Recognizing that 90 percent of the world's proven oil reserves are in the hands of national oil companies, and more than two-thirds of those are in the volatile Middle East, U.S. energy security is best served by U.S. companies being competitive participants in the international energy arena. The recommendations that follow address each stage of oil and gas supply – both domestic and foreign: exploration and production, processing and refining, transportation and distribution. If adopted, they will enhance a strong, productive U.S. energy infrastructure that can supply abundant, affordable energy in an environmentally responsible manner.

UPSTREAM ISSUES

- COASTAL ZONE MANAGEMENT ACT AND OFFSHORE E&P

16 U.S.C. § 1452 states that in administering their coastal zone programs, states shall give priority consideration to the siting of energy facilities associated with the exploration, development, and production of the mineral resources of the Outer Continental Shelf. Yet, U.S. Department of Commerce administration of consistency determinations under the Coastal Zone Management Act has made the law a tool for unnecessary delay and duplicative regulation of offshore exploration and production. For example, the regulations impose consistency determinations on the Interior Department's Minerals Management Service's five-year OCS plans and other pre-leasing activities that have no direct impact on a state's coastal zone.

Recommendation: Amend the Coastal Zone Management Act to ensure that valid offshore natural gas and oil lease rights are protected in the CZMA process and direct the Department of Commerce to administer state consistency programs to ensure priority consideration is given to responsible oil and natural gas development in state consistency determinations.

Reaffirm the primary authority of the Minerals Management Service under the Outer Continental Shelf Lands Act and the National Environmental Policy Act for regulating offshore oil and gas leasing, exploration, development, and production activities and assure that other federal agencies and state agencies do not impose duplicative requirements.

- ARCTIC NATIONAL WILDLIFE REFUGE

Open the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) to oil and natural gas exploration and development. ANWR is America's most promising area for the discovery of giant oil and gas resources in North America.

Recommendation: The Alaska National Interest Lands and Conservation Act 16 USC Sec. 3101 et seq. provides for development of oil and natural gas resources from ANWR upon an affirmative vote of both the House of Representatives and the Senate.

- DEEPWATER ROYALTY RELIEF

To encourage investment in domestic oil and gas resources on the Outer Continental Shelf, Congress enacted the Deepwater Royalty Relief Act of 1995 to suspended the payment of royalties for specific initial quantities of oil and gas produced from the OCS in water depths greater than 200 meters. This incentive was very successful and resulted in billions of

dollars in additional revenue to the United States and a significant increase in oil and natural gas production of from OCS waters.

Recommendation: Amend Title III of Public Law 104-58, "Alaska Power Administration Sale Act," Section 304, to permanently adopt the deepwater royalty relief automatic suspension volume provisions that expired November 2000 for all deepwater production.

- ROYALTY IN KIND

The Minerals Management Service's recent RIK pilot projects in Wyoming, Gulf of Mexico and in Texas state waters have successfully demonstrated the Agency's ability to take royalties in kind, rather than value. RIK saves the taxpayer money through reduction in administrative costs and reduction of the uncertainty inherent in paying royalties in value that often results in costly agency and court disputes.

Recommendation: Amend the Outer Continental Lands Act, 43 USC Sec. 1331 et seq. and the Mineral Leasing Act of 1920, 30 USC Section181 et seq. to promote RIK wherever practicable and clarify that the MMS' existing authority to use RIK includes the authority to pay transportation and other post-production costs.

- SAFE DRINKING WATER ACT

Hydraulic fracturing is a vital technology that is used in over half of the natural gas wells in the country. Current litigation over the regulation of this activity could dramatically increase the cost of this technology and limit natural gas production in some areas of the country. Clarification is needed for the Safe Drinking Water Act's underground injection control provisions to exclude coverage of hydraulic fracturing. This would allow states to continue to regulate hydraulic fracturing under their oil and gas regulatory programs.

Recommendation: Amend Section 1421(d)(1) of the Safe Drinking Water Act (42 U.S.C. 300h(d)) to clarify that the term underground injection does not include hydraulic fracturing similar to S. 724 in the 106th Congress.

- STRATEGIC PETROLEUM RESERVE

The Strategic Petroleum Reserve was created by Congress to provide for limited supplies of oil in time of supply disruptions, thereby enhancing national security. In 1998, when oil prices were low, the Secretary of Energy used federal royalty oil taken in kind by the Minerals Management Service and transferred to DOE for filling the SPR. This is a practice that should be strongly encouraged.

Recommendation: Amend Part B of Title I of the Energy Policy and Conservation Act (42 U.S.C. § 6232 et seq.) to strongly encourage the

Secretary of Energy to fill the Strategic Petroleum Reserve during periods of stable oil prices to the equivalent of 90 days of imports for use in national emergencies only, using federal royalty oil, taken in-kind.

UPSTREAM ISSUES REQUIRING CONGRESSIONAL OVERSIGHT

- ACCESS TO GOVERNMENT LANDS FOR NATURAL GAS AND OIL DEVELOPMENT

In developing a National Energy Policy, Congress should direct the Administration, perhaps in oversight hearings, to adhere to existing congressional mandates under the Federal Land Policy Management Act and related Acts requiring agencies to give balanced consideration to multiple competing uses of federal land. Oil and natural gas development is an important use of federal lands and experience has shown that it does not have to be excluded for environmental or aesthetic purposes.

Direct the U.S. Forest Service and the Bureau of Land Management to revise their planning regulations to make natural gas and oil leasing a priority. For example:

Recommendation: Direct the Administration to conduct a thorough and comprehensive review of offshore leasing moratoria, allowing leasing and production of natural gas and oil in all but the most sensitive environmental areas.

Recommendation: Direct the U.S. Forest Service and the Bureau of Land Management to revise their resource planning regulations to make natural gas and oil leasing a priority in order to meet the Nation's critical energy needs.

12/20/2000

DOWNSTREAM ISSUES

- FEDERAL OXYGEN MANDATE AND MTBE

The Clean Air Act mandates a minimum amount of oxygen in federal reformulated gasoline. This requirement indirectly requires the use of oxygenates such as MTBE and ethanol. The oxygen mandate is becoming environmentally obsolete and should be repealed so refiners can reduce the use of oxygenates in the most cost-effective manner. Consumers are best served when refiners have the flexibility to blend gasolines that meet federal and state environmental requirements and vehicle needs. Mandates that prescribe a recipe for gasolines constrain the nation's fuel production and usually result in increased refiner and consumer costs, as demonstrated by the outcry over the price and supply problems caused by the required introduction of a new reformulated gasoline in the Midwest this past summer.

Recommendation: Legislation is needed for a waiver of the oxygen content requirement for reformulated gasoline as follows:

Section 211(k)(1) of the Clean Air Act (42 U.S.C. 7545(k)(1)) is amended—

(1) by striking `Within 1 year after the enactment of the Clean Air Act Amendments of 1990,' and inserting the following:

`(A) IN GENERAL- Not later than November 15, 1991,'; and

(2) by adding at the end the following:

`(B) WAIVER OF OXYGEN CONTENT REQUIREMENT-

`(i) IN GENERAL- Notwithstanding any other provision of this subsection, upon notification by the Governor of a State to the Administrator, a Governor may waive paragraphs (2)(B) and (3)(A)(v) with respect to gasoline sold or dispensed in the State.

`(ii) TREATMENT AS REFORMULATED GASOLINE - In the case of a State for which the Governor invokes the waiver described in clause (i), gasoline that complies with all provisions of this subsection other than paragraphs (2)(B) and (3)(A)(v) shall be considered to be reformulated gasoline for the purposes of this subsection.'.

- DOWNSTREAM REGULATORY ENVIRONMENT

Oil and natural gas will continue to be the most versatile, affordable and abundant fuels for the foreseeable future. Their use is critical to sustaining U.S. economic prosperity and is compatible with environmental goals. At the same time, the nation's energy infrastructure is near capacity and significant expansion will be needed over the next twenty years. The energy impacts of administrative actions must be considered in order to create a climate that encourages capacity expansion and provides the necessary certainty enabling capacity expansion to occur in a sensible and cost effective manner.

Recommendations: The following items need to be incorporated into energy legislation:

- Administrative actions impacting energy supply and conservation must rely on sound science and the application of full cost-benefit and risk analyses and should be performance-based.

- Certainty in scope, timing, requirements and interpretation are needed so that necessary capital improvements can be made with the knowledge that further changes will not result in wasted investment.

- The permitting process must be streamlined where possible to ensure that capacity expansions are not delayed, and state and local agencies should provide the necessary resources to process permits expeditiously.

- Refiners must have a minimum of 4 years lead time for finalization of requirements for implementation of a significant refinery investment.

- Administrative actions should be consistent with sound business practices, and deadlines for meeting new requirements should be based on costs, benefits and practicality.

- Measures should be coordinated to avoid overlap or conflict and companies should be provided adequate time to recover capital costs before additional controls are imposed.

- Requirements should be better defined and consistently applied. Increasing capacity to produce more fuel to satisfy growing demand is impeded by the uncertainty introduced by complexity, lack of clarity and retroactive reinterpretation. Punitive, selective and unpredictable enforcement policies discourage and unfairly penalize sound

compliance efforts (e.g., EPA New Source Review enforcement initiative).

- The energy implications of all federal government actions should be explicitly identified and considered before a law or regulation is enacted. These actions should be carefully reviewed in light of their energy implications and rejected if their adverse impact on energy supplies is not justified by the other benefits.

- ASSURING ADEQUATE AND AFFORDABLE FUELS

The National Petroleum Council published a study in June 2000 entitled "U.S. Petroleum Refining – Assuring the Adequacy and Affordability of Cleaner Fuels." The study assessed government policies and actions that would affect product supply and refinery viability. The study concludes that the refining and distribution industry will be significantly challenged to meet the increasing domestic light petroleum product demand with the substantial changes in fuel quality specifications recently promulgated and currently being considered.

The NPC study contains specific recommendations and finding related to petroleum product supply and future refinery viability. The Secretary of Energy, in consultation with the governmental departments and federal agencies, shall report to the applicable committees in the houses of Congress on the findings and conclusions of the NPC study and on the adjustments to federal policy required to implement those findings and conclusions. This report shall include but not be limited to the following:

- Policy changes needed within federal departments and agencies to implement the findings and conclusions of the NPC study

- Identification of needed changes that cannot be accomplished through Executive Branch action alone; and recommendations that, if passed and signed into law, would accomplish the changes needed.

- RESTRICTIVE PETROLEUM MARKETING LEGISLATION

Congress should refrain from introducing any petroleum marketing legislation that interferes in the contractual arrangements between suppliers and their customers. This type of legislation injects inappropriate and unwarranted governmental controls on the marketplace and often has unintended consequences.

Recommendation: Reject any proposals that comprehensive NEP legislation include marketing restrictions.

MARINE TRANSPORTATION ISSUES

- **Support increased marine-related funding for the Army Corps of Engineers (dredging), and NOAA (nautical charting). Congress should direct NOAA to develop a plan to eliminate the backlog of hydrographic survey data within five years.**

The safe and efficient movement of goods through the United States' port system, including crude oil and petroleum products, requires that channels be dredged and maintained at safe depths on a consistent basis.

Recommendation: Among all the marine infrastructure activities, dredging programs which facilitate commerce must be given a priority for funding, and such funding must continue even while the harbor maintenance tax issue is discussed and debated.

Safe navigation also requires accurate and current navigational charts for U.S. waterways. To date, however, these programs have been and continue to be so severely underfunded that it will take the National Oceanic and Atmospheric Administration (NOAA) 20 years to eliminate the survey backlog. Hydrographic survey data, which is the basis for nautical charts, should be collected using the latest hydrographic survey equipment. Some hydrographic data still being used is over 40 years old. All available resources, both public and private, should be fully utilized, without limits placed on the sources of certifiable survey data.

Recommendation: Funding for this effort should be increased so that the survey backlog can be eliminated in the shortest possible timeframe consistent with sound resource allocation and management principles.

- **Take the Harbor Maintenance Fund off budget and earmark it exclusively for harbor services.**

An off budget trust fund, which is not subject to annual appropriation, is critical to ensure that funds are consistently available for meeting marine infrastructure needs and that funds collected for that purpose are not diverted to any other program. The Harbor Maintenance Trust Fund should be taken off budget and used exclusively for harbor services. This would guarantee resources are available to meet the growing needs of maritime commerce.

Revenue earmarked for the Harbor Maintenance Trust Fund should be obtained from a variety of sources. Because of the broad benefits provided by the United States' waterways, general revenues should contribute to the trust fund in large measure. A user fee covering a portion of harbor maintenance costs is also acceptable if: the fees are paid by all beneficiaries, the size of fees are commensurate with the cost or value of the service rendered, and the beneficiaries have input into prioritization and fund allocation.

Recommendation: Enact H.R. 111 of the 106th Congress to accomplish these purposes.

- Provide the U.S. Coast Guard with adequate funding to preserve its leadership role within the International Maritime Organization (IMO). Congress should clarify that the Coast Guard has the authority to develop US positions and represent the US before the IMO.

A national energy policy needs to recognize the international nature of oil transportation. Accordingly, the US government should look to and support broad-based international solutions to marine regulatory issues. The International Maritime Organization (IMO) is the appropriate forum for discussions of such issues as vessel operations, ballast water management, marine air emissions, and vessel scrapping.

Recommendation: As the U.S. representative to IMO, the US Coast Guard should be provided the resources necessary to fulfill its role and to provide leadership within IMO as a prominent national maritime authority.

- **Reform the Jones Act and permit ships built in foreign countries to engage in coastwise trade transporting crude oil and petroleum products.**

The US needs to remove barriers to the timely replacement of aging domestic tonnage and stimulate a robust domestic fleet.

Recommendation: This can be accomplished by S. 1032 of the 106th Congress to reform the build America-only provisions of the Jones Act for large, ocean going, self-propelled tankers.

Deep Water Royalty Relief Should be Extended

The recently expired program was a great success

The Deepwater Royalty Relief Act of 1995 was extremely successful in promoting exploration in water depths greater than 200 meters in the Gulf of Mexico. Annual deepwater oil production has increased from some 60,000 barrels per day to close to 450,000 barrels per day under the Act.

MMS is proposing sharp curtailments in that program

With the expiration of the Act in 2000, MMS has great latitude in deciding administratively what royalty relief, if any, to grant in future lease sales. Under this authority, MMS is proposing to sharply reduce the automatic suspension volumes at all depths, and to completely eliminate them in the 200 to 800 meter range. In lieu of automatic suspensions, MMS proposes to expand the scope of its discretionary relief program, allowing any marginal post-2000 lease to apply for discretionary royalty relief. It justifies this reduction in the program on several grounds, including: (a) that the installation of infrastructure already in place and learning from past development have so improved the economics of prospective projects that less relief is justified, and (b) that oil and gas prices are now far higher than they were in the past, and likely to remain so, further reducing the need for such relief.

The premises of these cutbacks are unfounded

Neither of these premises is justified. For example, movements into ultradeep waters will require new "pioneering" efforts, and new sources of development risk, from those faced in projects to date. There is no reason to presume these risks to be smaller than those faced to date. Furthermore, while it is true that the establishment of infrastructure at properties developed to date improves the economics of new leases in their vicinity, the adequacy of that existing infrastructure hinges largely on the size and distribution of the remaining undiscovered resource base, which is currently in the process of very significant reassessment by both industry and MMS itself. Finally, while it is true that current prices are at recent highs, it is only two years since they were at historic lows. Price volatility is the mark of this industry, and there is no basis for presuming that recent price increases are permanent. Moreover, there is no reason for government concern that high prices will generate a windfall to industry since both the previous and proposed programs provide price thresholds above which royalty suspension does not apply.

Any discretionary relief program will be heavily discounted

MMS offers an expanded discretionary relief program as a substitute for the automatic volumes which had been provided by the Act. While industry anticipates improvements in the administration of the current system, which has been so cumbersome as to produce only 7 applications and 4 approvals since 1995, until an acceptable track record is established, the promise of discretionary relief will tend to be heavily discounted by prospective bidders.

Cutbacks in royalty relief are poorly timed

Deepwater oil and gas are becoming an increasingly important share of our domestic energy prospects. An industry sponsored study by Advanced Resources International indicates that continuation of the system of royalty relief provided by the Act would stimulate development of an incremental one million barrels of oil equivalent per day of domestic oil and gas supply within the next decade. This new supply is desperately needed. It is a poor time to begin reducing the incentives to realization of that potential.

DOE Review of Agency Actions Affecting Energy

Statutory Language – Title I – General Provisions to Enhance Domestic Production

The Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.) is amended as follows:

"All federal agencies shall include in any proposed major federal actions that could significantly affect energy supplies, distribution, or use, a statement on:

(i) the energy impact of the proposed action,
(ii) any adverse energy effects which cannot be avoided should the proposal be implemented, and
(iii) alternatives to the proposed action.

Prior to taking final action on any such major federal action, the agency shall consult with, and obtain the concurrence of, the Secretary of Energy. The Department of Energy is directed to establish an office within the Department to review agency actions for energy impacts, and make recommendations to the Secretary. The Secretary shall finalize all Department review decision within a reasonable time certain, but in no case more than 180 days."

Notes

1. The draft language is modeled on NEPA. But other models could be used; provisions contemplating consultation between lead agency and another agency appear in CZMA, CAA, etc. Depending on the sought after result, would an executive order be sufficient (e.g., old executive order on regulatory taking)?

2. One threshold question: What kinds of agency actions are covered? Under NEPA "major federal actions" embraces agency programmatic decisions (e.g., DOI 5-year OCS leasing program) as well as company specific decisions (e.g., leases, permits, etc.). Individual companies are likely to balk at another link in the decision making chain for their permit applications and the like, especially where they have market competitors. Industry more likely to embrace a process which creates a hurdle for agency policy initiatives that are not energy-related at their core (e.g., EPA environmental regulations affecting fuels, facility siting). Bottom line: any new legislation could define "major federal action" any way desired and need not adopt the NEPA definition as it has been construed so expansively by the courts.

3. Another threshold question: How much authority should DOE have? As drafted, the language above quietly requires DOE concurrence, in effect giving DOE veto power. A variation would be to create a presumption of concurrence, rebuttable only if the action-initiating agency provides compelling reasons for rejecting any DOE recommendations in whole or in part. Yet another, even milder, variation would require only that the lead agency consult with DOE without requiring, even presumptively, any DOE recommendations.

4. Another threshold question: How much detail should be prescribed in the DOE review process? For example, should the process include time limits (perhaps with a default)? Require for DOE recommendations, which if satisfied would earn concurrence? Outline a

process by which the lead agency deals with DOE recommendations? Provide for judicial review?

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Deepwater oil and gas are becoming an increasingly important share of our domestic energy prospects. An industry sponsored study by Advanced Resources International indicates that continuation of the system of royalty relief provided by the Act would stimulate development of an incremental one million barrels of oil equivalent per day of domestic oil and gas supply within the next decade. This new supply is desperately needed. It is a poor time to begin reducing the incentives to realization of that potential.

The Strategic Petroleum Reserve (SPR) is the Nation's first line of defense against an interruption in petroleum supplies. It is an emergency supply of crude oil stored in huge underground salt caverns along the coastline of the Gulf of Mexico.

Decisions to withdraw crude oil from the SPR during an energy emergency are made by the President. In the event of an energy emergency, SPR oil would be distributed by competitive sale. Although used for emergency purposes only once to date (during Operation Desert Storm in 1991), the SPR's current size - nearly 565 million barrels - and the U.S. government's stated policy to withdraw oil early in a potential supply emergency make the SPR a significant deterrent to oil import cutoffs and a key tool of foreign policy.

Origins

The need for a national oil storage reserve has been recognized for at least five decades. Secretary of the Interior Harold Ickes advocated the stockpiling of emergency crude oil in 1944. President Truman's Minerals Policy Commission proposed a strategic oil supply in 1952. President Eisenhower suggested an oil reserve after the 1956 Suez Crisis. The Cabinet Task Force on Oil Import Control recommended a similar reserve in 1970. The 1973-74 oil embargo underscored the need for a strategic oil reserve. The cutoff of oil flowing into the United States from many Arab nations sent economic shockwaves throughout the Nation. In the aftermath of the oil crises, the United States established the SPR. Congress passed the Energy Policy and Conservation Act, 42 USC 6201 et seq. (EPCA), in 1975 to attempt to address numerous energy security issues. EPCA contained a provision to create and fill a Strategic Petroleum Reserve (SPR) "capable of reducing the impact of severe energy supply disruptions." Congress set a goal to store a 90-day supply of crude oil (one billion barrels of crude oil in 1975).

President Ford signed EPCA on December 22, 1975. The Gulf of Mexico was a logical choice for oil storage sites since more than 500 salt domes are concentrated along the coast, and it is the location of many U.S. refineries and distribution points for tankers, barges and pipelines. In April 1977, the government acquired several existing salt caverns to serve as the first storage sites. Construction began in June 1977, and the first oil was soon delivered to the SPR.

Current Status

Today, the SPR holds more than 565 million barrels of crude oil, the largest emergency oil stockpile in the world. Together, the facilities and crude oil represent more than a $20 billion national investment.

Fill was suspended in FY 1995 to devote budget resources to refurbishing the SPR equipment and extending the life of the complex through at least the first quarter of the next century. In 1999, fill was resumed in a joint initiative between the Departments of Energy and the Interior to supply royalty oil from Federal offshore tracts to the Strategic Petroleum Reserve.

Proposal

Presidents have made findings that increasing oil imports can threaten the Nation's national security. The history of the last 30 years demonstrates that energy price and supply volatility can result in significant, deleterious economic conditions.

Under the Outer Continental Shelf Lands Act and the Mineral Leasing Act, the Secretary of the Interior is authorized to take the federal government share of oil and gas production extracted from federal lands as a percentage share of the commodity produced. Further, those statutes permit the Interior Secretary to transfer the federal government's production share to the Secretary of Energy or Defense, as well as to other agencies.

In 1998, during a period of lethargic crude oil markets, the Secretaries of Energy and Interior entered into an agreement for the federal share of crude oil production to be deposited, directly or indirectly, into the Strategic Petroleum Reserve rather than being sold into the market, with the proceeds being deposited into the U.S. Treasury.

This program agreement successfully added to the volumes stored in the SPR. The program was suspended when the Secretary of Energy found that the federal share of oil production would be better utilized to be sold into domestic markets to augment supplies flowing to domestic refineries as world supplies tightened and upward price volatility pervaded energy markets.

Language

At the appropriate place insert the following:

The Secretary of the Interior shall enter into an agreement with the Secretary of Energy to transfer title to the federal share of crude oil production from federal lands for use at the discretion of the Secretary of Energy in filling the Strategic Petroleum Reserve during periods of crude oil market stability. The Secretary of Energy may also use the federal share of crude oil produced from federal lands for other disposal within the Federal Government, as he may determine, to carry out the energy policy of the United States.

Royalty in Value

Description: Under the terms of federal oil and gas lease agreements and current statutes, the federal government can take its royalty share of oil and gas production "in value" (money) or "in kind" (production). When royalty is taken in value, the point of valuation is the value at the well on the lease where the oil or gas was produced. On March 15, 2000, the MMS finalized new oil valuation regulations which became effective on September 1, 2000. The goals of the new rules as articulated by MMS were, certainty, simplicity and fairness. The final regulations were immediately challenged by the oil and gas industry in two cases filed in the D.C. District Court. Industry strongly opposes the new rules on a number of grounds, the most important being that they impose expanded obligations on oil and gas lessees which were not part of and are greater than their existing lease obligations with the government. Among other things, the new obligations impose valuation away from the lease, a "duty to market", increased costs of transportation, and contain affiliate resale valuation issues. In a recent D.C. District Court case, Judge Royce Lamberth rejected MMS' implied duty to market argument. In his opinion, Judge Lamberth stated, "as explained above, the court finds that an implied duty to market downstream is not consistent with the terms of the existing leases." This decision has been appealed by the MMS to the Federal Circuit. If the District Court rules similarly in the challenges to the oil valuation rules, the MMS would then potentially be required to re-write the rules to conform to Judge Lamberth's opinion. Further, the oil valuation rules are relevant to royalty taken in kind (RIK) as the benchmark for measuring the cost/benefit of RIK initiatives will be measured against royalty taken in value and thus, the bar for RIK will be raised by the new RIV regulations.

Status: The Senate and House held numerous hearings on MMS' proposed oil valuation rules last year and imposed a multi-year moratorium prior to the rules going final in March. The MMS is in the process of implementing the new rules and training internal personnel. As discussed above, the industry has challenged the rules in D.C. District Court.

Key Issues/Decisions: Should the MMS obtain a legal opinion from the new DOI Solicitor regarding valuation away from the lease and specifically on the duty to market issue? Should the Department engage in a review of transportation issues? Should the MMS have further policy discussions regarding decisions using an indexing methodology to approximate lease value and the issuance of valuation determinations? Should DOI revisit the issue of comparable sales and tendering?

Options:

- Obtain a legal opinion from the new DOI solicitor regarding the Department's position on the duty to market and the best methodologies to obtain value at the lease.
- After a review of Judge Lamberth's decision obtain a legal opinion from the new DOI solicitor regarding oil and gas transportation issues and consider whether to prosecute the appeal.
- Consider rewriting the gas transportation rules on appeal to the Federal Circuit and the oil valuation rules being challenged in light of the D.C. District Court decision.

Timing/Milestones: First 100 days.

Royalty In Kind

Description: Under the terms of federal oil and gas lease agreements and current statutes, the federal government can take its royalty share of oil and gas production "in value" (money) or "in kind" (production). In FY2000 federal royalties brought 5.2 billion dollars to the U.S. Treasury. Industry strongly supports the federal government taking its royalties in kind because of RIK's certainty, simplicity, administrative costs savings, avoidance of disputes and costly litigation and potential for increased revenues to the U.S. Treasury. Enabling legislation to provide the federal government the authority and flexibility to fully implement RIK will increase the probability of success of RIK and result in the benefits to the public as noted.

Background: Some federal royalty has been taken in kind by the Secretary since the early 1920's. The principal RIK program before 1996 was the Small Refiner RIK Oil Program. Since that time, the MMS has successfully managed RIK pilot programs for both oil and gas. Numerous hearings have been held in the House and Senate during the last four years on the benefits of RIK. The State of Texas testified before the House Resources Committee in 1997 that RIK was a successful solution to the problems associated with taking the State's gas royalties in value. Alberta Canada also testified that RIK was a successful way to manage the Crown's royalties. The state of Wyoming is building on its successful RIK pilot and is proactively expanding its RIK effort. The DOI has pursued RIK during the last six years and has initiated a number of significant Pilot programs to ascertain the feasibility of RIK. The agency states that it has achieved significant cost-savings and revenue enhancement through its RIK Pilot programs.

Status: Currently, in addition to the Small Refiner RIK program, MMS has four, multi-year RIK programs in place- (1) a Wyoming oil RIK Pilot, (2) a State of Texas 8(g) gas RIK Pilot, (3) an OCS gas RIK Pilot, (4) and an OCS oil RIK Pilot. A full evaluation of the Wyoming pilot is expected soon. RIK oil has been used extensively to fill the Strategic Petroleum Reserve and in two pilot programs, RIK gas has been successfully used in federal facilities. Currently, MMS takes over 40% of federal royalty oil in kind, and over 15% of royalty gas in kind.

Discussion: Enabling legislation is required to provide the federal government the authority to fully implement RIK and to pay for RIK services such as transportation and processing? RIK should be considered part of a comprehensive national energy strategy and a permanent tool for the Minerals Management Service to use in fulfilling its mission.

Enabling legislation will allow the department to pay for costs associated with RIK such as transportation and processing, provide certainty to the lessee, the States and the federal government, provide for cooperation with the states, and avoid valuation problems that arise when royalty is taken in value.

Legislative action: Enact attached draft bill developed by Senate Energy Staff modifying the authorizing acts.

Policy Considerations

Description: Since 1982, the Minerals Management Service of the Department of Interior has undergone numerous studies and initiatives on the agency's structure and organization. In 1992, the MMS instituted significant changes under the Vice-President's reinventing government initiatives. These initiatives have led to significant changes, including organizational restructuring currently under way as well as significant capital expenditures on information systems. Members of Congress in their oversight capacity, raised serious questions regarding the organizational restructuring initiatives contained in the FY 2001 budget. In particular, they questioned whether MMS had dedicated proper human resources to its team handling the government's RIK projects. Other initiatives to reinvent the department have fallen within the category of rewriting regulations into "plain English". Taken in total, the initiatives commenced in 1992 have and are effectuating significant changes within the Minerals Management Service of the Department of Interior.

Status: Many initiatives are currently underway and others are planned for the immediate future. The MMS is currently undergoing organizational restructuring and is implementing a new financial system. Other training and personnel reorganization initiatives are underway as well. These changes can and do impact oil and gas lessees on the burdens they impose in a myriad of ways including revising electronic reporting requirements, estimating paperwork reduction, implementation of oil valuation rules, or revising existing lease forms. All told there is significant change ongoing.

Key Issues/Decisions: Are the organizational structure/reinventing government initiatives of MMS fully and cost-effectively meeting the goals of timely collection of revenues, simplicity and certainty for the federal government, the states, tribes and lessees? Has MMS allocated adequate resources for management of the RIK programs?

Options:

- No change. This would permit the time necessary to perform a thorough review of the fundamental changes that are occurring and are planned within the core revenue collection and disbursement functions and their impact on policies of the Minerals Management Service.

Timing/Milestones: The reinventing government/plain English initiatives impact the core of all MMS initiatives and therefore must be reviewed within the first 100 days of the new administration.

Executive Order ____
Energy Policy
March __, 2001

By the authority vested in me as President of the United States by the Constitution and the laws of the United States of America, in order to help the Federal Government coordinate a national effort to ensure reliable and affordable supplies of energy for all Americans, it is hereby ordered as follows:

Section 1. Policy. It is critical that the United States develop an energy policy that increases domestic production of energy in an environmentally responsible manner, and promotes development of new technologies that can conserve fossil fuels and reduce energy-related pollution. Furthermore, given the projected 25 percent increase in demand for motor vehicle fuels by 2020 in the United States, it is critical that the United States develop an energy policy that expedites the expansion of facilities critical to production, transportation, and manufacturing of oil, natural gas, and petroleum products.

It is imperative that agencies consider the energy implications of environmental and other regulatory actions to avoid unintended and inordinate complications in energy production and supply. The following principles should guide agency decisions that may affect energy matters:

(a) Energy is a central part of the global economy in which supply and demand are best satisfied through free markets and private sector initiatives. Government policies that minimize interference with a free-market system will contribute to fewer supply disruptions and, consequently, will help moderate price variability.

(b) U.S. national security and economic vitality are enhanced by diversifying energy sources and increasing domestic supplies.

(c) Government policies should create a predictable operating and investment environment for energy suppliers.

(d) Environmental concerns must be addressed but free-market-based incentives, rather than governmental command and control, provide the best foundation for cost-effective solutions.

(e) Technology can help increase supplies, lower costs and improve environmental performance and energy efficiency, meriting both private initiative and government support.

Section 2. Consultation with Secretary of Energy Required. All federal agencies shall include in any regulatory action that could significantly and adversely affect energy supplies, distribution, or use, a detailed statement on (i) the energy impact of the proposed action, (ii) any adverse energy effects which cannot be avoided should the proposal be implemented, and (iii) alternatives to the proposed action. Prior to taking such regulatory action, the agency shall consult with, and obtain the concurrence of, the Secretary of Energy. The agencies' actions directed by this Executive Order shall be carried out to the extent permitted by law.

Section 3. Existing Regulations. To ensure that all existing rules, regulations, and agency policies are consistent with the President's priorities and the principles set forth in this Executive order, within applicable law, each agency shall within 90 days of the date of this Executive order, submit to the Director of the Office of Management and Budget a program under which the agency will periodically review its existing rules, regulations and policies to determine whether any such rules, regulations or policies could significantly and adversely affect energy supplies, distribution, or use and whether, after consultation with the Secretary of Energy, any such rule, regulation or policy should be modified or eliminated so as to make the agency's regulatory program in greater alignment with the President's priorities and the principles set forth in this Executive order. Any rules, regulations or policies selected for review shall be included in the agency's annual plan. The agency shall also identify any legislative mandates that require the agency to promulgate or continue to impose regulations that the agency believes are inconsistent with the policies set forth in this Executive order.

Sec. 4. Resolution of Conflicts. To the extent permitted by law, disagreements or conflicts between the Secretary of Energy and other agency heads that cannot be resolved by the Secretary of Energy and the other agency head shall be resolved by the President, or by the Vice President acting at the request of the President, with the Secretary of Energy and the other relevant agency head (and, as appropriate, other interested government officials). Vice Presidential and Presidential consideration of such disagreements may be initiated only by the Secretary of Energy, the head of the issuing agency, or by the head of an agency that has a significant interest in the regulatory action at issue. Such review will not be undertaken at the request of other persons, entities, or their agents.

Section 5. Definitions.

(a) "Agency," means any authority of the United States that is an "agency" under 44 U.S.C. 3502(1).

(b) "Regulation" or "rule" means an agency statement of general applicability and future effect, which the agency intends to have the force and effect of law, that is designed to implement, interpret, or prescribe law or policy or to describe the procedure or practice requirements of an agency.

(c) "Regulatory action" means any substantive action by an agency that promulgates or is expected to lead to the promulgation of a rule, regulation or policy, including, but not limited to, notices of inquiry, advance notices of proposed rulemaking, notices of proposed rulemaking, and guidance documents.

Section 6. Judicial Review. This order does not create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

NUCLEAR ENERGY INSTITUTE

(14)

The National Energy Security Act of 2001

The National Energy Security Act of 2001, sponsored by Sens. Frank Murkowski (R-AK), John Breaux (D-LA) and Trent Lott (R-MS), provides a variety of incentives to increase domestic energy production, including programs to get more electricity out of the 103 U.S. nuclear plants. The legislation also lays the groundwork for construction of advanced nuclear plants.

The bill's nuclear-related provisions are part of a comprehensive, balanced legislative response to growing U.S. energy concerns. Among other things, the bill (S. 388) would:

- Offer incentives to increase the supply of virtually all domestic energy resources.
- Fund research and development of advanced nuclear, coal, natural gas and energy-efficiency technologies.
- Provide incentives to encourage the purchase of energy-efficient homes, cars and appliances.
- Provide incentives to encourage the use of renewable energy.
- Mandate a reduction in energy use at federal facilities of 30 percent by 2005, and 50 percent by 2020; and mandate an increase in the fuel economy of federal car and light-truck fleets.
- Expand federal programs to mitigate the impact of higher energy prices on low-income households, including weatherization assistance and increased funding for the Low-Income Home Energy Assistance Program (LIHEAP).

Background

Murkowski introduced the legislation on February 26—at a time when Federal Reserve Chairman Alan Greenspan pointed to the role of rising energy prices in the slowing U.S. economy. The bill addresses both short- and long-term U.S. energy problems, which include:

- Shortages of electric generation and transmission capacity, which have become a critical concern in several regions of the United States. In California, shortages of electric generating capacity have contributed to skyrocketing electricity rates, the near-bankruptcy of two major electric companies, and blackouts affecting millions of people and thousands of businesses—all at a cost of billions of dollars. Meanwhile, electricity use nationwide is projected to increase 30 percent to 35 percent by 2010.
- Growing U.S. dependence on imported oil, which accounted for 55 percent of U.S. consumption in 2000. The U.S. Department of Energy (DOE) estimates 65 percent of oil supply will be imported by 2020 unless current policies are changed. The bill seeks to reduce U.S. dependence on imported oil to 50 percent by 2011.
- Rising crude oil and natural gas prices, which have contributed to sharp increases in the cost of gasoline, home heating and electricity in some regions of the nation.

The National Energy Security Act of 2001 recognizes that nuclear energy, which supplies 20 percent of U.S. electricity and two-thirds of all the country's emission-free electricity, must be expanded to assure adequate generating capacity. Toward that goal, the bill includes nuclear-related provisions in several areas:

Studies

- Requires the Nuclear Regulatory Commission (NRC) to report within six months on the state of the nuclear industry, the potential for increased electricity generation at nuclear power plants and any improvements in process for extending the operating licenses of today's plants or licensing new nuclear plants.

- Requires DOE to report annually on the regional availability and capacity of domestic energy sources to maintain the electric grid. The report must recommend options for increasing the use of non-emitting sources, such as nuclear energy.

- Requires DOE to conduct an independent study of innovative financing techniques that would facilitate construction of new electricity supply technologies with higher initial capital costs, including advanced design nuclear plants. Financing techniques may include federal loan guarantees, federal price guarantees, special tax considerations and direct federal investment.

Office of Spent Fuel Research

- Establishes a DOE Office of Spent Nuclear Fuel Research to investigate innovative technologies for treatment, recycling and disposal of used nuclear fuel and high-level radioactive waste. Annual reports to Congress are required.

Price-Anderson Act Extension

- Extends the Price-Anderson no-fault insurance law, which incurs no cost to the federal government or taxpayers, for an additional 10 years. The bill adopts the recommendations of the NRC and DOE for ensuring that immediate and substantial compensation is available to the public in the event of an incident at a commercial nuclear power plant or DOE facility.

Nuclear Production Incentives

- Authorizes the Secretary of Energy to make incentive payments to increase emission-free electricity production at nuclear power plants. The bill authorizes payment of one-tenth of a cent for each kilowatt-hour produced in excess of the previous calendar year, with payments capped at $2 million per plant, per year, for up to 15 years. The bill authorizes $50 million annually through 2015.

- Authorizes DOE to pay owners of nuclear plants up to 10 percent of the cost of capital improvements directly related to increasing electrical output by at least 1 percent. No single facility could receive more than $1 million, or more than a single payment. The bill authorizes $20 million annually for the program.

DOE Research & Development

- Authorizes $60 million annually for DOE's Nuclear Energy Research Initiative (NERI), allowing new R&D projects to be launched and existing projects to be continued. The NERI program is a mid- to long-term R&D effort that addresses potential barriers to expanded use of nuclear energy, whether it is economics, proliferation, or used fuel management.

- Authorizes $10 million for DOE's Nuclear Energy Plant Optimization (NEPO) program. DOE and private industry share the cost of R&D aimed at increasing production at nuclear power plants without compromising safety. NEPO research programs focus on boosting the reliability and productivity of nuclear plants and support efforts to achieve license renewals through management of the long-term effects of plant aging.

- Authorizes $25 million for a new Nuclear Energy Technology Development (NETD) program for a roadmap to design and develop a new nuclear power plant in the United States.

Tax Code Changes

- Permits amounts paid for temporary storage of used nuclear fuel to be treated as a deductible operating expense, rather than as a capitalized cost.

- Permits non-utility owners of nuclear plants to deduct amounts paid into a nuclear plant decommissioning fund. Specifically, the bill allows deductions whether the decommissioning fund recovers costs through traditional cost-of-service rates, market-based rates, or in transition charges during the changeover to a competitive electric marketplace. Tax-free transfer of decommissioning funds from regulated utility companies to new owners is also permitted.

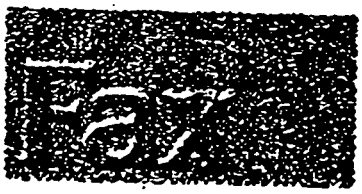
- Allows rapid, seven-year depreciation of new power plants, including nuclear plants, to foster investment in new electric power supply.

Clarification of State Clean Air Programs

- Clarifies that State Implementation Plans (SIP) under the Clean Air Act should recognize the increased use of emission-free sources of electricity generation as qualified air pollution control measures. This would make activities to increase the use of emission-free sources, including expanding production at nuclear plants or building new ones, eligible for CAA economic incentive programs. Currently, such incentives are available only to activities that prevent and control air emissions.

Outlook

Murkowski has set a goal of achieving Senate passage of the NES Act of 2001 by this summer. The bill's balanced approach to increased electricity production from all energy sources, the electricity crisis in California, rising prices for oil and natural gas nationwide and the realization of the impact of high energy prices on the U.S. economy have enhanced the bill's prospects.



(15)

Date: Monday, April 02, 2001

To: U.S. Department of Energy
Joe Kelliher
Phone: 202-586-1060
Fax: 202-586-7210

From: The Duberstein Group, Inc.
Henry Gandy
Phone: 202-728-1100
Fax: 202-728-1123

Pages: 3

Subject: Joe: From GM – please take a look and give me your thoughts. I have been speaking with Andrew about this and have shared it with him. Trying to provide constructive suggestions on CAFE, including a discussion on alternatives.

Elements of a National Energy Strategy

Energy policy works best when it relies on market forces. In contrast, Corporate Average Fuel Economy (CAFE) regulations have put domestic auto manufacturers at odds with their customers, working against the market and creating serious competitive effects without reducing fuel consumption.

CAFE is a Flawed Policy

CAFE has been ineffective at achieving its original goal of reducing imported oil, and would be ineffective at reducing greenhouse gas emissions. Vehicle fuel economy has doubled since the early 1970s, but petroleum use is higher due to increased travel. The fuel economy increase during the 1970s and early 1980s was driven by high fuel prices, not CAFE. When gasoline prices declined in the early 1980s, customers stopped emphasizing fuel economy in their purchase decisions, and the standards began putting domestic manufacturers at odds with their consumers. CAFE penalizes full-line manufacturers, which must meet the same standard as firms specializing in smaller vehicles. Domestic automakers were forced to: offer expensive technology that consumers were unwilling to pay for, deny consumers the types of vehicles they sought, or degrade other vehicle attributes. Higher prices and compromised vehicles reduce sales and harm suppliers, dealers, jobs, and the economy. In addition, studies indicate CAFE reduces occupant safety if manufacturers are forced to make vehicles lighter.

Solutions that Work Through the Market

Open markets should be relied on as the best means for efficient use of resources by industry and consumers. Government policy should focus on: 1) removing obstacles to the efficient functioning of markets, 2) providing support for basic research that would not be supported by normal market forces, and 3) addressing through broad-based market mechanisms, set at appropriate levels, externalities that cannot be adequately addressed by technology development or market efficiency improvements (e.g., environmental).

Explicit consideration should be given to setting goals and priorities, as well as identifying trade-offs. U.S. energy goals can be grouped into the following areas:

- Adequate and reliable energy supplies,
- Affordable energy prices,
- Energy efficiency,
- Environmental protection,
- Energy security, and
- Advanced technology development for future improvements.

Supply

Fossil fuels will be the dominant energy source for many years. Development of alternatives and installation of new infrastructure would take decades. If dramatic reductions in fossil fuel use ultimately prove necessary, we may need to move to hydrogen. This transition would likely begin with gasoline-powered fuel cells and, as fuel cells improve, move to hydrogen from sources such as renewables or nuclear.

Energy Prices
Substantial benefits for national competitiveness and our standard of living flow from low cost energy. Affordable and reliable energy is vital to our business. Energy is most efficiently distributed, and shortages are avoided, if free market pricing mechanisms are allowed to work. If conservation is needed beyond the capacity of available technology, broad-based pricing mechanisms are the most efficient means for additional conservation.

Energy Efficiency
Market forces are sufficient to ensure rational consumer behavior in purchasing major energy consuming products. Manufacturers rationally respond to this customer need by offering those designs and technologies which best meet consumer demand for a range of attributes, including energy efficiency. Regulation has been counterproductive.

Energy Security
Energy independence is not an achievable goal in a global economy. Security can best be enhanced through developing numerous, diverse energy supplies, especially domestic ones, and maintaining emergency stockpiles such as the Strategic Petroleum Reserve.

Environmental Protection
Vehicle tailpipe emissions of regulated gases such as CO, NOx and VOCs are controlled by standards set in grams per mile. Perversely, CAFE standards, which increase travel by reducing the variable cost per mile driven, contribute to higher levels of these regulated pollutants. Encouragement of longer retention of older vehicles through CAFE also leads to higher levels of regulated pollutants. With respect to the global climate issue, which is very long term in nature, the emphasis at this time should be on expanding our understanding of climate science and accelerating technology development to be prepared to respond dramatically as necessary. Given the major reductions that could be necessary in atmospheric CO_2 levels, minor fuel economy improvements driven by CAFE would only divert resources from the more important task of developing long term technologies such as fuel cells, carbon sequestration, and decarbonization of fuels.

Advancing Technology Development
Rather than focusing on the failed policies of the past, a better approach takes a longer-term vision of moving to a hydrogen economy with fuel cells. Fuel cells offer potential for both mobile and stationary power, helping to relieve strains on the electricity grid. Fuel cells also have minimal emissions of regulated pollutants and could become important for national competitiveness. The best opportunity for higher nearer term efficiency that maintains choice for family-sized transportation is seen in Europe, where diesels offer up to a 30% fuel economy improvement. That technology could provide similar benefits to the U.S. given appropriate tailpipe emissions regulation. Public policies can support this by:

- Expanding public-private research partnerships (e.g., advanced diesel research),
- Providing customer incentives for moving advanced technologies into the market,
- Utilizing government purchasing power to accelerate the commercialization of advanced technologies (e.g., hybrid transit buses),
- Accelerating technology transfer from the National Labs to the private sector,
- Assessing the infrastructure needed for advanced technologies, especially hydrogen.

Kelliher, Joseph

Release

(16)

From: Jim Ford [Fordj@api.org]
Sent: Thursday, March 22, 2001 8:41 AM
To: Kelliher, Joseph
Subject: RE: Recommendations on National Energy Policy

We do have more. I'll get back to you with supplementary material as soon as possible. Curious as to whether any of the other suggestions we've made - particularly the short-term administrative measures recommended in the first e-mail I sent you - have any traction. By the way, I heard some word yesterday that the NEP development group may have produced a draft. Can you sehd any light on that?

-----Original Message-----
From: Kelliher, Joseph [mailto:Joseph.Kelliher@hq.doe.gov]
Sent: Wednesday, March 21, 2001 4:38 PM
To: 'Jim Ford'
Subject: RE: Recommendations on National Energy Policy
Importance: High

Do you have more detail on the CZMA issue? Your description suggests that legislation is not needed, and that changing the regulations would suffice. Is that true? Also, please explain in more detail how the current regulations relating to consistency impede offshore development, it is not clear what the problem is. Thanks.

-----Original Message-----
From: Jim Ford [mailto:Fordj@api.org]
Sent: Tuesday, March 20, 2001 2:51 PM
To: Kelliher, Joseph
Subject: Recommendations on National Energy Policy
Importance: High

Hi, Joe. As we discussed, attached are a set of papers on national energy
policy recommendations. Much of it is designed to be self-explanatory. The
last document is a suggested executive order to ensure that energy
implications are considered and acted on in rulemakings and other executive
actions. This draft has DOE as the coordinator. Probably also need to make
energy a major portfolio item for a senior White House aide.

Let me know if you have questions or additional info needs. Thanks.

Jim Ford
682-8210
fordj@api.org <mailto:fordj@api.org>

Kelliher, Joseph

Release

(17)

From: Riith, Michael J. [MJRiith@southernco.com]
Sent: Friday, March 23, 2001 9:43 AM
To: Kelliher, Joseph
Subject: NSR and Energy Strategy

Importance: High

A National Energy Strategy Sho...

Good morning.

This is the document I told you was in "the works" on NSR in relation to the
national energy strategy. As promised, it is attached.

I hope this is helpful. After talking with you yesterday, the last thing
you need is another issue to deal with. Thanks for your consideration.

Again, I look forward to lunch on Tuesday.

Best regards,

Mike

<<A National Energy Strategy Should Include Reform of EPA.doc>>

A National Energy Strategy Should Include Reform of EPA's New Source Review Program

The Federal Clean Air Act established a "New Source Review" permitting program for industrial facilities that undergo "modifications" as defined in the Act and by the EPA could trigger a process called "New Source Review". This permitting process requires a detailed review by the EPA of modifications as well as possible retrofitting of additional pollution control equipment on the facility. In 1980, EPA adopted rules to implement the NSR program and these rules were amended in 1992 for facilities in the electric utility industry.

EPA's historical interpretation allowed plants to be maintained and repaired.

These rules and EPA's historical interpretation have generally been consistent with the intent of the statute, only focusing on changes or modifications that increased a facility's maximum achievable emission rate and not merely on more hours of operation. The rules also excluded from scrutiny routine repair and replacement of equipment and efficiency improvements at facilities from the definition of what constitutes modification. In a proposed, but never finalized, 1996 rule and in recent legal actions EPA has re-interpreted these regulations in extreme ways that not only places in legal jeopardy past work conducted at facilities but also threatens the safe, reliable and efficient operation of energy production facilities across the country.

EPA's new interpretation makes maintenance and repair subject to NSR.

EPA's re-interpretation of the NSR rules discourages any repair or replacement project that might make an electric utility generating unit more available to operate – projects that improve the safety, efficiency or reliability of the unit. These are the types of projects that are necessary for utilities to operate their units in a manner consistent with their duty to provide a reliable supply of electricity to their customers and to assure safe operations for their employees. Projects, like these, that only allow units to operate more hours have never been considered projects that trigger NSR modification requirements unless they also increase the design capacity of the unit to emit pollutants (*i.e.*, increase the maximum achievable emission rate). EPA's new interpretation brings into question any project that could enable a unit to operate more hours in the future than it had in the past.

EPA's new interpretation defines "routine" very narrowly.

EPA's modification requirements also do not apply to repair or replacement activities that are "routine" in the utility industry. In the final days of the Clinton Administration, EPA published in the Federal Register a notice announcing a Region V NSR applicability determination, affirmed by Administrator Browner, involving a turbine repair project at Detroit Edison's Monroe Power plant. In that determination, EPA established a 24 factor test that could render virtually any

project that improved efficiency or reliability at an existing electric utility boiler "non routine" and therefore potentially subject to NSR permitting requirements. This determination creates a serious regulatory impediment to utilities undertaking the type of projects that provide the only short-term hope of expanding existing generating capacity (*i.e.*, efficiency improvements) and of maintaining the availability of existing generation (*i.e.*, reliability improvement projects). The Utility Air Regulatory Group (UARG) has filed a "protective" petition to review that decision in the D.C. Circuit.

EPA's new interpretation threatens electricity reliability and efficiency. EPA's current interpretation of the NSR rules are counter to the need for the important safe, reliable and efficient operation of electric utility generating units across the nation. Especially in the energy short western U.S., the ability to maintain and operate generation could be compromised by EPA's current position. Put succinctly, the routine maintenance and repair of electric utility plants such has been performed in the industry over the last seventy-five years is not lawful under EPA's current interpretation.

A National Energy Strategy should reaffirm EPA's historical interpretations. A National Energy Strategy that is focused on increasing supply should find ways to resolve the inconsistency between the Strategy's goals and EPA's current NSR interpretation. This could be accomplished by EPA's confirmation of the historical approach to the NSR modification requirements which would exclude from NSR review projects that are routine repair and replacement and allow utilities and other industries to move forward with needed projects so long as the projects do not increase the maximum achievable emission rate of a unit. This reaffirmation of historical interpretations would insure the reliable supply of electric energy and would not negatively impact air quality.

Kelliher, Joseph

Release

(18)

m: Stephen Sayle [ssayle@dutkogroup.com]
t: Thursday, March 22, 2001 4:58 PM
To: Kelliher, Joseph
Subject: to mr. commissioner

A multipollutant regulatory strategy should be established for the power generation sector including:
- Gradually phased in reductions.
- Reform/replacement of NSR
- Use of market-based/emission trading programs
- Inclusion of both existing and new plants and equal treatment for both

The last bullet is the critical one to ensure that: a) we encourage the new generation that is required b) we ensure that the new technologies developed through DOE programs can come into the market.]

I will follow up with a short statement on above tomorrow. Call me with questions

Kelliher, Joseph

From: Stephen Sayle [ssayle@dutkogroup.com]
Sent: Friday, March 23, 2001 10:18 AM
To: Kelliher, Joseph
Subject: might not have time to read. May be useful background

Political

The threshold question is whether a multipollutant strategy would detract or enhance a National Energy strategy. I will not go into the downsides, but they revolve around attention that any pollutant plan would garner and take away from core energy issues. But let me give you at least some reasons to include such language.

As you know, there will be a lot of talk about how increasing generation will result in increased emissions. If some action is not taken on controlling emissions-that will become a negative, at least to some. Secondly, if Bush is serious about pushing a utility emissions plan, it will have a whole lot greater chance to pass as part of the Energy bill as opposed to being a stand-alone bill.

Depending on how the pollutant plan is written, it will gain support from some in industry if it provides regulatory certainty. In addition, if NSR is reformed/eliminated for new and old generators, we believe it would actually spur new generation, by removing economic incentives that encourage capital to remain in very old coal generation.

Discussion

Remember that the purpose of most pollutant plans is to reduce emissions from so-called grandfathered plants. That is the multi-pollutant (NSR reform-emissions reductions etc) only applies to these old plants. To understand why, you need a refresher course on how the Clean Air Act treats old and new sources. Recognizing that it was economically impossible to treat old and new sources the same; The CAA set up a two-tiered system. Old sources would have to install the Best Achievable Control Technology (BACT); new sources a much more stringent Lowest Achievable Emissions Rate (LAER). The caveat was if old sources made major modifications to their facilities, they too would fall under NSR and LAER. The thought was that in the near future major modifications would be made and all these old facilities would soon be cleaned up.

But that didn't happen. Facilities had economic incentive not to make major modifications, and did just enough maintenance to keep these plants open but not enough to trigger NSR. They thought. Last year, EPA started taking many of these utilities to court saying that the changes they made were

in
fact major modifications and that they should have to retrofit with LAER technology.

So the system is totally screwed. Old facilities are not cleaning up, so
EPA is going after them through the courts on a case-by-case basis, which is
very inefficient. Meanwhile, LAER is so restrictive that there may never be
a new coal powered plant built in our lifetime, and it's difficult (although it is happening) even to get gas-fired generators permitted.

Our idea was, we would start to clean up old plants, and loosen somewhat LAER standards on new plants. This will make it easier for all new generation, coal and gas to come on board.

Because enviro's wouldn't like the fact that "command and control" NSR is
gone, we will trade it off with a declining emissions cap. And so that old
generation will not have to immediately adopt expensive new technology we
will set up a trading program with circuit breakers to make sure it doesn't
get to expensive. This would give them the option to decide when to stop
buying credits and put on new polllution control technology and provide some
encouragement for capital to migrate to new generation.

Finally, we wanted to reward efficiency, so allocations would be made year-to-year based on output.

Obviously, this is a dream list. Not all will be done. But perhaps some of
these ideas could be floated and adopted. This is my work, and may not cover other questions you have so feel free to shoot away.

Kelliher, Joseph

From: Altmeyer,Tom [TAltmeyer@nma.org]
Sent: Wednesday, February 21, 2001 4:42 PM
To: Kelliher, Joseph
Subject: Coal's Role in Meeting the Nation's Energy Needs

NATIONAL CTRICITY AND ENV.

NEET Outline - Title V 22101...

NEET Overview - Policy Rationa...

NEET slides 22101.PPT

Joe,

In order for coal and coal-fired power generation to increase its role in meeting the nation's electricity requirements and energy needs, a number of actions would be helpful.

1. Enactment of legislation similar to S.60, the National Energy and Environmental Technology Act which was introduced earlier in this Congress by Senators Byrd and McConnell and has bipartisan support of approximately eight Senators -- including the ranking member of the Senate Energy Committee, Senator Bingaman and the Democratic Whip in the Senate, Senator Reid. The concept of S.60 had the support in the previous Congress from Senator Abraham. Its provisions are expected to be included in the comprehensive energy legislation to be introduced by Senator Murkowski on February 26. The following material explains the rationale for S.60 and its justification.

2. A number of constraints to the continued economic availability of coal-fired power are presented by approximately 15 separate regulatory actions dealing with SO2, NOX and mercury which are either pending at the EPA or in litigation. It would be very important for DOE to take on a leadership role within the federal government to bring rationality to the plethora of regulatory actions directed at coal-fired power by the previous administration. Doug Carter (586-1650), policy analyst in Fossil Energy, is very articulate on this issue.

3. To make improvements either for environmental performance or increased efficiency of existing coal-fired power plants and to facilitate the construction of new coal-fired power plants and necessary transmission facilities, it is very important to give a priority focus to issues associated with siting and permitting. We would recommend an Executive Order, fashioned along the lines of the recent Executive Order addressing California's energy needs, that gives the DOE lead responsibility in ensuring priority focus on siting and permitting actions by the various federal agencies involved and facilitating those actions with the appropriate state authorities.

4. DOE should become involved in issues associated with access to coal reserves and the permitting of coal operations from an energy standpoint which will grow out of a draft Environmental Impact Statement (EIS) anticipated to be published in draft form by EPA imminently. This EIS grew out of the "mountaintop mining" controversy in 1999. Similarly, DOE should take an active role in insuring the federal coal leasing program is administered in a way which insures timely access to the development of coal reserves on federal lands.

5. In addition to combustion technology and coal preparation, DOE should continue to focus its research activities in the area of alternative fuels from coal, such as liquids, with specific targets and timetables for development of cost-effective technologies to make greater utilization of our nation's coal reserves.

Under separate cover I will forward a recent study completed for the Edison Electric Institute entitled Fueling Electricity Growth for A Growing Economy. This study was conducted by the National Economic Research Associates and was published on January 15, 2001. It identifies the significant impediments to the expanded economic use of coal-fired power generation.

You should be aware that the National Coal Council, an advisory group to the Secretary of Energy, established by Secretary Hodel in 1985, was requested by former Secretary Richardson to report back by mid-April on obstacles to greater utilization of existing coal-fired power generation facilities. The initial draft of that report should be completed in early March. The Coal Council's recommendations should be helpful to your work..

Finally, under separate cover, you will also receive a chart we developed which identifies new additions in coal-fired generation capacities in the United States between 1980 and the year 2000 and a copy of our DOE transition paper. The chart shows that a significant amount of new coal-fired capacity is brought on-line in the 1980s and is currently helping to meet our nation's energy needs. Since 1990, relatively little low-cost, coal-fired power has been brought on line. Legislation such as S.60 will help provide incentives for construction of new coal-fired capacity that is more efficient in terms of producing electricity with improved environmental results. EIA projects that by 2020 we will need 45 percent more electricity (over 1200 power plants) in the United States. To assure the availability of reliable, low-cost power, it is important that utilities have the flexibility to build coal-fired power.

Please call (202-463-2653) with any questions.

attachments

<<NATIONAL ELECTRICITY AND ENVIRONMENTAL TECHNOLOGY ACT prelim
est
of env. benes.doc>> <<NEET Outline - Title V 22101.doc>> <<NEET
Overview
- Policy Rationale 22101.doc>> <<NEET slides 22101.PPT>>

NATIONAL ELECTRICITY AND ENVIRONMENTAL TECHNOLOGY ACT (NEET)

Preliminary Estimate of Environmental Benefits

Enactment of the National Electricity and Environmental Technology Act (NEET) would provide cost sharing for investment by the electricity generating industry for pollution control and repowering technology. It is projected that 50% of the owners of eligible units greater than 300MW would retrofit these units with a system(s) of continuous emission control to control emissions to levels of the new source performance standards for steam-electric generating units. It is projected that one-third of the operators would install flue gas desulfurization (FGD) for the control of sulfur dioxide, one-third would install selective catalytic reduction (SCR) for the control of nitrogen oxides and one-third would install both FGD and SCR. It is also projected that between 10% and 25% of the operators of units of 300MW or less would repower these units to control emissions to levels of the new source performance standards for steam-electric generating units and increase their thermal efficiency by at least 500 Btu per kilowatt hour. The completion of these installations is projected to coincide with any new or anticipated regulatory requirements for eligible units. Furthermore, it is anticipated that the availability of the tax credits will result in the installations of controls before it may have otherwise occurred.

The projected reduction in emissions from the retrofit of systems for continuous emission control and repowering are significant. Nitrogen oxide emissions are projected to be reduced by over 740,000 tons per year, a 24% reduction from 1999 levels. Sulfur dioxide emissions are projected to be reduced by over 2,457,000 tons, a 28% reduction from 1999 levels. Despite the fact that the installation of systems of continuous emission controls decreases unit efficiency and increases carbon dioxide emissions by 2%, the reduction in carbon dioxide emission from the repowering applications are projected to result in a net reduction of over 11,722,000 tons, a 0.9% reduction from 1999 levels.

Projected Emission Reductions

	NO_x	SO_2	CO_2
Coal-based Units > 300MW			
Emissions before NEET	1,956,545	4,941,615	860,211,290
Emissions after NEET	1,434,539	3,375,988	865,948,899
Reduction	522,006	1,565,627	-5,737,609
Coal-based Units 25 % of capacity <= 300MW repowers			
Emissions before NEET	1,099,160	3,754,884	443,357,462
Emissions after NEET	879,328	2,863,099	425,897,237
Reduction	219,832	891,785	17,460,226
Total Emission Reduction, Tons	741,838	2,457,412	11,722,616
Percent Emission Reduction	24%	28%	0.9%
Coal-based Units 10% of capacity <= 300MW repowers			
Emissions before NEET	1,099,160	3,754,884	443,357,462
Emissions after NEET	989,245	3,398,170	436,373,372
Reduction	109,916	356,714	6,984,090
Total Emission Reduction, Tons	631,922	1,922,341	1,246,481
Percent Emission Reduction	21%	22%	0.1%

12/18/2000

OUTLINE
The National Electricity and Environmental Technology Act

Title I Accelerated technology research and development program for new and existing coal-based generation facilities

- Authorizes the Secretary, in consultation with the private sector, to establish R&D cost and performance goals that can be achieved by 2007, 2015 and 2020 by existing and new coal-based generating facilities.
- Authorizes the Secretary to study the technologies capable of achieving the performance goals and make recommendations for the programs required to develop those technologies.
- Authorizes the appropriations necessary to carry out the RD&D program to advance the technologies identified in the study as being capable of achieving the cost and performance goals.
- Authorizes the Secretary to carry out a power plant improvement initiative that will demonstrate commercial applications to new and existing plants of coal-based technologies that will advance the efficiency, environmental performance and cost competitiveness beyond that of facilities in service or demonstrated to date.
- Authorizes 50% private sector cost sharing along with the use of uncommitted Clean Coal Technology program funds to provide the federal share of the demonstration projects.

Title II Tax credits for emission reductions and efficiency improvements in existing coal-based generating facilities

- Establishes a 10% investment tax credit for investments in systems of continuous emissions controls retrofitted to existing coal-based electricity generating units.
- Establishes a production tax credit (0.34 cents/kWh) for the first 10 years of electricity output from existing coal-based generation units that are repowered with qualifying clean coal technologies.

Title III Tax credits for early commercial applications of advanced coal-based generating technologies

- Establishes a 10% investment tax credit for investment in qualifying advanced coal-based generating technologies for use in new or repowered units.
- Establishes an efficiency-based production tax credit for electricity generated during the first 10 years of operation of a new or repowered unit using qualified advanced coal-based generation technologies. In subsequent years, eligible technologies must achieve increasingly higher levels of efficiency to qualify for the credits.
- Establishes a risk pool amounting to 5% of the cost of the new technologies to help defray the cost of any modifications necessary to achieve design performance levels.

Title IV Refundable or offset credits for electric cooperatives, publicly owned electric utilities and the Tennessee Valley Authority

- Establishes refundable or offset tax credits for electric cooperatives and publicly owned electric utilities.
- Establishes an offset against payments required as an annual return on appropriations by the Tennessee Valley Authority.

12/18/2000

OVERVIEW
The National Electricity and Environmental Technology Act

The National Academy of Engineering recently identified "Electrification – the vast networks that power the developed world" as the single most important achievement of the 20th century. The economy of the 21st century will require increased amounts of reliable, clean and affordable electricity. Coal, the nation's most abundant energy resource, can help meet these requirements if new technologies are developed and deployed to convert this resource to electricity more efficiently and cleanly.

Background

- *By the year 2020, U.S. electricity consumption is projected to grow 35% and worldwide electricity is projected to grow by 70%.*
- *Today, more than one half of U.S. electricity is generated from abundant, low-cost, domestic coal.*
- *On average, the cost of electricity from coal is less than one half the cost of electricity generated from natural gas or oil, and it is less than nuclear power.*
- *Coal constitutes more than 85 percent of U.S. fossil fuel resources, enough to last more than 250 years at current rates of consumption.*
- *Overall emissions from U.S. coal-based generating plants have been reduced by one third since 1970, even while electricity produced from coal has tripled.*

Reasons for Stimulating Advanced Coal Generating Technologies

- Uncertainty about new environmental requirements and electricity deregulation, as well as optimistic projections about natural gas prices, have led generators to rely heavily on natural gas for new electric generating capacity. Consumption of natural gas for electricity generation is projected to triple by 2020.
- Average wellhead prices for natural gas in 2000 now exceed $9.00/mcf, well above the $3.66/mcf price DOE forecast for *2020*. Large-scale conversion to natural gas generation could double retail electric prices – a significant hardship for low and fixed income consumers. It would also eliminate an advantage the U.S. enjoys in the world marketplace.
- Only expensive retrofit technologies can achieve the more stringent emissions limits being considered for existing coal-based generating facilities. Advanced technologies for converting coal into electricity can effectively eliminate health-based pollutants and substantially improve efficiency in new power generating facilities.
- Initial commercial deployment of new coal generating technologies entails significant risk which generators are unwilling to accept in a newly competitive electricity market.

The National Electricity and Environmental Technology Act provides a measure of burden-sharing to cushion the cost of improving the environmental performance of existing coal-based generating facilities. It also stimulates deployment of advanced technologies to further reduce emissions and improve efficiency in new generating facilities, allowing our most abundant domestic energy resource to help meet the nation's growing need for clean, reliable and affordable electricity.

NATIONAL ELECTRICITY AND ENVIRONMENTAL TECHNOLOGY ACT

Congressional Briefing
January 2001

Purpose

Enact a comprehensive coal-based technology program to reduce emissions and improve efficiency in existing coal-based generating plants and stimulate deployment of advanced technologies to further reduce emissions and improve efficiency in new generating facilities

Program Elements

- **R&D program** that addresses long term technology needs to improve efficiency and reduce emissions from coal-based generation
- **Financial incentives program** designed to cushion the financial burden of applying technologies to existing coal units to improve emissions control and increase efficiency
- **Demonstration program** that provides tax incentives and/or financial assistance to deploy the initial commercial-scale applications of advanced coal-based generating technologies

Background

- DOE Fossil Energy R&D programs do not have a comprehensive program that addresses the environmental constraints and timeframes facing the existing fleet of coal-based generating units
- DOE Fossil Energy program is supporting the development of advanced coal-based generating technology, but program does not have specific performance goals or milestones for commercial application
- Vision 21 calls for the development of commercial designs after 2015
- No program exists for supporting early commercial application of high risk, higher cost advanced coal-based technology.

Major Provisions

Title I

- Accelerated Technology Research and Development Program for Advanced Clean Coal Technology for **New and Existing** Coal-based Electric Generating Facilities

Title II

- Credits For Emission Reductions And Efficiency Improvements In **Existing** Coal-based Electricity Generating Facilities

Title III

- Incentives For Early Commercial Applications Of **Advanced** Clean Coal Technologies

Title IV

- Treatment Of Certain Tax-Exempt Entities

Title I -- Accelerated R&D Program

- Part A -Establishment of a national coal-based technology development plan and applications program
  - Sec. 101 Purposes
  - Sec. 102 Cost and performance goals
    - establish cost and performance goals for technologies that are available in 2007, 2015 and after 2020
    - establish goals in consultation with industry and issue for public comment
    - after accounting for public comment, submit goals to Congress
  - Sec. 103 Study
    - identify technologies that are capable of achieving the goals
    - recommend programs to develop and demonstrate such technologies
  - Sec. 104 Technology research and development program
    - implement the R&D program identified in the study
  - Sec. 105 Authorization
    - $100 M per year -- 2002 through 2012

Title I -- Accelerated R&D Program

- Part B - Power plant improvement initiative
  - Sec. 121 Power plant improvement initiative program
    - demonstrate commercial applications of advanced coal-based technologies applicable to new and existing power plants and co-production facilities
    - Conduct 50MW or greater demonstrations that achieve levels of performance well beyond current or demonstrated levels for:
      - significant improvements in
        - » efficiency, or
        - » environmental performance
      - cost competitiveness
  - Sec. 122 Financial assistance
    - solicit and select 50% cost shared projects
    - applicable to 25% of existing fleet of coal-based generating plants
  - Sec. 123 Authorization
    - redirect excess Clean Coal Technology program and other funding to carry out program

Title II -- Credits for Existing Units

- Sec. 201 Credit for investing in qualifying clean coal technology
  - 10% investment tax credit on 1st $100 million investment in a qualifying system of continuous emission control installed on an existing coal-based generating unit
  - exempt from new source review
  - 10 year "safe harbor" for pollutant controlled to NSPS level
- Sec. 202 Credit for production from a qualifying clean coal technology unit
  - production tax credit of 3.4 mills/kWh during 1st 10 years of production from an existing unit, 300MW or smaller, repowered with a qualifying clean coal technology
  - qualifying clean coal technology must reduce heat rate by not less than 500 Btu/kWh or achieve a heat rate of less than 9,000 Btu/kWh
  - exempt from new source review
  - 10 year "safe harbor" from further regulation under Clean Air Act

Title III -- Incentives For Advanced Clean-Coal Technology

- Sec. 301 Credit for investment in qualifying advanced clean coal technology
  - 10% of total investment in qualifying advanced clean coal technology with a design efficiency of not less than 36%
  - Qualifying facilities:
    - a total of 5,000MW advanced pulverized and atmospheric fluidized bed combustion
    - a total of 1,000MW pressurized fluidized bed combustion
    - a total of 2,000MW gasification combined cycle
    - a total of 2,000MW unspecified technology with 15% efficiency improvement
- Sec. 302 Production tax credit
  - 10 year variable rate based on date placed in service and design heat rate (greater efficiency required to qualify in later years)
  - Multiple demonstration periods for facilities placed in service:
    - Before 2008 with a design efficiency of 39% to 41%
    - After 2007, before 2012 with a design efficiency of 41% to 44%
    - after 2011, before 2016 with a design efficiency of 44% to 46%
  - exempt from new source review and 10 year "safe harbor" for pollutant controlled to NSPS level

Title III -- Incentives For Advanced Clean-Coal Technology (continued)

- Sec. 303 Risk pool
  - Establishes a risk pool to defray the cost of any modifications required to achieve the design performance
  - Not to exceed 5% of total investment
  - available during first three years of operation

Title IV -- Treatment of Certain Tax-Exempt Entities

- Sec 401 Credits or offsets for cooperatives and publicly owned utilities
  - Establishes refundable or offset tax credits for electric cooperatives and publicly owned electric utilities

- Sec. 402 Offsets for annual payment obligations
  - establishes an offset against payments required as an annual return on appropriations by the Tennessee Valley Authority

Environmental Benefits

- Retrofit of systems of continuous emission control that achieve the new source performance standard levels will:
  - significantly reduce NOx and SO2
  - increase efficiency and decrease CO2
- repowering with technologies that achieve the new source performance standard levels and increase efficiency by 5% will:
  - significantly reduce NOx, SO2 and CO2
- Total emission reduction
  - NOx - 24%-21% (742,000 -631,922 Tons)
  - SO2 - 28%-22% (2,457,000 -1,922,341 Tons)
  - CO2 - 0.9%-0.1% (11,722,000 -1,246,481 Tons)

Investment and Revenue Impacts

- $48 billion projected capital investment by owners of coal-based generating units who install systems of continuous emission control or repowering technology
  - 50% of eligible units over 300MW are projected to retrofit systems of continuous emission control
  - 10% -25% of units equal to or less than 300MW are projected to repower
- $1.7-$2.2 billion projected revenue impact for 1st five years
- $3.2-$4.5 billion projected revenue impact for 2nd five years
- Total revenue impact projected to be $8.3-$11.2 billion over 24 years

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Electric Industry Restructuring After California-
Making the Wholesale Markets Work More Efficiently

The well-publicized problems facing electricity consumers in the State of California[1] predictably have caused some to question whether electric industry restructuring legislation is "ripe" for Congressional consideration. To us, this question misses the mark. The question should not be whether Congress should deal with this issue, but rather what type of legislation is needed to help ensure the efficient functioning of wholesale electric markets that clearly are not working as well as they should.

To a large extent, the problems facing the State of California are unique to that state:

- No major new generation facilities have been built in California in more than a decade, and in the meantime, demand has soared;
- Inadequate natural gas transportation capacity into the state, coupled with increasing reliance on natural gas for power generation, has helped drive up natural gas prices to the highest levels in the country, thus further increasing the price of electricity;
- Environmental and facility siting restrictions that are the toughest in the nation makes it difficult to build new generation or even operate existing facilities for the entire year;
- Abnormally dry weather has reduced the amount of available hydropower generation by nearly 40% this winter;
- A critical shortage of transmission capacity in some regions of the State makes it difficult to efficiently transmit power to where it is needed;
- An almost total reliance on volatile day-ahead and hour-ahead electricity markets by prohibiting effective hedging and long-term contracting by incumbent utilities has driven up prices.

While most of these factors lie within the authority of state officials to address, some clearly relate to the wholesale electricity market, where the FERC has jurisdiction. In its recent

[1] The shortage of generation in the State of California has had a ripple effect through out the entire interconnected West, where wholesale prices have been driven upward.

order addressing the California situation, the FERC has sought to address those issues within its jurisdiction that directly impact the wholesale market, including the encouragement of long-term contracting and hedging as a means of mitigating volatile short-term prices. While there is sharp disagreement over whether the actions of FERC are sufficient to address California's problems, there should be no disagreement that wholesale markets through out the country are not functioning as efficiently as they should. Moreover, the situation in California has made it abundantly clear that we should be seeking to encourage, not discourage, the building of new generation and transmission facilities that are needed to meet the demands of a growing economy.

We believe that Congress can help make wholesale markets work more efficiently, while deferring to the states on the question of retail markets, including whether to restructure the electric industry in their respective states. We believe that the following would help wholesale markets function better, would encourage the building of new generation and transmission facilities, enhance system reliability and would provide the regulatory certainty necessary for investment in this critical industry:

Improving Efficiency of Wholesale Markets

- Eliminate artificial federal barriers to increased supply and greater competition by repealing PUHCA and prospectively repealing PURPA.

- Expand the size of regional markets by extending FERC's open, non-discriminatory access requirements to the transmission facilities of currently non-jurisdictional facilities.

- Encourage the establishment of regional transmission organizations ("RTOs") by providing clear legislative guidance and incentives.

- Eliminate tax disincentives that effectively prohibit municipal and cooperative transmission systems from joining RTOs and make it prohibitively expensive for IOUs to spin-off transmission assets into a separate company.

- Clarify current federal/state jurisdictional ambiguity.

Encouraging New Generation

- Expedite the interconnection of new generation through the adoption of uniform interconnection procedures at the wholesale transmission level.

Encouraging the Building of New Transmission Capacity

- Require the FERC to provide adequate returns and incentives for building and operating new transmission capacity.

- Provide a federal right of eminent domain where a state has been unable or unwilling to provide a needed right of way for necessary transmission facilities within a reasonable period of time.

Improving Reliability of the Bulk Power System

- Enact legislation establishing a regulatory framework to ensure reliability of the bulk power system.

Conclusion

There is much that Congress can do to help electricity markets function better, without dictating to the states the structure of the retail markets within their borders. The longer it takes for Congress to address these issues, the more prevalent and intractable the problems with our wholesale electricity markets will become.

January 16, 2001

NUCLEAR ENERGY INSTITUTE

NEI Position Papers 2001

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Energy Policy Legislation

Description: Electricity demand is growing significantly faster than expected, and construction of new electric generating capacity is not keeping pace with demand. As a result, electricity markets are becoming increasingly volatile. In addition, diversity of fuel sources is one of the greatest strengths of the U.S. electric supply system, but virtually all new power plants being built today are fueled with natural gas. These plants are extremely sensitive to fluctuations in natural gas prices, and natural gas prices have more than doubled over the last 12 months.

New power plants—using a variety of fuel sources—will help maintain diversity of fuel supply, enhance energy security, meet growing electricity demand, protect electricity consumers against volatility in the electricity and natural gas markets. New nuclear and renewable energy plants are particularly important to our energy supply mix and they avoid the emission of carbon dioxide, sulfur dioxide, nitrogen oxides, particulates and other pollutants associated with combustion of fossil fuels to produce electricity. Nuclear power, however, is the only expandable energy source that can provide large-scale power to cities and other urban areas while avoiding emissions.

Status: Despite nuclear energy's strategic value in a balanced supply portfolio, new nuclear power plants may not be built in the short-term because of the financial risk associated with building any large capital-intensive projects (power plants, transmission lines, natural gas pipelines) in a competitive business environment. The industry is now examining the marketplace issues that would lead to the beginning of new plant construction in the next three to five years.

Key Issues/Decisions: Because of the financial risk and the uncertainties associated with the electricity business, which is transitioning from regulation to deregulation, construction of new nuclear generating capacity will require these financial and policy initiatives:

- Accelerated depreciation for new electric generating facilities, including new nuclear power plants. Federal tax laws must be changed to permit depreciation over 7 years instead of the 15-20 years currently required by the tax laws.
- Investment credit during first 10 years of operation for all new nuclear power plants for which a license application is filed with the Nuclear Regulatory Commission after Jan. 1, 2005, and before Dec. 31, 2015. The amount of credit will be commensurate with the value of the tons of carbon emissions and other air pollutants avoided by construction of the nuclear power plant.
- Increase the Department of Energy's nuclear energy research and development programs, consistent with the recommendations of the President's Council of Science and Technology Advisers (PCAST) and the Department of Energy's Nuclear Energy Research Advisory Committee (NERAC). In its June 2000 report, NERAC recommended increasing DOE's nuclear energy R&D funding to approximately $250 million per year by 2005. In comparison to other electricity generating sources, nuclear energy is unequivocally the most economical federal research and development investment. In 1997, the federal government spent five cents on nuclear energy R&D for every kilowatt-hour of electricity generated at nuclear power plants. By comparison, the cost of natural gas R&D per kilowatt-hour, was 41

cents; for solar photovoltaics, $17,006; and for wind energy $4,769. The increased funding should support a more aggressive program to develop innovative techniques to reduce the capital costs of new nuclear power plants; development of potentially attractive alternative design concepts, including smaller, modular reactor concepts; and support for the Nuclear Regulatory Commission's ongoing program to replace its existing, highly prescriptive regulations with a risk-informed, safety-focused regulatory regime

- Amend the Internal Revenue Code to allow new nuclear power plants, built as merchant power plants by unregulated generating companies, to treat annual payments into a decommissioning trust fund as a deductible expense and not as taxable income.
- Require an assessment by the Nuclear Regulatory Commission of whether it needs additional statutory authority and adequate resources to ensure new nuclear power plants will be sited and licensed in an efficient, businesslike manner, and permitted to start operations when construction is completed according to the design requirements, without unnecessary delays that would place private investment at risk.

Options:

- Incorporate a limited portfolio of incentives as described above in comprehensive energy policy legislation to ensure that nuclear energy maintains its position in the nation's electricity supply portfolio.
- Do nothing to encourage construction of new nuclear power plants, and expose the U.S. economy and American consumers to increasing electricity prices, increasing volatility in electricity prices, increasing volatility and dependency on foreign energy supply, and increasing vulnerability to supply/price disruptions in the fossil fuel markets.

Timing/Milestones: Any proposal to encourage construction of new nuclear power plants will occasion significant policy debate. The sooner that debate is joined and the issue(s) resolved, the quicker the private sector can proceed with business planning for, and development of, the next generation of nuclear power plants.

Used Nuclear Fuel Management

Including Yucca Mountain Decision-making

Description: Effective stewardship of used nuclear fuel and other high level radioactive waste for federal government defense programs is essential to the national interest. Non-proliferation concerns also dictate effective management of these materials. The Nuclear Waste Policy Act (NWPA) of 1982 codified the federal government's long-standing obligation to dispose of this material and defined a process for accomplishing this objective. The law intended for DOE to establish a permanent disposal site and begin receiving used nuclear fuel by January 1998. This deadline was not met. Since 1987, efforts to find a disposal site have focused on the scientific study of a desert location at Yucca Mountain, Nev.

Status: DOE is nearly three years in arrears on its statutory deadline for moving used nuclear fuel from power plant sites and other locations. Government default of this obligation exposes U.S. taxpayers to a potential liability more than $60 billion. Although there is still no approved disposal site, the scientific work at Yucca Mountain has progressed significantly. This $6 billion, 13-year effort to determine the suitability of Yucca Mountain has reached a point where a presidential decision can be made within the next year on whether to move forward with the licensing of a facility at that site. There is no reason to under fund this program given that electricity consumers have committed more than $17 billion (including interest) to the Nuclear Waste Fund for this purpose, while only $6 billion has been spent. DOE has developed an extensive scientific safety case that evaluates the ability of the site to protect public health and safety for thousands of years into the future. The state of Nevada and anti-nuclear groups have expressed considerable opposition to this site.

Key Issues/Decisions:

- The NWPA requires the President to approve the selection of a disposal site before the DOE can enter into a three-step NRC safety licensing process to seek approval to construct, operate and eventually close the facility. DOE has committed to making a recommendation on the Yucca Mountain site to the President in 2001. In accordance with the law, the President's decision is subject to challenge by Nevada. A simple majority vote of both houses of Congress would be required to override any such challenge by the state.
- Several lawsuits for breach of this federal obligation have been filed by the operators of nuclear power plants and state governors, attorneys general and public utility commissions. The courts have repeatedly affirmed the government's obligation and determined that DOE has breached contracts with nuclear plant operators. Litigation will now determine the amount of damages to the utilities.
- The law also requires the EPA to establish a radiation standard as a prerequisite to site selection and NRC licensing. EPA's proposals to date have received widespread criticism from the National Academy of Science, Health Physics Society, DOE and NRC. Alternate, science-based proposals have been made as part of EPA's rulemaking on the Yucca Mountain standard and are broadly supported. Related NRC and DOE rulemakings are on hold pending resolution of the EPA's controversial Yucca Mountain radiation standard.
- Each year, the Treasury collects about $700 million in fees from electricity consumers and about $200 million from defense programs, but congressional appropriations for the Yucca Mountain program typically are at a level less than half of these receipts. At least $500

million in appropriations will be needed for FY02 to make up delays resulting from funding shortfalls in past years. Significantly higher amounts will be required in later years if the facility is approved and licensed for construction. There also is a sizable balance of defense payments owed to this project.

- Nuclear plant operators have responded to DOE's default by expanding storage capacity at power plant locations. This option is costly and, in some instances, limited. In addition, a consortium of power plant operators, in partnership with the Goshute Indians, has launched a private initiative, known as Private Fuel Storage, to provide temporary storage at Skull Valley, Utah. While important for private storage of used fuel prior to federal removal, PFS is not a substitute for federal action to build and operate a repository.
-

Options:

- Approve the Yucca Mountain site based on DOE's scientific results. Although this option but would face opposition from Nevada and anti-nuclear groups, a high likelihood of success could be achieve because of the scientific integrity of the study. A final EPA standard for the repository is needed before this can occur.
- Reject the Yucca Mountain site. This would leave the government without a permanent disposal facility and put the federal government and taxpayers at risk for a multi-billion dollar liability. DOE would have to quickly develop other options to address the liability and national energy security risk.
- Defer the decision. Deferring the decision could have an impact on future election cycles. It also could result in additional lawsuits against DOE and billions of dollars being spent on the scientific effort with no resolution of the underlying issues or mitigation of the associated risks.

Timing Milestones:

- Final EPA rule and subsequent NRC rules are needed in summer 2001 to maintain the Yucca Mountain decision-making schedule.
- DOE's scientific recommendation on Yucca Mountain is expected in fall 2001, with a presidential decision late in 2001.
- The current repository schedule could lead to used nuclear fuel disposal beginning in 2010 at the earliest.
- A NRC licensing decision is expected on the Private Fuel Storage initiative in 2001. If approved, the facility could begin operating in 2003.

Tax Treatment of Nuclear Decommissioning

Description: Nuclear power plant owners must accumulate $400 million - 500 million per plant over the plants' 40-year operating period for decommissioning. The Internal Revenue Code and Internal Revenue Service regulations treat annual contributions to decommissioning funds as a deductible expense—as long as the plant is owned by a regulated electric utility subject to cost-of-service regulation. Because of restructuring, generating companies are not subject to cost-of-service regulation and cannot treat contributions to decommissioning trust funds as a deductible expense. In addition, because of state restructuring, many companies are divesting their electricity generation assets, including nuclear power plants. When nuclear power plants are sold, the buyer assumes the seller's obligation to decommission the nuclear plant and, in return, must receive the decommissioning funds already collected by the seller. For these transactions to occur, it is essential that the decommissioning trust funds can be transferred from seller to buyer on a tax-neutral basis. The tax code must be updated to allow these transfers and other transactions created by new state and federal policies. Under current tax law, many of these transfers and transactions would be taxable or trigger some form of tax liability. Unless the tax code is updated to reflect the new business environment, decommissioning trust funds will not be treated equitably and in the manner intended by Congress when it amended the tax laws governing decommissioning in 1984.

Status: This proposal to update tax treatment of nuclear decommissioning funds enjoys strong, bipartisan support. In June 1999, a comprehensive update to the tax laws governing nuclear decommissioning (the Nuclear Decommissioning Funds Clarification Act of 1999) was introduced in the House by Reps. Jerry Weller (R-Ill.) and Ben Cardin (D-Md.), and a bipartisan group of eight other members of the House Ways & Means Committee, and in the Senate Finance Committee by Sens. Frank Murkowski (R-AK) and John Breaux (D-LA). (Act basic provisions in Enclosure). Elements of this legislative proposal were incorporated in the omnibus, $792-billion tax bill passed by the Congress in 1999, and vetoed by President Clinton in September of that year. President Clinton included elements of this proposal in his Fiscal Year 2000 budget and in his comprehensive electricity restructuring legislation. President-elect Bush expressed support for this change to the tax law in his energy policy statement during the campaign.

Key Issues/Decisions: Updating the tax laws to allow electric power companies to reposition their nuclear generating assets in response to state and/or federal restructuring mandates is a high priority (1) to ensure the continued viability of existing nuclear power plants, (2) to ensure that nuclear power plants are not placed at a competitive disadvantage during electric industry restructuring, and (3) to ensure that monies already collected for decommissioning are not depleted unnecessarily by tax liabilities.

Options:

- Incorporate these necessary and appropriate changes to update the tax code into any comprehensive electricity restructuring legislation.
- Incorporate these necessary and appropriate changes to update the tax code into any omnibus tax legislation.

- Incorporate these necessary and appropriate changes to update the tax code into any comprehensive energy policy legislation.
- Do nothing, thus forcing companies to continue the time-consuming and costly process of seeking limited relief from the Internal Revenue Service through Private Letter Rulings.

The Nuclear Decommissioning Funds Clarification Act (H.R. 2038, S. 1308)
Basic Provisions

- **Eliminate the cost-of-service requirement**

  Current law treats annual contributions to decommissioning funds as a deductible expense as long as the utility is subject to cost-of-service regulation. As competition develops, prices for electricity are set by the market rather than through cost-of-service regulation. As a result, electric utilities that are not subject to cost-of-service regulation cannot treat contributions to decommissioning trust funds as a deductible expense. Unless the tax code is updated to reflect the new business climate, contributions to decommissioning trust funds will not be treated in the manner intended by the tax code.

- **Provide an exception to the level funding requirement (1) if regulators allow higher decommissioning charges, or (2) if accelerated funding is required in connection with the transfer of a nuclear power plant.**

  Under current rules, the amount of money a nuclear plant owner can contribute to a decommissioning trust fund is based on the projected decommissioning costs yet to be collected and the remaining plant operating period. This legislation allows two limited exceptions to this "level funding" requirement:

  1. *Under many state restructuring laws, nuclear plant owners are required to accelerate funding of their decommissioning costs over a shorter period of time than the remaining plant life. In such cases, the legislation would allow companies a deduction for those contributions.*
  2. *In cases where nuclear plants are purchased, buyers typically require current plant owners to fully fund the projected cost of decommissioning as part of the transaction, in order to satisfy Nuclear Regulatory Commission requirements for funding assurance. These additional contributions to the fund violate the level funding limitation. The change proposed would allow continued deductibility for this additional funding.*

- **Allow taxpayers to utilize a Qualified Fund to accumulate all monies needed for decommissioning irrespective of the age of the plant.**

  The tax code treats funds collected before 1984 and after 1984 differently. Before the law was changed in 1984, money collected for decommissioning was taxed as income, deposited in "non-qualified funds," and earnings were taxed at the corporate capital gains rate. In 1984, Congress changed the law to allow companies to deduct amounts set aside in "qualified funds." In 1992, Congress lowered the tax rate on fund earnings. This legislation would simply eliminate the arbitrary distinction between non-qualified and qualified funds.

- **Discontinue the requirement that taxpayers obtain a ruling from the Internal Revenue Service before making contributions to a Qualified Fund.**

  Under current law, companies are required to obtain pre-approval from the IRS before making a contribution to a Qualified Fund. This is the only circumstance in which IRS requires prior approval for a deduction. Since every nuclear power plant owner is

required to undergo an annual audit by the IRS, this requirement is duplicative, burdensome and unnecessary.

- **Define "nuclear decommissioning costs" and acknowledge that all such costs are currently deductible when paid or incurred.**
  This technical change provides nuclear plant owners with additional certainty about which decommissioning costs are considered deductible.

Nuclear Energy Research and Development Programs

Description: Nuclear energy research and development remains a national priority at the Department of Energy. Nuclear power plants produce 20 percent of U.S. electricity and emit no air pollutants. Nuclear energy provides the most easily expandable means of providing new sources of electricity *and* reducing the concentration of air pollutants. New research, development and deployment of advanced nuclear power plants are vital for U.S. energy and environmental policy. Nuclear technology also is used in medicine, including one-third of all diagnostic and treatment procedures, as well as other industrial and agricultural uses.

Nuclear energy will continue to provide a unique and secure domestic source of electricity supply well through mid-century. Important to the continuation of U.S. leadership in nuclear energy is the DOE support provided to our nation's universities to sustain our expertise and research facilities. Continued support of nuclear research and development programs is essential to continue advances in nuclear medicine and other nuclear technologies beneficial to society, to guard against the impact of foreign supply disruptions to our energy security and to encourage growth of America's largest source of emission-free electricity. To capitalize on the many benefits of nuclear technologies, research and development of these technologies must be a priority.

In comparison to other electricity generating sources, nuclear energy is unequivocally the most economical research and development investment. In 1997, the federal government spent five cents on nuclear energy R&D for every kilowatt-hour of electricity generated at nuclear power plants. By comparison, the cost of natural gas R&D per kilowatt-hour, was 41 cents; for solar photovoltaics, $17,006; and for wind energy $4,769.

Status: The House and Senate both supported increasing funding for nuclear energy programs in FY2001.

Key Issues/Decisions: Based on the recommendations of the 1997 and 1997 President's Committee of Advisors on Science and Technology (PCAST) reports, the following is a list of R&D programs suggested funding for FY2002:

- Nuclear Energy Plant Optimization—$15 million for activities helping to optimize current operating reactors. This program is cost shared with the Electric Power Research Institute.

- Nuclear Energy Research Initiative—$50 million for advanced research in nuclear science, technology and engineering and $20 million for international cooperation on joint systems development. This grant program is competitive and peer-reviewed.

- Nuclear Energy Technologies—$10 million for continuing activities associated with Generation IV reactor plan, and deployment of advanced light-water

reactors, smaller modular reactors, and gas reactor technology in the United States.

- University Support and Scholarships—$25 million for activities associated with improving critical research reactors at the nation's universities, providing fuel and support scholarships for students at the graduate and undergraduate levels.

- Medical Isotopes Support—$15 million for isotope support for the diagnosis and treatment of disease. Hundreds of hospitals nationwide depend on a stable and reasonably priced supply of medical isotopes.

- Low-Dose Radiation Research—$25 million for a program will produce an enhanced understanding of low-dose radiation effects to assure that public and private resources are applied in a manner that protects public health and safety without imposing unacceptable risks or unreasonable costs on society.

- Nuclear Nonproliferation—$350 million including $30 million for a fabrication facility for the disposition of excess weapons grade nuclear materials through the use of mixed-oxide fuel in commercial reactors in the United States and Russia.

- AAA—The Committee recommendation includes $75 million to continue the assessment of accelerator transmutation technology. This technology may be able to significantly reduce the radioactivity and radiotoxicity of certain isotopes. Funding also would be used for development of an accelerator-based tritium source and additional research on electricity production.

- International Nuclear Safety Program & Nuclear Energy Agency—$35 million for international nuclear safety programs at DOE and NRC. These are programs aimed at the safe commercial use of nuclear technology around the world.

Options:

- Fund these R&D programs at the suggested levels. Move toward the PCAST funding levels recommended in the 1997 and 1999 reports.

- No change in current year funding. This would lead to a possible decline of the nation's nuclear technology leadership in the commercial sector and at the nation's research facilities, and prevent new discoveries in medicine.

- Reduce funding for nuclear energy R&D despite the fact that it is the most costs-effective program in terms of return on investment for U.S. energy supply.

Timing/Milestones: The DOE's budget process and congressional appropriations usually are completed in October.

POWERFUL PARTNERSHIPS:

THE FEDERAL ROLE IN INTERNATIONAL COOPERATION ON ENERGY INNOVATION

A REPORT FROM THE

PRESIDENT'S COMMITTEE OF ADVISORS ON SCIENCE AND TECHNOLOGY

PANEL ON INTERNATIONAL COOPERATION IN
ENERGY RESEARCH, DEVELOPMENT, DEMONSTRATION, AND DEPLOYMENT

JUNE 1999

Initiative	A PORTFOLIO OF ENERGY SUPPLY RD[3]	Page	FY01	FY05
Widespread Renewables	--RD[3] on industrial-scale biomass power/coproducts; restore degraded land --Develop integrated renewable/hybrid systems for rural areas --Accelerate deployment of grid-connected intermittent/hybrid systems --Assess renewable energy resources by region --(RD[3] on solar thermal electric; support strong domestic RD[3] efforts)*	5-11 5-14	$40 M	$80 M
Fossil Fuel	--Promote energy/environment reforms in support of coproduct strategies --RD&D on low-cost hydrogen production and byproduct carbon recovery --Carbon sequestration standards/regional assessments/ reservoir analyses --(R&D to exploit energy of methane hydrates in climate-friendly ways)*	5-21 5-23	20	40
Nuclear Energy	--Add international component to Nuclear Energy Research Initiative --Expand/strengthen international studies of spent fuel/high-level waste --Pursue new international agreement on fusion R&D --(Improve safety and security of nuclear facilities worldwide)*	5-27 5-28	10	20
	A SET OF MANAGEMENT RECOMMENDATIONS			
Agency Management	Establish NSTC working group (WG) on Strategic Energy Cooperation --NSTC WG would have interagency secretariat/external Advisory Board --WG would assess the IERD[3] portfolio, guide/coordinate agency programs --WG would strengthen agency internal/external review capabilities --Agencies to use competitive solicitations to identify best approaches --Agencies identify accountable management chains with authority/budgets --Strengthen agency international capabilities by training/detailing staff --Establish Strategic Energy Cooperation Fund	6-13 6-14		
TOTAL			$250 M	$540 M

* Initiatives in parentheses are described in the chapters but not in the Executive Summary; budget totals include these initiatives.

REPORT TO THE PRESIDENT ON

FEDERAL ENERGY RESEARCH AND DEVELOPMENT FOR THE CHALLENGES OF THE TWENTY-FIRST CENTURY

PRESIDENT'S COMMITTEE OF ADVISORS ON SCIENCE AND TECHNOLOGY

PANEL ON ENERGY RESEARCH AND DEVELOPMENT

NOVEMBER 1997

[redacted]

Summary of Funding Recommendations

Table 5.3 summarizes the funding recommendations for both fission energy and fusion R&D.

Table 5.3: Recommended DOE Investment in Fission and Fusion Energy R&D
Millions of As-Spent Dollars

Program Element	FY 1997 Actual	FY 1998 Request	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003
[redacted]							
Fission Energy Research Initiative	0	0	20	70	95	100	105
[redacted]							
Education[a]	6	6	6	6	6	6	6
[redacted]							
Environmentally Sited Technology	30	25	*	*	*	*	*
[redacted]							
Other NE Activities[b]	305	311	?	?	?	?	?
[redacted]							
Fission Energy Subtotal	335	335	250	270	295	330	335

[a] Includes student fellowships and fuel support for university programs.
[b] Congress appropriated $5 million for education and to fund the nuclear university or consortia nuclear R&D.
[c] The Panel neither endorsed nor makes recommendations on electromagnetic technology, which is evaluated for a program other than nuclear energy. Its funding would add to the fission R&D pool.
[d] See R&D. The Panel makes no recommendations on these programs.

POLICY ISSUES

There are eight policy issues that will determine the future of fission as a viable energy option in the near- and long-term: the global policy context, deregulation of the electric power industry, the licensing renewal process, radioactive waste management, R&D program management, human resource development, export policy, and Administration acknowledgment of nuclear power as a zero-carbon energy technology.

5-37

Nuclear Liability Insurance

Description: The Price-Anderson Act authority that provides immediate and substantial compensation to the public in the event of a nuclear incident at a commercial nuclear power plant or a Department of Energy (DOE) facility expires on August 1, 2002. Coverage under the Price-Anderson Act for commercial nuclear plants incurs no cost to the federal government or taxpayers.

This act was first passed in 1957, providing $560 million in coverage for each incident. It will be considered in the 107th Congress for its fourth renewal to provide over $9.5 billion in coverage. The act provides coverage for precautionary evacuations and emergency out-of-pocket expenses; reduces the delays often inherent in tort cases; and consolidates all cases in a single federal court. Each nuclear power plant purchases all the insurance available ($200 million per plant site) from private insurers for immediate response to an incident. An additional $9.3 billion of insurance would be paid by the commercial nuclear power industry via retrospective assessments (presently up to $88 million for each of the nation's 106 covered reactors). DOE provides equivalent coverage ($9.5 billion) for its nuclear activities. In the unlikely event that more funds would be required, Congress has indicated in the Act that it will take whatever action is determined to be necessary to provide full and prompt compensation to the public for all public liability claims.

Status: Reports to Congress required by current law by the Nuclear Regulatory Commission (1998) and the DOE (1999) recognize that the Act has worked as it was designed and strongly recommend that it be renewed without substantial change. Bipartisan legislation was introduced in the Senate in the 106th Congress for the simple renewal recommended in the NRC and DOE reports. The nuclear industry supports such a legislative approach for consideration by the new administration and the 107th Congress.

Key Issues: Coverage for new or extended DOE contracts or for new commercial facilities will not be provided without renewal. DOE would be denied qualified contractor expertise to perform its national defense and facilities cleanup missions without renewal. During the past renewal all of the issues put forth by the opponents of the legislation were addressed (the attached Frequently Asked Questions regarding the Price-Anderson Act provides background on all of these issues).

Options:

- Permanent authorization of the provisions of the bill is an option that Congress should consider.
- Simple renewal based on the reports from NRC and DOE could assure early enactment.
- Doing nothing will put nuclear-related defense and DOE non-defense programs in jeopardy.

Timing: Action early in the first session of the 107th Congress is important. The last renewal effort incurred a break in authorization that caused difficulty for DOE programs.

Attachment 1

RENEWAL OF PRICE-ANDERSON ACT
Frequently Asked Questions

The Price-Anderson Act—signed into law in 1957 as an amendment to the Atomic Energy Act of 1954—provides for payment of public liability claims in the event of a nuclear incident. Since its inception, the act has been extended three times, twice for successive 10-year periods and once in 1988 for 15 years. Unless Congress renews the Price-Anderson Act, it will expire on August 1, 2002.

What are the key features of the Price-Anderson Act?

The Price Anderson Act:

- Assures the availability of billions of dollars to compensate members of the public who suffer a loss as the result of a nuclear incident;
- Establishes a simplified claim process for the public to expedite recovery for losses;
- Provides for immediate emergency reimbursement for costs associated with any evacuation that may be ordered; and
- Establishes liability limits for each nuclear incident involving commercial nuclear energy and government use of nuclear materials, and provides a guarantee that the federal government will review the need for compensation beyond that provided.

How does Price-Anderson work?

- *It provides more than $9.5 billion of coverage through two layers of protection. For the primary layer, the act requires nuclear power plant operators to buy all the nuclear liability insurance that is available or provide an equal amount of financial protection. That insurance is currently $200 million. For the second layer, the power plant operators are assessed up to $88 million for each incident that exceeds the primary layer (at a rate not to exceed $10 million per year per reactor). In addition, Congress may establish additional assessments if the first two layers of coverage are not adequate to cover claims.*
- *The act provides the same level of liability for DOE facilities as for the commercial sector.*
- *Research and/or small power reactors are required to self-insure or insure at least the first $250,000 of any nuclear incident. The federal government also provides up to $500 million of indemnity. At present, there are no small power reactors in operation that qualify for this coverage.*

Does Price-Anderson only cover incidents at nuclear reactors and government facilities?

- No. The Price-Anderson Act also provides coverage for transportation of radioactive materials. Transportation of radioactive materials in the United States has an exemplary safety record. For example, no container has leaked or cracked in any way during the nearly 3,000 shipments of used nuclear fuel since 1964.

If an incident occurred today, how much money would be available to compensate the public for damages?

- More than $9.5 billion dollars is available to pay public liability claims through insurance ($200 million) and assessments ($9.3 billion). Assessments are adjusted for inflation in five-year increments. In addition, Congress could request additional assessments, if necessary.
- For DOE facilities, coverage totals $9.5 billion. Similarly, Congress could provide additional funding, if it determines that the current amount is not adequate.

How does the public benefit from Price-Anderson?

- Price-Anderson coverage assures the availability of substantial funds to provide prompt compensation to any member of the public who is harmed.
- The law eliminates the delay that plaintiffs in ordinary tort cases must incur before they can recover for injuries or other damages.
- In the case of a serious nuclear incident (an "extraordinary nuclear occurrence" in the terms of the Price-Anderson Act), the defendants are required to waive certain defenses to which they would otherwise be entitled in the absence of the Price-Anderson Act.
- Without Price-Anderson, compensation to members of the public would be delayed because of delays in determining the appropriate court in which to hear the case. Price-Anderson provides for all cases from a single incident to be heard in a single federal court.

How well did Price-Anderson coverage work at Three-Mile Island?

- The Price-Anderson Act covers residents near the Three Mile Island plant and any other individuals who filed claims after the 1979 accident.
- Within 24 hours of the state's precautionary evacuation for residents near the Three Mile Island plant, a claims office in nearby Harrisburg was opened to disburse emergency assistance payments.
- Payments totaling $1.2 million for travel, temporary lodging and other needs were made to 3,170 families, and $92,400 was paid to 636 persons for lost wages.
- A $20 million economic injury fund and a $5 million public health fund also were established.
- In total, over $70 million has been paid under Price-Anderson for the Three-Mile Island accident.

If an incident were to result in damages that exceed the current limit of $9.5 billion, wouldn't the limit on liability prevent some members of the public from fully recovering for their damages?

- The cap on liability does not limit full recovery by the public. The explicit language of the Price-Anderson Act requires Congress to consider further compensation for members of the public filing claims if industry and federal government liability is exceeded.

Isn't it true that, except for Price-Anderson coverage, a member of the public would be able to fully recover for damages?

- Not necessarily. Unlimited liability does not guarantee full recovery. It simply means recovery up to the level of resources a company might have available to pay any claims.

Is Price-Anderson a subsidy to the nuclear industry?

- The federal government does not use taxpayer funds to pay claims in the event of a nuclear incident, so there is no "subsidy" to the industry.
- In 43 years of Price-Anderson protection, nuclear insurance pools—not the federal government—have paid a total of $151 million for claims.
- The Price-Anderson Act ensures that full compensation will be available in the event of a nuclear incident. In the absence of the law, members of the public filing claims would need to overcome substantial obstacles to recovery posed by ordinary tort law, and the nuclear industry would not have predictable levels of liability.

Isn't Price-Anderson type coverage unique to the nuclear industry?

- The federal government provides insurance mechanisms for losses associated with agricultural disasters, floods, banks, savings and loan company failures, home mortgages, Social Security, Medicare, crime and maritime accidents.
- Under current law, a limitation on liability exists for oil spills, bankruptcy, worker's compensation maximum payments, and medical malpractice.

The Price-Anderson Act expires on August 1, 2002. Should Congress extend it?

- Yes. Price-Anderson coverage provides a system for more comprehensive coverage for the public than any other kind of coverage in the event of a nuclear incident. If the coverage were not extended, federal nuclear facilities would not be able to hire private contractors to operate them, or to continue important environmental restoration work at federal weapons facilities. Commercial nuclear power plants provide one-fifth of all U.S. electricity. However, without Price-Anderson coverage, no new emission-free nuclear power plants would be built to meet growing electricity demand while protecting the nation's air quality.

Do the Department of Energy and the Nuclear Regulatory Commission support extension of the Price-Anderson Act?

- DOE and the NRC submitted separate reports to Congress supporting the renewal of the Price-Anderson Act. Both agencies made minor recommendations to improve the Act. The industry supports these recommendations, except for the NRC's suggestion that the annual assessments be increased from $10 million to $20 million.

If Congress does not decide to extend Price-Anderson, why not just leave the public protection provisions in place?

- The only part of Price-Anderson that expires on August 1, 2002, is the authority of the Nuclear Regulatory Commission and the Department of Energy to enter into new indemnity agreements after that date. Existing indemnity agreements would continue in full force and effect.
- Without renewal, new nuclear power plants could not be covered, nor could new DOE contracts have the indemnity provision.
- Without renewal, DOE's program for operating existing nuclear facilities and cleaning up closed nuclear facilities would be severely hampered.

Are homeowners precluded from buying nuclear insurance protection?

- There is nothing in the Price-Anderson Act that requires a nuclear exclusion clause in homeowners policies. However, the same insurance companies that provide homeowners policies also provide the nuclear industry with the insurance required under the Price-Anderson Act. Because the nuclear industry, by law, is required to purchase this policy, there is no need for homeowners to buy this coverage as part of their insurance. Similarly, under the Price-Anderson Act, the federal government provides this protection for DOE facilities, so there is no need—or benefit—for a homeowner to buy duplicate coverage.

Why are the costs of investigating and defending claims included in the Price-Anderson limit on liability?

- The inclusion of these costs within the policy limit (which has been a central tenant of Price-Anderson since 1957) provides the certainty that insurers need to obtain the largest amount of financial protection available to protect the public.
- If claims costs were not included in Price-Anderson, the limit on liability would be illusory.

Should the primary layer of insurance be increased?

- Price-Anderson requires that nuclear plant operators buy the maximum amount of liability insurance commercially available – currently $200 million per plant site. Any increase in the primary layer above this amount depends entirely on the availability of insurance capacity in the private marketplace. With a renewed version of Price-Anderson, very similar to the current one, private insurers expect that the primary layer could be increased above $200 million.

Shouldn't contractors that operate DOE facilities be accountable for their actions?

- DOE contractors are legally accountable for operations at federal facilities. They also have many incentives to operate nuclear facilities safely. Poor contractor performance could lead to debarment from future DOE contracts, fee reductions, nonrenewal or termination of their contract(s), which could be damaging to the contractors' reputations.

Should DOE be able to recover any amounts paid if the contractor's behavior has involved "gross negligence" or "willful misconduct?"

- After a thorough examination of this issue when it renewed the Price-Anderson Act in 1988, Congress did not provide exclusion for damages in such cases. It is virtually impossible to distinguish among levels of negligence in today's tort law; so more litigation would weaken Price-Anderson's "omnibus" feature.

Does DOE have other authority to provide indemnification for its contractors?

- Public Law 85-804 could be used to cover some defense-related activities, but would not provide as much protection to the public as Price-Anderson. For example, it does not cover precautionary evacuations, or provide for single federal court jurisdiction, automatic coverage for subcontractors or transporters, advance emergency payments, or mandatory waivers of tort defenses in the event of a large accident (an "extraordinary nuclear occurrence").

Should DOE contractors be required to purchase their own nuclear liability insurance?

- DOE has the option of requiring its contractors to buy nuclear liability insurance, but has chosen not to exercise that option because the cost would be passed through to the government. It is cheaper for the government to continue to self-insure. Also, it is not clear that the commercial insurance market would provide liability coverage to private contractors working at government facilities because of the unique nature of the facilities.

Nuclear Waste Fund (NWF)
Budget Structure

Description: The Nuclear Waste Fund (NWF) was established in the Nuclear Waste Policy Act of 1982 as the funding mechanism for the Department of Energy's nuclear waste disposal program. The NWF is unique in that it is financed through contracts between electric utilities and DOE that establishes a fee of one-tenth of a cent per kilowatt-hour on electricity produced at all nuclear power plants after April 7, 1983, and an equivalent one-time fee for used nuclear fuel produced prior to that time. This fee amounts to a tax on consumers of electricity from nuclear power plants.

The fee was established to provide adequate funding—on a life cycle cost basis—to pay for long-term stewardship of used nuclear fuel by the federal government. It was intended that the fee would result in more revenue than that needed to defray program costs in the early years of the DOE program. However, this balance will be needed in future years to cover program costs as nuclear plants are closed and are no longer paying fees. The NWF was originally established as an off-budget account, i.e., revenues and expenditures from the fund were excluded from the budget totals of the U.S. Government. However, during the late 1980s and early 1990s, the fund was subject to traditional federal budget controls, including appropriations caps and pay-as-you-go (PAYGO) rules.

Status: The NWF has a balance of more than $11 billion, and that balance is growing at a rate of about $1 billion annually. The lack of an effective mechanism to reconcile NWF fee revenues with annual spending requirements has resulted in treating the nuclear waste fees as a general revenue tax, rather than a contractually based user fee, for federal budget purposes. The balance may reach $15 billion by 2005. These projections, in turn, inflate the government-wide surplus estimates. At the same time, the current budget baseline projections make no provision for future spending increases needed for building a permanent repository. State governors, attorneys general and public utility commissions support changes in treatment of the fee so that the balance of the fund can be used for the nuclear waste management program when needed.

Key Issues/Decisions: The budget for the NWF should be restructured to enable adequate financing for the program to move forward. The NWF has three unique characteristics that justify modifications of the budgetary treatment:

- The purpose of the fund is to finance the provision of services for the disposal of used nuclear fuel and high-level nuclear waste from federal defense programs, and the beneficiaries of that service (e.g., electricity consumers) are required to pay the full cost of that service;

- The program is entirely financed through a separate fee that was established by statute for this sole purpose. The fee has no other reason for existence other than to fund the program; and
- The government's obligation to implement the program for the disposal of nuclear waste is based not only in statutory requirements but also in contractual agreements between the DOE and individual electric utilities.

Options:

- Restructure the NWF as a separate revolving fund, subject to Executive Branch and Congressional controls, but outside the spending caps applicable to annual domestic discretionary appropriations. The revolving fund re-establishes the business character of the program and provides a predictable and stable source of funding to meet future program requirements, without adverse impact to other domestic appropriations.
- Require that annual spending levels be set at least equal to annual receipts, similar to the budgetary treatment of the Airport/Airway Trust Fund. This would provide adequate funding over the next several years to move forward with the permanent repository project (once the site determination process is completed), but may still fall short of longer term funding requirements, which will require access to the prior fund balance.
- No change. The funding projections are insufficient for the timely development of a permanent repository under the current schedule. Establishing a new set of budget caps will not provide the necessary allowance for funding growth. This leaves the program vulnerable to trade-offs between funding related delays or cuts in other domestic discretionary programs.

Timing/Milestones: Decisions on the FY2002 budget will be required in early February 2001. Funding increases to support Yucca Mountain licensing and program implementation (assuming a favorable outcome of the site determination process) will be needed beginning in FY2002.

Nuclear Energy Issues in Electricity Restructuring

Description: To date, 25 states—representing about 70 percent of all electricity consumers—have restructured their electric power sector. Of the 103 nuclear plants in the United States, 60 are in states that have restructured. The nuclear energy industry has identified a number of general principles and specific policy proposals that should be reflected in state or federal restructuring initiatives. These principles and policy proposals serve two objectives: (1) removing impediments that could place nuclear power plants at a competitive disadvantage; and (2) ensuring that nuclear operating companies have maximum possible flexibility to reposition their nuclear generating assets.

The positive outlook for U.S. nuclear power plants in competitive markets is in stark contrast to speculation several years ago, when industry restructuring at the state level was just beginning and competitive markets were in their infancy. Many predicted that nuclear power plants would not be economic and would be shut down prematurely. Since then, the performance of these facilities has improved dramatically; the cost of electricity from other sources has increased; and surplus electric generating capacity in most regions of the country has all but disappeared. Today, virtually all nuclear power plants are expected to operate to the end of their 40-year licenses, and most will renew their licenses for an additional 20 years.

Status: State restructuring initiatives to date generally recognize that the electric power industry must have a reasonable opportunity to recover the capital already invested in power plants and other assets, and the companies' right to continue collection of funds for nuclear plant decommissioning.

Key Issues/Decisions: Federal restructuring legislation may be appropriate to articulate general principles that must be followed by the states if they decide to restructure; and to correct specific inequities or outdated provisions in federal legislation that can only be addressed at the federal level.

The general principles should include:

- An unequivocal declaration that the transition to competition must honor previous regulatory commitments related to the return of and return on capital invested in nuclear power plants.
- Because decommissioning of nuclear power plants is judged a public health and safety imperative by the Nuclear Regulatory Commission, federal legislation should assure continued recovery of decommissioning funding in such a way that unfunded decommissioning costs continue to be treated as a regulatory obligation, not subject to market risks.
- If states or the federal government establish requirements for disclosure and labeling of electricity supply, such requirements must not discriminate against one source. For example, nuclear energy should not be adversely discriminated against by requiring disclosure of nuclear wastes that are controlled in accordance with federal standards to protect public health and safety. Such waste by-products should not, under any circumstances, be included in the same category as fugitive emissions of air pollutants, for example.

The specific policy proposals should include the following actions:

- Update the tax laws governing treatment of decommissioning funding to reflect the new competitive business environment *(see Issue Paper on Tax Treatment of Decommissioning Funds)*.
- Amend the Atomic Energy Act to change certain outdated provisions by: (1) eliminating the statutory requirement that the Nuclear Regulatory Commission conduct antitrust reviews; (2) eliminating the statutory prohibition on foreign ownership of U.S. commercial nuclear facilities; (3) providing the NRC discretion to determine the type of hearing required in licensing proceedings; and (4) granting the NRC authority over former licensees with respect to decommissioning funding. The NRC supports these changes to the Atomic Energy Act.

Options:

- Incorporate the general principles and specific policy proposals in any comprehensive restructuring legislation.
- Pursue necessary changes to the Atomic Energy Act independently of restructuring legislation. These changes update the Atomic Energy Act to reflect current business and regulatory realities, and improve the NRC's ability to conduct its affairs efficiently.
- Pursue the necessary updates to tax treatment of decommissioning funds separately from federal restructuring legislation. These changes are necessary in light of state restructuring initiatives already accomplished.
- Do nothing. Rely on state restructuring initiatives to responsibly manage national policy issues, such as stranded cost recovery, decommissioning and labeling/disclosure. States invariably will pursue different options, which would not address differing regional and state approaches.

Environmental Benefits of Nuclear Energy

Description: Emission-free electric generation technologies, including nuclear power plants, are not currently recognized as compliance options under the Clean Air Act. The Clean Air Act recognizes only reductions from sources of pollution, and provides no credit to technologies that avoid emissions, although the compliance burden and costs imposed on polluting sources would be significantly higher in the absence of emission-free generation. Nuclear power plants represent nearly 70 percent of the emission-free electricity generation in the United States.

U.S. nuclear power plants are also the single largest factor in the federal government's voluntary program to reduce carbon dioxide emissions, established under Section 1605(b) of the 1992 Energy Policy Act. Improved efficiency at U.S. nuclear power plants accounted for 47 percent of the carbon reductions achieved under that program. Higher output from nuclear power plants, and new nuclear plants, are essential if the United States hopes to minimize the economic impact associated with international efforts to mitigate carbon emissions.

If fossil fuels had been used to produce the electricity generated by nuclear power, U.S. carbon emissions in 1999 would have been higher by 167 million tons. For perspective: without existing nuclear capacity, the emissions reduction contemplated by the Kyoto Protocol would increase by more than 50 percent.

Status: Currently, emission-free technologies are not part of the environmental regime for emissions trading. As lawmakers develop public policy on air quality, they should recognize that a ton of pollution avoided is as valuable as a ton reduced. The challenge for Congress is to develop public policy that will fully recognize and reward technologies that avoid the production of greenhouse gases and other air pollutants in tandem with efforts to reduce emissions from existing and future sources. Effectively crafting tax or other economic policies that encourage the use of low- or non-emitting technologies can produce such an outcome.

Key Issues/Decisions: In the context of clean air compliance, the major issue for nuclear energy is defining viable techniques to recognize the clean air compliance value of emission-free electric generation. This issue—capturing the economic value of emission-free generation—is particularly important as the U.S. electricity industry is restructured and the regulated, cost-of-service structure gives way to a competitive market. An emission-free technology's contribution to clean air compliance is an environmental service that has value in the competitive marketplace. That value must be recognized and priced separately, and Congress must establish policies to provide monetary credit for emissions avoidance in energy and environmental policy.

Options:

- The Department of Energy and the Environmental Protection Agency, working cooperatively, should identify one or more mechanisms to compensate nuclear power plants for the environmental service they perform when they increase their output above a specified baseline by uprating plant capacity, or for the "new" electric generation realized if a company renews a nuclear power plant license to operate beyond the initial 40-year license

term.

- Allowing nuclear power plants to participate in the clean air compliance regime would provide an incentive to nuclear generating companies to increase output from nuclear power plants, and to renew their operating licenses. This approach would also afford polluting sources additional flexibility, by providing an additional source of "offsets" that would reduce their compliance burden and costs.

- Doing nothing would unnecessarily advantage selected fuel sources. Other electricity providers may not move toward cleaner electricity sources, and jeopardize the nation's ability to meet long-term air quality goals.

Federal Policy on Radiation Protection Standards

Description: The lack of a uniform federal policy on radiation protection standards creates significant problems for the Department of Energy (DOE) in carrying out several major programs. Such problems include inefficient, conflicting, and duplicative regulation that involves compliance costs that could exceed hundreds of billions of dollars and extend for decades into the future –without a demonstrated commensurate benefit to protecting health and safety.[1]

Status: The status of three programs impacted include the following:

- Cleanup and Decommissioning of Nuclear Defense Facilities: The DOE has delayed issuance of its radiation standards for site cleanup due to disagreement with the Environmental Protection Agency (EPA) over the form and substance of the standards. The source of this disagreement arises primarily from overlapping authorities assigned to the agencies by the Atomic Energy Act and a number of environmental protection statutes. The Nuclear Regulatory Commission (NRC) has a similar conflict with the EPA, although the NRC has gone forward with issuance and implementation of its radiation standards –which are essentially the same as those proposed by the DOE. DOE spent about $52 billion for cleanup from FY 1989 through FY 1999. Projected funding for FY2000 through FY 2070 ranges from $151 to $195 billion (in 1999 dollars).

- Disposal of Used Nuclear Fuel: The DOE is awaiting radiation protection standards for licensing a proposed deep geologic repository for used reactor fuel and high-level radioactive waste at Yucca Mountain, Nev. Under the Nuclear Waste Policy Act, as amended, the standards are to be issued by the EPA "based upon and consistent with the findings and recommendations of the National Academy of Sciences (NAS)" and implemented in NRC regulations for licensing the repository. Instead, the EPA has proposed standards that do not confirm with the NAS recommendations, are not based on sound science, and will have the effect of substantially increasing the cost and duration of the repository licensing process, possibly to the extent of making the project infeasible, or even impossible to license. The NRC already has proposed standards that are consistent with the NAS recommendations, are based on the best available science, and are practicable for licensing of the repository. According to DOE estimates, lifecycle funding for the repository could exceed $55 billion, based on using NRC standards. The implications of complying with EPA's proposed standards are expected to drive repository costs much higher, and without any measurable improvement in public health and safety.

- Materials Release: DOE must ensure that the removal, or "release," of solid materials without restrictions from its facilities is fully protective of public health and safety. The process of material release is especially important to support ongoing cleanup activities. Past activities have undermined public confidence in the controls imposed by the department. Absent public confidence, DOE cannot complete its missions in a cost-effective way. In

[1] GAO/RCED-00-152, "Radiation Standards: Scientific Basis Inconclusive, and EPA and NRC Disagreement Continues" (June 2000).

October, DOE proposed a new policy for controlling the release of scrap metal. The new policy establishes dual standards and is inconsistent with the approach under development by the International Atomic Energy Agency (IAEA) and the European Union (EU). This latter issue is important due to international commerce considerations.

Key Issues/Decisions: Federal radiation protection policy should protect public health and safety, make the best use of public funding and resources, and help build public trust and confidence in federal decisions and programs. The policy should produce radiation standards that are based on the best available science, are uniform, and are applied consistently across federal programs. Duplicative and conflicting regulation by federal agencies should be avoided.

Options:

- Pursue legislative reform to eliminate overlapping and conflicting authorities and responsibilities between federal agencies for radiation protection.
- Initiate actions to produce uniform federal radiation protection standards.
- Reach agreement with EPA regarding DOE issuance of the department's standards for site cleanup that are consistent with those issued previously by the NRC.
- Encourage EPA to issue radiation standards for licensing a proposed repository at Yucca Mountain that are science-based and consistent with NAS recommendations.
- Collaborate with the NRC and IAEA to ensure that material release standards used by DOE are based on the best available science and consistently applied.
- Take no action. Continued dual regulation and confusion over radiation protection standards could cause needless expenditures of billions of taxpayers dollars and potentially put public health and protection at risk.

Nuclear Fuel Cycle

Description: There is a near-term need to focus administration and Congress on strengthening the nation's nuclear fuel supply. Prior government policies, including the disposition of uranium from the historic non-proliferation agreement with the Russian Federation and uranium inventories that were transferred from DOE to the United States Enrichment Corporation (USEC) upon its privatization, created a great deal of uncertainty in commercial nuclear fuel markets. National security and energy policy should fully support the U.S.-Russian highly enriched uranium (HEU) agreement, foster the reliability of nuclear fuel supply, and encourage the research, development and deployment of advanced uranium enrichment technology within the next five years.

Status: Some U.S. uranium producers (primarily in Wyoming and Texas), the sole U.S.-based uranium converter (Illinois) and the sole U.S. uranium enricher (with facilities in Ohio and Kentucky) have worked with Congress and the administration regarding their particular business challenges. Congressional hearings were held during 2000 on the impact of privatization on the fuel markets and on the issues surrounding USEC's role as the government's agent in the U.S.-Russian HEU agreement.

The report accompanying the FY 2001 Energy and Water Development Appropriations Act directs DOE to report to Congress by Dec. 31, 2000 on how it will: ensure that current congressionally directed actions regarding the fuel industry are being met; ensure that U.S. conversion capability is not lost; and propose additional recommendations supporting the uranium, conversion and enrichment industries, including new technology development.

On June 21, USEC announced that it would cease uranium enrichment operations at the Piketon, Ohio gaseous diffusion enrichment plant beginning in June 2001. This announcement generated concern from unions and others concerned about the impact on workers and energy policy. On Oct. 4, 2000, President-Elect Bush wrote to Ohio Gov. Bob Taft expressing his concern regarding the Piketon plant closure. He wrote that it "would compromise our long-term national security interest in a continued safe supply of enriched uranium for our defense and energy needs." Bush committed to: "aggressively explore" how Piketon workers and facilities can serve our national interest; pursue research and development of new uranium enrichment technologies; ensure that congressionally committed resources for decontamination and decommissioning will be available in a timely manner; and direct DOE to explore other new research opportunities for Piketon. On Oct. 6, 2000, DOE announced a program to put the plant on stand-by and build an advanced enrichment technology demonstration plant in Piketon. The Clinton administration plan would also accelerate certain plant cleanup activities.

Key Issues/Decisions:

- The U.S. government should support the U.S.-Russian HEU agreement.
- The federal government should move forward with a research arrangement that promotes the timely commercial deployment of advanced enrichment technology in the United States.

- The federal government should consider steps it can take to foster U.S. nuclear fuel production.

Options:

- Assure that the US-Russian HEU agreement remains viable for the remaining 13 years of its initial 20-year term. Look to additional opportunities to support non-proliferation objectives.
- Support research, development and deployment of advanced enrichment technology in the United States in the next five years by leveraging government and private resources.
- Do nothing. This option may lead to collapse of the U.S.-Russian HEU agreement and loss of its important non-proliferation benefits, increased risk and volatility in uranium, conversion and enrichment supply, and loss of U.S. capability in commercial and defense uranium enrichment production.

Timing/Milestones:

- DOE is expected to send a report to Congress on Dec. 31, 2000 regarding its proposals for the uranium, conversion and enrichment industries.
- USEC is scheduled to cease operations at Piketon, Ohio plant in June 2001.
- New contract for delivery of former weapons material under U.S.-Russian HEU agreement must be in place by end of 2001.
- USEC, Inc. and DOE will complete the first year of a cooperative research and development agreement (CRADA) on design of key components, refurbishment of specific facilities and future deployment plan. Future funding and management decisions must be made in 2001.

Non-proliferation and Nuclear Energy

Description: The end of the cold war and the lessening of East-West politico-military tensions present an opportunity to dispose of the thousands of nuclear weapons deemed excess by both superpowers. As the Russian economy continues to struggle, concerns increase that Soviet-era controls over weapons and fissile material may dissolve for lack of funding. This raises concerns regarding international terrorism, or the prospect that weapons could be sold on the black market for use by rogue states wishing to gain leverage in age-old regional rivalries. Civilian nuclear energy programs—under the continued political and technological leadership of the United States—are essential resources in containing the proliferation of nuclear weapons.

Status: Two vital programs exist to reduce stockpiles of weapons-grade uranium and plutonium. In 1993 the United States and Russia signed a 20-year agreement that calls on Russia to dilute 500 metric tons of highly enriched uranium (HEU) from dismantled nuclear weapons into low enriched uranium (LEU) for use as civilian reactor fuel. To date shipments to the U.S. from blended-down weapons material represents the equivalent of 4,000 nuclear warheads.

Efforts to dispose of surplus weapons plutonium are also at hand. In June 2000, the U.S. and Russia agreed to dispose of a combined 68 metric tons of weapons-grade plutonium. Both countries will use the material as civilian reactor fuel called the Mixed Oxide (MOX) program, with the balanced slated for immobilization and geologic disposal. Concerns over how to finance a Russian MOX facility capable of turning the plutonium into civilian fuel prompted G-8 leaders to promise to devise multilateral financing mechanisms in time for next year's meeting in Genoa. The U.S. Congress committed $200 million in each of the past two legislative sessions for this effort. Moreover, legislation introduced this year by Sen. Pete Domenici (R-N.M.) provides financial incentives to place increasing quantities of Russian weapons derived fissile material under international safeguards. The bill makes certain international loans contingent upon further sequestering of fissile material under IAEA supervision.

Key Issues:

- Continue U.S. leadership in devising, implementing and negotiating these agreements. These "swords into plowshares" efforts improve national and energy security, and help lessen the likelihood of terrorism with nuclear weapons.
- Expedite plutonium disposition efforts in Russia. At current levels, it is estimated that it will take 17 years for Russia to dispose of its plutonium inventory.
- Commit additional R&D funds to proliferation-resistant advanced reactors, and proliferation-resistant fuel.

Options:

- Support the U.S.-Russian HEU agreement and continue funding national and international MOX efforts.
- Strengthen existing HEU and plutonium programs through enhanced commercial opportunity. Efforts to build MOX fuel fabrication facilities in the U.S. and Russia

should receive continued and enhanced support. Commercial reactors, nationally and internationally, should be encouraged to use MOX fuel.

- If deemed scientifically safe, the government should expedite the proposed used fuel repository at Yucca Mountain as a way of centralizing the storage of used reactor fuel in the United States.

Timing/Milestones

- The 2001 G-8 meeting is scheduled to be held in Genoa, Italy to develop international financing options for Russian MOX fuel program.
- A new contract for delivery of former weapons material under the U.S.-Russian HEU agreement must be in place by the end of 2001.

Disposal of Low-Level Radioactive Waste

Description: Many beneficial activities use radioactive materials and produce low-level radioactive waste. These activities include electricity generation, biomedical and pharmaceutical research, manufacturing, and diagnosis and treatment of disease. Low-level waste (LLW) includes items like gloves and other protective clothing, glass and plastic laboratory supplies, machine parts and tools, water purification filters and resins, and medical syringes that have come in contact with radioactive materials. It does not include used fuel from nuclear power plants.

The Low-Level Radioactive Waste Policy Act (LLWPA) of 1980 requires every state to provide a disposal facility—either alone or in cooperation with other states. The law encourages the formation of regional interstate compacts for LLW disposal. In 1985, because no compacts had yet been ratified or sites selected, Congress amended the law to create deadlines for compliance and penalties for failure to meet the deadlines. In September 1999, a General Accounting Office (GAO) report concluded that after spending a total of $600 million over 18 years, the states failed to develop new disposal facilities.

Status: There are limited LLW disposal options, principally at disposal facilities that existed prior to the LLWPA but have compact-imposed disposal limitations. The Hanford, Wash., facility accepts LLW only from companies in the Northwest and Rocky Mountain Compacts. The Barnwell, S.C. facility will accept LLW from outside the Atlantic Compact on a diminishing volume schedule for the next eight years. A private company, Envirocare of Utah, is licensed to accept the lowest class of LLW. Waste generators – power plants, hospitals, biomedial research labs, manufacturers and others – have responded to uncertainty surrounding future disposal access and cost by reducing the volume of LLW generated by 90 percent since 1980.

Key Issues/Decisions: The regional approach to developing new LLW disposal facilities is problematic. At its core, the LLWPA perturbs the free market system, which results in disincentives to progress. Fortunately, sufficient flexibility is contained within the LLWPA to allow market-based solutions, such as Envirocare of Utah. However, future reliance on a single LLW disposal facility is a major concern to many. With a single facility, waste generators are vulnerable and are not assured of uninterrupted access to cost effective LLW disposal.

Options:

- Direct the Department of Energy to privatize the operation of its LLW disposal sites. The Nuclear Regulatory Commission would be directed to regulate these facilities. Commercial LLW would be accepted at these facilities once externally regulated. (These facilities have sufficient capacity to accept all DOE LLW projected for the next 70 years.)
- Repeal the LLWPA to remove competitive barriers to the development of new disposal facilities. Absent concrete incentives, the Northwest, Rocky Mountain and Atlantic Compact states may resist congressional action to limit the rights conveyed by the LLWPA.
- No change. Allow the LLW disposal market to adjust to changing conditions and hope that the LLWPA provides sufficient flexibility to allow market-based and compact-driven solutions to coexist. The limited LLW market may not support this fragmented approach.

This would also jeopardize beneficial activities that generate LLW as a necessary by-product – biomedical research into cures for deadly diseases, pharmaceutical manufacturing and other scientific enterprises.

- **Timing/Milestones:** Envirocare of Utah has applied for a license to expand the classes of LLW it may accept. The draft safety analysis report is under development, and it should be released for public comment early in 2001. Utah law also requires approval by the governor and the legislature. If this application is rejected for technical or political reasons, access to LLW disposal for most of the nation's commercial LLW will progressively be diminished over the next eight years.

Department of Energy
Office of Nuclear Energy, Science and Technology Upgrade

Description: The Director, Office of Nuclear Energy, Science and Technology was downgraded by the Clinton Administration shortly after their arrival from assistant secretary to a non-career appointment (NA), Pay Plan ES. This action sent a strong signal regarding their attitudes toward this technology.

Nuclear power is the second largest source of electricity in the United States and provides 20 percent of our total electricity needs. It is a major contributor to meeting clean air goals and is, in fact, the largest source of non-emitting electricity generation.

This position has responsibility over a wide range of key policy areas affecting this important part of our national energy program. New research and development programs administered by this office will have a profound influence on near-term decisions regarding new generation investments necessary to support our growing economy. Generation IV nuclear plant development along with upgrades of existing advanced designs, as well as Nuclear Energy Research Initiative (NERI) and Nuclear Plant Optimization (NEPO) programs, are important and growing programs under direction of this office.

Key Issue: Nuclear energy should not be treated differently than other generating sources, such as fossil and renewables, which are headed at the assistant secretary level. An assistant secretary should lead each of these important divisions.

Options:

- Change Director, Office of Nuclear Energy to Assistant Secretary level, Presidential appointment with Senate confirmation, Pay plan EX, Grade IV. This places nuclear on the same level with other fuel sources as it was in the Bush Administration.

- No change. This sends a signal that nuclear energy is less important than other generating sources.

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A Responsible Energy Policy for the 21st Century

Executive Summary

This report offers a responsible approach to meeting America's energy requirements. In contrast to recent energy pronouncements by the Bush administration, the path outlined here addresses America's need for energy in a way that is economically reasonable, equitable and environmentally sound. And it is balanced, recognizing the need to extract resources, while proposing a range of environmentally preferred ways to increase supply and energy-efficiency improvements that could substantially reduce the demand for energy without forcing Americans or American industry to make sacrifices.

The cornerstone of NRDC's (Natural Resources Defense Council) plan is increased energy efficiency, relying not on pie-in-the-sky, undeveloped technologies, but on already available and cost-effective processes and technologies. In the short-term, the plan calls for increased reliance on natural gas as a bridge to renewable and environmentally sound energy sources in the future. Correspondingly, the plan calls for reducing U.S. reliance on dirtier fossil fuels – oil and coal. And the plan addresses the urgent needs of low-income households for affordable energy services.

In sharp contrast to NRDC's common sense approach is the Bush administration's controversial energy initiative. Among other things, it calls for opening the Arctic National Wildlife Refuge coastal plain to oil drilling and development, and for rolling back environmental safeguards to pave the way for more fossil fuel development. Already the plan has come under severe criticism for the irreparable harm it would cause pristine areas of the wildlife refuge. That criticism is entirely accurate. But there is another fundamental reason to reject the proposal: It is completely unresponsive to the problems it purports to address. It would make virtually no difference to America's energy supply in the short- or long-term, it would have no impact on energy prices, and it would have no practical effect on America's dependence on foreign sources of oil.

Responsible Oil Policy: Fuel Efficiency, Not Foolish Development of the Arctic National Wildlife Refuge

Key recommendations:

- Provide tax credits to individuals who buy clean and efficient advanced-technology vehicles employing hybrid gasoline-electric drive.
- Raise fuel economy standards for new cars, sport utility vehicles (SUVs) and other light trucks to an average of 39 miles per gallon over the next decade.
- Require replacement tires to be as fuel-efficient as the original tires on new vehicles.
- Expand programs to weatherize low-income Americans' housing and help pay their energy bills.
- Provide incentives for smart-growth development patterns that reduce sprawl.
- Do not drill the Arctic National Wildlife Refuge.

- Do not drill in sensitive offshore areas, including moratorium areas, Alaska, and the eastern Gulf of Mexico.

- Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

The reality that proponents of drilling in the Arctic National Wildlife Refuge refuse to acknowledge is that the United States cannot drill its way out of its energy problem. America has 5 percent of the world's population, but consumes nearly a quarter of the world's oil supply. It already has extracted the majority of its available oil. The obvious conclusion is that the United States can have a much greater impact on oil prices worldwide and can do more to help ensure its own economic security by cutting its demand.

Indeed, fuel efficiency improvements can deliver more oil, more quickly and more cheaply than the Arctic Refuge. For example, simply upgrading the quality of replacement tires to match that of tires that come as standard equipment on new cars would save 5.4 billion barrels of oil over the next 50 years – 70 percent more than the total amount of oil that would likely be pumped from the Arctic Refuge over the same time period. Updating fuel efficiency standards to reflect the capabilities of modern technology would produce even greater savings. Increasing fuel efficiency standards for new vehicles to an average of 39 miles per gallon over the next decade would save 51 billion barrels of oil over the next 50 years – more than 15 times the likely yield from the Arctic Refuge.

Drilling the Arctic Refuge Is Unresponsive to America's Energy Needs

The case for drilling the Arctic National Wildlife Refuge made by the Bush administration and its supporters on Capitol Hill makes no sense. Proponents wrongly present drilling as a solution to the current California energy crisis. They overstate how much oil will be pumped. They understate the environmental consequences. In fact, drilling in the Arctic Refuge coastal plain would have no bearing on California's current crisis, would cause huge and unnecessary environmental damage, would do nothing to address America's long-term need for greater energy efficiency, would not affect the price of gasoline at the pump, and would not significantly reduce U.S. dependence on foreign oil.

The available oil from the Arctic National Wildlife Refuge is a drop in the bucket of America's energy needs. The best U.S. Geological Survey estimate is that less than a six-month supply of oil could be economically recovered from the Arctic Refuge (about 3.2 billion barrels, spread out over a 50-year period), and that it would take at least 10 years of exploration, drilling and pipeline construction before the oil would reach refineries. In its peak year of production – 2027 – the Arctic Refuge would yield less than 2 percent of projected U.S. consumption in that year.

Proponents overstate how much oil would be extracted from the Refuge. Proponents of drilling maintain that as much as 16 billion barrels of oil would be pumped from the Arctic Refuge. The claim is a gross exaggeration that ignores the U.S. Geological Survey's conclusion that about 60 percent of the oil in the Arctic Refuge would not be economically feasible to produce. Even if there were 16 billion barrels of oil available in the Refuge, more than three times as much could be saved by raising vehicle fuel economy standards to an average of 39 miles per gallon.

Drilling in the coastal plain would have no impact on California's electricity problems or any other state's electricity problems. Most U.S. electric power plants do not use oil. Less than 1 percent of California's electricity is generated by burning oil, and the average for the United States as a whole is only 3 percent. And as noted above, oil from the Refuge would not flow to refineries for at least a decade.

Drilling in the Arctic National Wildlife Refuge would have no impact on the price of energy. The oil market is global, and Refuge oil would expand global oil reserves by just 0.3 percent – a quantity far too inconsequential to affect prices at the pump or elsewhere.

Drilling in the coastal plain would spoil an irreplaceable natural treasure. America's Arctic is a fragile wilderness that would be ruined by oil drilling.

Responsible Electricity Policy: Clean Air, Energy Efficiency, Conversion to Renewables

Key recommendations:

- Establish a national "system benefits" fund to promote energy efficiency, support research and development, and maintain universal service.
- Establish a federal "portfolio standard" to ensure that renewable energy steadily increases its market share at minimum cost.
- Extend the renewable energy production tax credit, which encourages greater reliance on emerging renewable energy sources.
- Provide tax incentives for advanced energy-efficient buildings and appliances.
- Strengthen energy-efficiency standards for appliances and buildings.
- Establish comprehensive limits on air pollution from power plants covering emissions of carbon, nitrogen, sulfur and mercury.
- Require full disclosure to customers about the sources and environmental impact of their electricity.
- Reject new subsidies for so-called "clean coal" technology and nuclear power, and eliminate existing subsidies.

Another form of energy in the news today is electricity. As Californians suffer through an unprecedented electricity crunch, politicians a continent away are beginning to debate the causes of – and solutions to – the shortfall.

Contrary to suggestions from the White House, the California crisis is not a function of pollution regulation, and it will not be solved by drilling in the Arctic National Wildlife Refuge. The real reasons for the crisis include a market structure that failed to ensure long-term supplies as a hedge against volatile spot market prices, rapid consumption growth in neighboring states that is overloading the interstate power grid, cutbacks in electricity infrastructure investment throughout the West, and reduced hydropower generation due to low rainfall. As if all of that were not

enough, investigations continue of alleged anti-competitive practices by power generators.

Also contributing to the crisis is a contraction in available natural gas supplies, leading to higher costs (almost one-third of California's electricity is generated with natural gas). Again, the upswing in natural gas prices is partly the result of industry decisions to forego exploration and cut storage levels after years of low commodity prices. Another contributor to natural gas price increases is a short-term reduction in pipeline capacity in the Southwest, due to an explosion last summer.

California already has acted to reduce its exposure to volatile short-term electricity markets by providing for a more balanced portfolio of longer-term purchase contracts. Looking ahead, the fastest, cheapest and cleanest response to the electricity crisis is to take advantage of the state's many immediate opportunities to ramp up its energy-efficiency and renewable-energy investments. These measures already are contributing more than 15,000 megawatts to the Western power grid, which have never needed them more. And the California Energy Commission has just issued emergency upgrades for efficiency standards governing all new buildings, which will yield the equivalent of two giant coal-fired power plants (1,000 megawatts) in the next five years. Also, last September, the Legislature and Gov. Gray Davis created a 10-year, $5.5 billion investment fund for energy efficiency and other sustainable energy technologies. The current California legislative session should help the state do more, starting with a large additional energy-efficiency and renewable energy investment from California's budget surplus.

California also needs more highly efficient natural-gas-fired power plants. NRDC and other environmental groups support the ongoing additions of such plants, which have had no difficulty meeting California's siting requirements. Since April 1999, nine plants totaling nearly 6,300 megawatts have received siting approval. Six are under construction, and at least three are expected to be on-line by the end of this year (2,368 megawatts). At least 14 more plants capable of generating about 7000 megawatts are poised to follow, rebutting claims that environmental safeguards are somehow preventing additions of generation capacity. The new plants (both renewable and fossil) are dramatically cleaner than their aging gas- and coal-fired competitors across the Western power grid. Indeed, the capacity additions anticipated over the next several years are both clean and large enough to begin improving air quality by displacing those dirtier competitors during at least some hours of the year.

Nonetheless, President Bush said recently, "If there's any environmental regulations ... preventing California from having a 100 percent max output at their plants – as I understand there may be – then we need to relax those standards." But as reported by the Los Angeles Times on January 25, Richard Wheatley, spokesman for Houston-based Reliant Energy Co., which operates four Southern California power plants, said that the assertion that environmental regulations are holding back output "is absolutely false. We're making every megawatt available on request. We factor the air quality regulations into our daily operating basis, and they are not causing us to withhold power." The Times could find only one small, obsolete plant that had to suspend operations temporarily to comply with air quality standards, and it accounted for less than 0.2 percent of California's peak power needs.

In the long-term, the best path for California is the best path for America: strong clean air standards, increased reliance on energy-efficiency measures; a shift away from obsolete, inefficient fossil-fueled plants as a source for electricity; and, eventually, full conversion to renewable and environmentally sound forms of energy.

Taken together, these measures will reduce power plant pollution. The electricity-generating sector today is the single largest source of the four pollutants responsible for the most serious local, regional, national, and global air pollution problems we face. These "four horsemen" of power plant pollution are: sulfur dioxide (causing acid rain and producing fine particles), nitrogen oxides (causing ozone smog), mercury (a neurotoxin) and carbon dioxide (causing global warming). Policies to limit air pollution are balkanized and are based on outdated assumptions, resulting in excessive emissions and distorted electricity markets.

As a result, support is growing for integrated requirements to reduce the four horsemen. A major benefit of an integrated pollution cleanup approach is that it would provide a clear road map for business in planning long-term investments.

Large pollution reductions can be achieved at reasonable cost while meeting America's electricity needs by maximizing energy efficiency and reliance on renewable energy technologies. Market barriers have inhibited the widespread deployment of environmentally preferred electricity demand and supply options. Two of the most effective and market-compatible public policies to address this problem are "public goods" or "system benefits" funds, and renewables portfolio standards.

A public goods or system benefits charge – a small surcharge on customers' electricity bills – can help fund cost-effective, long-term investments in energy efficiency, low-income services and renewable energy resources. At least 20 states have some form of system benefits charge.

Renewables portfolio standards encourage greater diversity of energy resources, enhancing reliability, by requiring that electricity providers include a minimum percentage of renewable energy resources in the electricity mix they deliver to their customers.

Responsible Natural Gas Policy: Sensible Extraction, Sensible Pipeline Siting

Key recommendations:

- Provide tax incentives for the construction of energy-efficient buildings and for manufacturing energy-efficient heating and water-heating equipment.
- Adopt a comprehensive pipeline approach ensuring that pipelines are constructed and operated in an environmentally sensitive manner with strong safety oversight and, whenever possible, along existing routes.
- Reject plans to construct an offshore pipeline off the Arctic National Wildlife Refuge coastal plain.
- Plan an Alaska gas pipeline if needed to deliver Prudhoe Bay gas to the lower 48 states that follows the Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways, complies with all U.S. and Canadian environmental laws, has a thorough new Environmental Impact Statement, and incorporates the best pipeline safety and environmental measures.
- Do not drill in sensitive offshore areas, including the moratorium areas, Alaska, and the eastern Gulf of Mexico.

- Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

Of the three fossil fuels that dominate the U.S. energy market, natural gas is by far the cleanest burning fuel. It is, therefore, a key part of NRDC's energy policy – the bridge to greater reliance on cleaner and renewable forms of energy. Increased energy efficiency in homes and factories not only would lower consumers' energy bills; it would free up large amounts of natural gas to help meet the needs of new highly efficient combined-cycle (combustion and steam turbine) power plants. Stronger and better-enforced building codes complemented with tax incentives for construction of buildings that exceed code requirements therefore would pay a double dividend: lower heating and electric bills, and less pollution.

But natural gas is not sufficiently clean to be considered the long-term answer to America's energy needs. Extracting gas, transporting it to market and burning it all cause pollution in various forms.

NRDC recognizes the need for continued exploitation of America's natural gas resources, but believes that certain federal lands should be afforded special protection. This applies to existing protected areas, including roadless national forests and the Rocky Mountain Front. Additional areas that should be protected include Wyoming's Red Desert, Utah's fabled red rock country, and the area in and around Vermillion Basin in northwest Colorado.

Industry and its champions in Washington sometimes assert that America's public-lands natural gas resources have been put off limits, but in fact, 95 percent of onshore federal public lands in the Rocky Mountain region managed by the Bureau of Land Management are open to exploration and production leasing. Similarly nearly 70 percent of the nation's untapped economically recoverable offshore oil and gas resources are open for these purposes. Oil and gas development should be excluded from sensitive offshore areas, including existing moratorium areas, Alaska, and the eastern Gulf of Mexico.

Another important natural gas issue involves siting pipelines to carry gas from drilling sites to market. NRDC believes that pipelines should be constructed and operated in an environmentally sensitive manner with strong safety measures and oversight and, whenever possible, along existing routes. For example, plans to construct an offshore pipeline off the Arctic National Wildlife Refuge coastal plain should be rejected. Instead, if Prudhoe Bay gas supplies are needed to serve markets in the lower 48 states, any Prudhoe Bay natural gas pipeline should follow the Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways, undergo a thorough new Environmental Impact Statement, comply with all U.S. and Canadian environmental laws, and incorporate the best pipeline safety and environmental measures.

Conclusion

Eventually the United States will have no choice but to turn to greater energy efficiency and renewable sources of power. Demand for fossil fuels surely will overrun supply sooner or later, as indeed it already has in the case of U.S. domestic oil drilling. Recognition is also growing that the air and land can no longer absorb unlimited quantities of waste from fossil fuel extraction and combustion. As that day draws nearer, policymakers will have no realistic alternative but to turn to power sources that today make up a viable but small part of America's energy picture. And they will be forced to embrace energy efficiencies – those that are within our reach today, and those that will be developed tomorrow. Precisely *when* they come to grips with that reality – this

year, 10 years from now, or 20 years from now – will determine how smooth the transition will be for consumers and industry alike.

A Responsible Energy Policy for the 21st Century

At the dawn of a new century and the beginning of a new presidency, America finds itself once again wrestling with a problem that has, off and on, been at the forefront of U.S. politics for several decades: energy. The United States has 5 percent of the world's population, but consumes nearly a quarter of the world's energy supply. We use energy to heat our homes and our businesses, power our computers and telephone systems, run our automobiles and aircraft, and drive our manufacturing plants and hospitals. In short, we have constructed an economy and a way of life that depends on the ready availability of energy.

Unfortunately, energy is expensive to produce and deliver, and its creation – or more accurately, its extraction and conversion to useful forms – is the most polluting industrial activity in the United States and other advanced countries. By the same token, however, energy can be quite lucrative for those in the business of producing and selling it, and those interests that have long profited from meeting America's energy needs are heavily invested in an energy policy that emphasizes the production and sale of energy, even at the expense of the environment.

That conflict has given rise to two distinct visions of an energy policy for the United States. One vision focuses chiefly on extracting as much energy as possible, mostly in fossil fuel form (oil, coal and natural gas), in hopes that supply can catch up with demand. This is a policy rooted in 19th century corporate behaviors, ignoring the experiences of the 20th century and the imperatives and opportunities of the 21st century.

The alternative vision, however, calls for encouraging innovation and new technology to meet our energy needs in an environmentally responsible manner. This vision emphasizes efficient use of energy, and places priority on using energy resources that are least damaging to our environment. It promotes economic growth and American industrial competitiveness. This energy path would not force consumers to make sacrifices. Instead it relies on improved technologies that will eliminate waste while increasing productivity and comfort. This is the vision of NRDC (Natural Resources Defense Council), and it is one that recognizes the realities of the 21st century.

NRDC believes that America's energy policy for the new century must address a number of important considerations. First, energy services[1] drive U.S. industry, sustain Americans' standard of living, and are critical to national security. U.S. energy policy must continue to provide the affordable energy services that a healthy economy needs. But energy also imposes heavy costs on American businesses and consumers – some one-half trillion dollars per year, even before recent price increases. Energy policy must be directed at providing for our needs at the lowest cost, and at encouraging industrial innovation to keep America competitive with other countries.

Second, U.S. energy policy must do as little harm to the environment as is reasonably possible, both in the extraction of natural resources used for energy, and in the consumption of that energy. Some energy resources, most notably those in the Arctic National Wildlife Refuge and sensitive offshore and onshore public lands, are within the nation's reach, but the environmental cost of extracting them is steep – too steep in NRDC's judgment. Similarly, the pollution caused by the burning of fossil fuels must be minimized.

[1] Energy services means heating, lighting, mechanical and other essential functions that energy in its various forms helps to sustain.

Third, U.S. energy policy must recognize geophysical realities. Among these: Energy costs money to produce and deliver, and domestic oil resources are usually more costly than imports. Furthermore, domestic oil resources are limited, so regardless of what policy choices are made, foreign sources of oil will be at least part of the U.S. energy supply picture for many years. Also, it is important to recognize that unchecked market forces often work to create energy price spikes and valleys. As recently as two years ago, U.S. energy producers complained about low prices for natural gas and oil, and began cutting back their investments in research and production. That, in turn, helped create the market circumstances that have made energy so expensive today.

Therefore, NRDC believes that U.S. energy policy must rely on the application of technological advances already in place and readily available as a way to reduce consumption. In the short-term, the United States should reduce its reliance on heavily polluting fossil fuels – oil and coal – and increase reliance on the efficient use of natural gas, as a bridge to a longer-term strategy of greater reliance on renewable energy sources and cleaner technologies. Such an approach will decrease America's reliance on foreign sources of energy in the near- and long-term, protect the environment, provide for America's energy needs, and buffer the economy against short-term swings in the market.

Increasing Energy Efficiency

The amount of energy used to accomplish a task – such as heating a home, commuting to work, or lighting a retail store – depends as much or more on technology and investment as on behavior. Greater investments in efficiency combined with new technologies often can reduce energy use by 75 percent to 90 percent, while maintaining or even increasing comfort, convenience and performance. The return on investment typically exceeds 30 percent to 50 percent per year.

For example, between 1975 and 2001, a new generation of energy-efficient refrigerators has reduced their electricity consumption by 75 percent, saving 60,000 megawatts (MW) of electricity and reducing power-plant emissions. Constructing power plants to produce this 60,000 MW would have cost $50 billion, compared to the refrigerator industry's investment of less than $1 billion to produce these more efficient refrigerators. Similar advances have been achieved with clothes washers, windows, fluorescent lighting, and heating and air conditioning systems.[2]

Unfortunately, pervasive market barriers hinder the development, availability and use of energy-efficient technologies. For example, building developers are concerned almost exclusively with keeping construction costs low, so they commonly do not install energy-efficiency technology, even if the costs of doing so would be quickly recouped in lower energy bills. Furthermore, very few home-energy-rating services are available, and no rating services whatsoever are available for commercial buildings. As a result, energy efficiency in newly constructed homes and commercial buildings tends to meet only the minimum levels required by building codes.

Meanwhile, powerful players in the energy market have very real incentives to prevent the implementation of energy-efficiency programs. Oil companies, for example, have no economic reason to encourage efficiency. After all, the commodity they produce is only profitable if sold, and its price increases when demand increases. It is not surprising therefore, that the Washington

[2] Steve Nadel, American Council for Energy-efficient Economy, *Summer Study on Energy Efficiency in Buildings* (1998).

champions of the U.S. oil industry focus their attention on opening up new areas for oil drilling, while ignoring the long-term problem of how to curb America's voracious appetite for fossil fuels.

Even so, the United States has had ample experience over the past 30 years in overcoming market failures and encouraging energy efficiency. The U.S. Environmental Protection Agency and Department of Energy, state governments, foreign governments, utilities, non-governmental organizations and other private sector organizations all have developed and implemented effective programs, including both targeted incentives and minimum efficiency standards for buildings and equipment. These programs have reduced both energy use and costs. In fact, the economic benefits of efficient energy approaches typically outweigh costs by a ratio of at least 2 to 1. For example, upgrading the replacement tires used on American automobiles to roll with less friction would cost about $20 more than conventional tires for a set of four, but would pay for themselves in decreased fuel costs over the course of one year, and save an additional $90 in fuel costs over the 40,000-mile life of the tires.

For simple reasons of supply and demand, high energy use in America leads to high energy prices. Moreover, much of the energy spent in the United States and around the world is simply wasted. Nearly every device that consumes energy could perform its tasks as well or better with less energy if it were redesigned with newer technology.

Given that such technologies are available today, NRDC believes that any comprehensive approach to energy must focus primarily on solutions that reduce demand. The benefits of such an approach are not just economic, of course. More efficient use of energy also is good for the environment, both because it means less – or at least slower – extraction of natural resources, and because reducing fossil fuel combustion means less air pollution.

Readily available opportunities for more efficient energy use abound, beginning in homes and offices. For example, seven new standards issued by the Department of Energy since 1997 will increase the energy efficiency of new clothes washers, central air conditioners, and other major appliances. These updated energy-efficiency standards provide a cost-effective way to save energy and save consumers money. These standards will eliminate the need to build 120 new power plants with a total capacity of almost 50,000 megawatts (MW). The standards will result in net energy savings for the nation of $27 billion dollars through the year 2030, while reducing global-warming pollution emissions by more than 500 million tons over the same period.[3] Yet, as good as these standards are, they do not come close to exhausting the potential gains. Stronger energy-efficiency requirements in building codes, combined with better enforcement and tax incentives to achieve even greater savings than the codes require, could multiply these savings many fold.

Another example: Between 1975 and the mid-1980s, federal Corporate Average Fuel Economy (CAFE) standards cut gasoline use by new cars in half, even as safety performance improved steadily. That, in turn, contributed to the drop in world oil prices after 1980. Further large reductions in fuel consumption per car are feasible with modern technology and would pay for themselves. Updating fuel-efficiency standards for new vehicles to an average of 39 miles per gallon over the next decade (45 miles per gallon for cars and 34 miles per gallon for light trucks)

[3] U.S. Department of Energy, "Energy Department Adopts Air Conditioning and Three Other Appliance Standards To Save Consumers $19 Billion and Help Cut Electricity Demand." Press Release, January 18, 2001.

would save 51 billion barrels of oil over the next 50 years – more than 15 times the likely yield from the Arctic Refuge.

Gasoline use also can be reduced by directing real estate development away from urban sprawl and toward "smart growth." Smart-growth suburbs reduce the need to drive by 30 percent or more, cutting household expenditures on transportation.[4] An important incentive for smart growth is to establish mortgage qualification rules that recognize the increased affordability of homes that have low transportation costs because they are located in areas with good access to public transportation.

Experience dating back to the 1970s has shown the potential for saving large amounts of energy through efficiency policies, while accelerating economic growth and producing more jobs. The up-front costs of producing and installing more efficient technologies would be slight by comparison to the trillion of dollars in savings they would yield. Successful policies include:

- Efficiency standards for appliances, equipment and motor vehicles;
- Economic incentives to install efficient equipment currently available on the market;
- Long-term economic incentives to reward the commercialization of newer technologies;
- Research and development on new technologies and on the market barriers retarding their development; and
- Information and outreach programs to encourage accelerated investments in cost-effective energy-efficiency measures.

Legislation to Promote Energy Efficiency and Use of Renewable Energy

Many of the proposals described above already have been translated into proposed legislation.

- Introduced by Sens. Robert Smith (R-N.H.) and Diane Feinstein (D-Calif.), "The Energy-efficient Buildings Incentives Act" (S. 207) would provide tax breaks for building energy-efficient commercial buildings, schools, rental housing and new homes, cutting their energy needs by 30 percent to 50 percent. It also would provide tax incentives for the purchase of energy-efficient air conditioners, heating and cooling systems, and solar water heating and photovoltaic systems.
- "The Resource Efficient Appliance Incentives Act," introduced in the last Congress by Rep. Jim Nussle (R-Iowa) and Sen. Charles Grassley (R-Iowa) with the backing of a broad, bipartisan group of stakeholders, would require new federal standards that would substantially improve the energy efficiency of new refrigerators and clothes washers, two of the largest consumers of energy in American households.
- Last Congress, Rep. Robert Matsui (D-Calif.) introduced the "Energy-efficiency Technology Tax Act" (H.R. 2380) to create tax incentives for energy-efficient technology and automobiles. The bill sought to spur investment in combined heat and power systems,

[4] David Goldstein, "Mortgages Can Remove the Incentive for Sprawl," *Earthword: The Journal of Environmental and Social Responsibility*, Issue #4.

geothermal power, solar hot water heaters, hybrid and electric vehicles, renewable fuels, and other energy-efficient technologies. An important shortcoming of the bill was that the proposed tax credit for hybrid vehicles was based only on the use of certain technologies and was not tied to superior emissions and fuel economy performance.

- A bill recently introduced by Sen. Jeff Bingaman (D-N.M.), S. 72, would cut the energy use of the nation's biggest consumer: the federal government. The bill would reauthorize and expand the authority of federal agency managers to contract with private companies to install and retrofit federal facilities with energy-efficient and cost-effective technology and equipment

Conversely, Rep. Joe Knollenberg (R-Mich.) has introduced legislation to block important appliance efficiency standards recently issued by the Department of Energy. NRDC vigorously opposes this and any other effort to impede these critical energy-efficiency measures.

Oil

Key Recommendations for Oil Policy

- Require replacement tires to be as fuel-efficient as the original tires on new vehicles.
- Raise fuel economy standards for new cars, sport utility vehicles (SUVs) and other light trucks to an average of 39 miles per gallon over the next decade.
- Provide tax credits to individuals who buy clean and efficient advanced technology vehicles employing hybrid gasoline-electric drive.
- Expand programs to weatherize low-income Americans' housing and help pay their energy bills.
- Provide incentives for smart-growth development patterns that prevent sprawl, including mortgage qualification rules that recognize the increased affordability of homes that have low transportation costs because they are located in areas with access public transportation.
- Do not drill in the Arctic National Wildlife Refuge.
- Do not drill in sensitive offshore areas, including moratorium areas, Alaska, and the eastern Gulf of Mexico.
- Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

Drilling the Arctic Refuge Will Do Much Harm and No Good

Much of the debate over energy legislation in 2001 likely will focus on oil, because the centerpiece of the Bush campaign's energy package was opening the Arctic National Wildlife Refuge coastal plain to oil drilling. Proponents of drilling in the Refuge argue that its oil is needed to meet existing demand. They cite the current electricity shortfalls in California as evidence, and maintain that drilling there would decrease U.S. dependence on foreign oil and lower pump prices for gasoline. They also suggest that drilling would be restricted to a small portion of the Refuge, limiting environmental damage.

In fact, drilling in the Arctic Refuge coastal plain would have no bearing on California's current crisis, would cause huge and unnecessary environmental damage, would do nothing to address our long-term need for greater energy efficiency, would not affect the price of gasoline at the pump, and would not significantly reduce U.S. dependence on foreign oil.

Drilling the Arctic National Wildlife Refuge will not lower gasoline prices. The best U.S. Geological Survey estimate is that less than a six-month supply of oil could be economically recovered from the Arctic Refuge (about 3.2 billion barrels, spread out over a 50-year period), and that it would take at least 10 years before the oil reached refineries.[5] Claims that opening the

[5] U.S. Geological Survey, *The Oil and Gas Resource Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska*. USGS Open File Report 98-34 (1999).

Refuge would meet an immediate need for oil are unsupported by fact.[6]

Proponents overstate how much oil would be extracted from the Refuge. Proponents of drilling maintain that 16 billion barrels of oil would be pumped from the Arctic Refuge coastal plain. The claim is a gross exaggeration, and unfortunately it has been reported in a number of recent news stories without qualification. First, the figure refers to the U.S. Geological Survey's most optimistic prediction of reserves in the coastal plain and its surrounding area, including under the Beaufort Sea. In fact, the USGS calculated only a *5 percent chance* that 16 billion barrels of oil are in the coastal plain and its surrounding area. Second, only a portion of that oil could be recovered economically. The 16 billion-barrel figure relies on an estimate of what the USGS calls "technically recoverable" reserves – the "volume of petroleum representing that proportion of assessed in-place resources that may be recoverable using current recovery technology *without regard to cost*" (emphasis added).[7] Drilling proponents are not taking into account the costs of oil exploration and production, including seismic surveys; transporting, erecting and operating drilling equipment; constructing and operating necessary pipelines; and constructing and maintaining ancillary exploration and production support facilities. All of those factors would drive up the cost of extracting the oil, making most of it too expensive to produce, even if it can be found in the quantities predicted.[8] Even if there were 16 billion barrels of oil available in the Refuge, more than three times as much could be saved by raising vehicle fuel economy standards to an average of 39 miles per gallon.

The available oil from the Arctic Wildlife Refuge is a drop in the bucket of America's energy needs. The 3.2 billion barrels that the USGS estimates would be economically recoverable from the Arctic Refuge is less than half a year's supply of oil for the United States, even at current rates of consumption.[9] Over the projected 50-year life of the oil field, the Refuge would contribute less than 1 percent of the oil Americans will consume. Production of oil there would peak in 2027 at 150 million barrels a year, providing less than 2 percent of projected U.S. consumption (see Figure 1).

Drilling in the coastal plain will have no impact on electricity problems in California or in any other state. U.S. electric power plants do not rely on oil. Less than 1 percent of California's electricity is generated by burning oil, and the nation-wide average is only 3 percent.[10] And as noted above, oil from the Refuge would not flow to refineries for at least a decade (see Figure 2).

Drilling in the coastal plain would spoil an irreplaceable natural treasure. America's arctic

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[6] If America opened the Refuge to drilling tomorrow, approximately 10 years would pass before the first oil from that region flowed through the Trans Alaska Pipeline System (TAPS), is loaded into tankers, and then delivered to West Coast refineries. It would take approximately 15 more years before the region reached maximum production levels.

[7] US Geological Survey, *The Oil and Gas Resource Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska* USGS Open File Report 98-34 (1999).

[8] The US Geological Survey best estimate of the economically recoverable potential of the Arctic Refuge is 3.2 billion barrels at a price of $20 per barrel in 1996 dollars. Adjusting for inflation since then and accounting for the fact that Arctic oil sells for $2.50 to $6.00 less per barrel than West Texas Intermediate, the benchmark for the world oil price, implies that the 3.2 billion barrel figure corresponds to a world oil price of at least $25 per barrel in today's dollars.

[9] US Geological Survey, *The Oil and Gas Resource Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska* USGS Open File Report 98-34 (1999).

[10] Energy Information Administration, *Electric Power Annual 1999: Volume I* DOE/EIA-0348(99)/1 (August 2000).

is an exceedingly fragile wilderness area that has been irrevocably altered by the heavy industry that now dominates the landscape. Oil operations in Alaska's Prudhoe Bay emit tons of nitrogen oxides, which contribute to smog and acid rain. These same oil facilities release tons of methane, a potent "greenhouse gas" that contributes to global warming. Oil field activities also produce large amounts of sewage sludge, scrap metal, garbage, and other waste every year. Spills of oil, drilling mud, and production chemicals are routine.

The Arctic Refuge's coastal plain area, the 8 percent of the Refuge where the oil companies want to drill, is the biological heart of wildlife activity. Oil development there would have major adverse impacts on the caribou, polar bear, and more than 180 bird species that now inhabit the area. In addition, while proponents frequently assert that drilling would only affect 2,000 acres[11], the truth is that those acres would not be contiguous. According to the USGS, the oil is located in at least 35 discrete sites spread across the coastal plain, requiring the construction of roads to connect far-flung drilling sites with Prudhoe Bay facilities. Also, oil companies would have to build a new 20-inch pipeline across 135 miles of frozen ground, wildlife habitat and dozens of rivers.[12]

Renewed calls for opening the Arctic National Wildlife Refuge to oil exploration are generally accompanied by claims that the environmental impact would be minimal, yet a review of the impact of existing oil development in Alaska tells a different story. Once part of the largest intact wilderness area in the United States, Alaska's North Slope now hosts one of the world's largest industrial complexes. More than 1,500 miles of roads and pipelines and thousands of acres of industrial facilities sprawl over hundreds of square miles of once pristine arctic tundra. Impacts include air pollution, spills and waste.

Greater Efficiency

The cheaper, faster and cleaner alternative to drilling in the Arctic Refuge is a more efficient use of our oil resources. NRDC's analysis found many ways to cut oil consumption:

- Ensuring that replacement tires roll as smoothly as original equipment tires would save 5.4 billion barrels of oil over the next 50 years, 70 percent more than the total amount of oil that is likely to be available from the Arctic Refuge over the same time period (see Figure 3).

Most replacement tires now on the market create more friction as they roll than original equipment tires. The increased friction lowers fuel efficiency. Automakers have an incentive to use low-friction tires on new cars to help them comply with fuel-economy standards. Unfortunately, there are no standards or even efficiency labels for replacement tires so most consumers end up purchasing less efficient tires when their original sets wear out. Michelin now sells a line of replacement tires that are equivalent in fuel efficiency to new tires for $5 more per tire. Using that price difference as a basis of comparison, the average driver would recoup the additional expense in fuel savings over the course of one year, and would save an additional $90 over the 40,000-mile life of the tires.

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[11] Eric Pianin, "Norton Argues for Arctic Drilling," *The Washington Post*, January 20, 2001, p. A16. Then-Secretary of the Interior nominee Gale Norton said, "I have been told production there would impact only about 2,000 acres in an area well over the size of many of our states."

[12] Kenneth J. Bird USGS, *Assessment Overview, The Oil and Gas Resource Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska* USGS OFR 98-34 (1999).

- Increasing fuel efficiency standards for new vehicles to 39 miles per gallon over the next decade would save 51 billion barrels of oil over the next 50 years – more than 15 times the likely yield from the Arctic Refuge (see Figure 3).

Honda and Toyota already are selling hybrid gasoline-electric vehicles that get more than 50 miles to the gallon, roughly a 50 percent improvement in average fuel economy. Ford has announced plans to use this hybrid technology to improve the fuel economy of two of its sport utility vehicle (SUV) models. Automakers should be required to use available technologies to improve fuel economy for their entire fleets, not just a few models. Such efficiency improvements would have many benefits, including decreasing demand for oil, and therefore lowering prices at the pump; decreasing the environmental harm caused during the extraction and production process; and decreasing the environmental harm from burning fossil fuels. In addition to raising standards, Congress should encourage innovation by providing tax incentives for the purchase of advanced-technology vehicles that are substantially cleaner and more fuel efficient than average.

While most oil is used for transportation, oil can also be saved by upgrading insulation and installing more efficient burners in oil-heated homes. Expanding efforts to weatherize low-income Americans' homes is a high priority because, in addition to saving oil, they improve comfort and reduce heating bills for those who can least afford to pay rising energy costs. Energy-efficiency programs covering all fuels should be tailored to meet the special needs of low-income households.[13] Federal- and state-level investments in such programs and assistance for paying energy bills must expand significantly now as fuel and electricity prices increase across the nation.

Refuge Oil Would Not Significantly Reduce U.S. Oil Dependence

Oil is a global commodity whose price is determined primarily by international markets. This will continue to be true regardless of the level of domestic oil production. In other words, as long as U.S. oil markets remain open, the price of gasoline in Chicago, Detroit and Washington will fluctuate with global oil prices, even if the United States does not import any oil. Therefore, changes in domestic oil production would only affect oil prices to the extent that they influenced the global supply-demand balance. Given that the United States produces only about 12 percent of global petroleum supplies, even major changes in domestic production would have a marginal effect on global markets. Over the long term, the U.S. share of global production will inevitably decline further. The United States has less than 3 percent of world oil reserves, while Gulf state OPEC members control about two-thirds of proven reserves. Opening the coastal plain of the Arctic National Wildlife Refuge to oil exploration would not appreciably change this situation, expanding global oil reserves by 0.3 percent.[14]

By contrast, the United States accounts for about 25 percent of world petroleum demand.[15] The obvious conclusion is that the United States can have a much greater impact on oil prices

[13] Examples include California's AB 1890 and AB 1002, which provide for statewide, needs-based low-income energy services funded through a small surcharge on electricity and natural gas bills.
[14] Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves. 1999 Annual Report* DOE/EIA-0216(99) (December 2000).
[15] Energy Information Administration.

worldwide by cutting American demand than it can by trying to increase American supply. Indeed, untapped energy efficiency is in great supply, while untapped U.S. oil is increasingly rare, because most of America's accessible oil resources have already been exploited.

For example, Corporate Average Fuel Economy (CAFE) standards helped double vehicle gas-mileage efficiency from 1975 through the late 1980s, reducing the impact of high oil prices on consumers. Congress enacted the standards in response to the oil crises of the 1970s, and strengthened standards could protect U.S. citizens from fluctuations in oil prices. Unfortunately, since 1995, legislative riders attached to transportation funding bills have prohibited the Department of Transportation (DOT) from even examining the need to raise CAFE standards. Because of the riders and the growing market share of SUVs, the average fuel economy of all new passenger vehicles is at its lowest point since 1980.[16] Debate over the CAFE rider in Congress in 2000 led to a compromise that will allow DOT, in conjunction with the National Academy of Sciences, to study the technical and economic feasibility of raising standards.

Nearly 30 years after the first OPEC oil embargo, the United States is still dependent on petroleum for 97 percent of its transportation energy needs. As a result, two-thirds of America's oil consumption goes to fuel transportation. With average efficiencies declining for new vehicles, and a 21 percent increase in miles driven between 1990 and 1998, U.S. dependence on petroleum to fuel our transportation needs is increasing.[17]

[16] U.S. Environmental Protection Agency. *Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2000.* EPA420-R00-008 (December 2000).
[17] Energy Information Administration.

Electricity

Key Recommendations for Electricity Policy

- Establish a national "system benefits" fund to promote energy efficiency, support research and development, and maintain universal service.
- Establish a federal "portfolio standard" to ensure that renewable energy steadily increases its market share at minimum cost.
- Extend the renewable-energy-production tax credit, which encourages greater reliance on emerging renewable energy sources.
- Provide tax incentives for advanced energy-efficient buildings and appliances.
- Strengthen energy-efficiency standards for appliances and buildings.
- Establish comprehensive limits on air pollution from power plants covering emissions of carbon, nitrogen, sulfur and mercury.
- Require full disclosure to customers about the sources and environmental impacts of their electricity.
- Reject new subsidies for so-called "clean coal" technology and nuclear power, and eliminate existing subsidies.

The second major form of energy that will be much affected by the coming policy debate is electricity. Electric power is produced in the United States by a variety of means. Chief among them is burning coal, which accounts for 51 percent of total generation. Other significant sources are nuclear, which provides approximately 20 percent of the nation's electricity; natural gas, which provides 15 percent; and hydroelectric, which provides 8 percent. Significantly, oil provides a negligible share of electricity, about 3 percent,[18] one of many reasons why drilling the Arctic National Wildlife Refuge would have no effect on electricity supply now or in the future.

The California Crisis

The coming debate over energy policy will take shape in the shadow of the California electricity crisis. The California crisis has become a political crisis over the price and reliability of energy throughout the West, producing headline news nationally. The conventional wisdom is that electricity consumption in California is surging out of control, and "the Internet" and a booming economy are frequently invoked as explanations. In fact, from 1990-1999 the California electricity system's peak demand grew less than 2 percent per year – to about 50,000 megawatts (MW), with 41,000 MW representing total demand on the three large investor-owned systems.[19]

[18] Energy Information Administration, *Electric Power Annual 1999: Volume I* DOE/EIA-0348(99)/1 (August 2000).

[19] California Energy Commission, *California Energy Demand: 2000-2010* (June 2000). See http://www.energy.ca.gov for additional information.

Total statewide consumption of electricity increased less than 1 percent per year from 1990-1998, less than one-third the rate of the 1980s.

The fact that the current crisis was not created by disproportionate increases in consumption by Californians is cold comfort for consumers, particularly those with modest incomes. Already experiencing sticker shock over their latest monthly gas bills, consumers worry as electricity distribution companies demand permission to pass high electricity costs through to customers.

These distributors are reacting to unprecedented wholesale gas and electric prices. Some examples:

- Electricity that normally costs 2 cents to 3 cents per kilowatt-hour has sold in recent months on Western wholesale markets for more than $1.50 per kilowatt-hour; the average summer wholesale price was at least 15 cents per kilowatt-hour, and that figure more than doubled again in December and January.

- Natural gas prices, which normally range from $2 to $3 per million BTUs, climbed in January to nearly $10 per million BTUs nationally, with prices peaking above $50 in Southern California. Natural gas futures on the New York Mercantile Exchange remain above $5 through March 2002.

No single factor explains these extraordinary, and closely linked, price increases in two of our most essential commodities. The upswing in natural gas prices most prominently reflects a prolonged contraction in exploration and storage due to low commodity prices, coupled (in the Southwest) with reduced pipeline capacity as a result of an explosion last summer.[29] Much costlier natural gas has, in turn, driven up the operating cost of electric generation. High electricity prices also reflect reduced Northwest hydropower production due to low rainfall, a generally overstressed power grid, widespread failures to hedge spot-market prices with long-term contracts, and reduced investment over the past decade in both energy efficiency and generating capacity throughout the West. As if all that were not enough, investigations continue of alleged anti-competitive practices by many market participants.

Pointing to the gap between runaway wholesale electricity costs and state-frozen retail electricity rates, the West's two biggest electricity distribution companies – PG&E and Southern California Edison – claim losses in excess of $12 billion since May 2000 on unreimbursed wholesale electricity purchases. (Consumer advocates counter that these losses are in part offset by gains on power sold in California by generating companies owned by the same parent companies that own the utilities.) Among other responses, the California Public Utilities Commission temporarily raised electric rates by about 10 percent overall. The financial crisis remains acute and a continuing focus of public and legislative concern.

California already has acted to reduce its exposure to volatile short-term electricity markets by providing for a more balanced portfolio of longer-term purchase contracts. Looking ahead, the fastest, cheapest and cleanest response to the electricity crisis is to take advantage of the state's many immediate opportunities to ramp up its energy-efficiency and renewable-energy investments. These measures already are contributing more than 15,000 megawatts to the Western power grid, which never needed them more. And the California Energy Commission has

[29] California Energy Commission Staff Report, *California Natural Gas Analysis and Issues* P200-00-006 (November 2000).

just issued emergency upgrades for efficiency standards governing all new buildings, which will yield the equivalent of two giant coal-fired power plants (1,000 megawatts) in the next five years. Also, the legislature has created a new 10-year investment fund for sustainable energy technologies that exceeds $5.5 billion. The current California legislative session should help the state do more, starting with a large additional energy-efficiency and renewable energy investment from California's budget surplus. California also is expanding its assistance to low-income households, for whom the recent price increases have been especially painful.

Energy-efficiency and renewable-energy investments have already made significant contributions to California's economy and electricity grid. Since 1990, energy-efficiency investments have reduced statewide electric bills by more than $2.8 billion. As a result, according to the California Energy Commission, "California continues to lead the nation in maximizing the amount of Gross State Product produced per unit of energy."[21] The RAND Corporation has pegged per capita benefits from 20 years of energy-efficiency programs in California at about $1,000 per capita, with cumulative utility investment for such purposes averaging only about $125 per capita.[22] The RAND study and other independent reviews agree that California still has many untapped and inexpensive opportunities to get more work out of less electricity.

Renewable energy also is a critical part of California's energy portfolio, with about one-ninth of the state's supply now generated from wind, solar, geothermal or biomass resources. Thanks to a 1998 auction for new renewable capacity, more than 500 MW of urgently needed supply are now being added to the California system, with nearly 100 MW already installed, more than 400 MW expected by the end of 2001, and at least 900 additional MW available for near-term purchase. The new capacity has short lead times, with the 50 winning bidders all scheduled to be operating by summer of 2002.

California also needs more highly efficient natural-gas-fired power plants. NRDC and other environmental groups support the ongoing additions of such plants, which have had no difficulty meeting California's siting requirements. Since April 1999, nine plants totaling nearly 6,300 megawatts have received siting approval. Six are under construction, and at least three are expected to be on-line by the end of this year (2,368 MW). At least 14 more plants capable of generating about 7,000 MW are poised to follow, rebutting claims that environmental safeguards are somehow preventing additions of generation capacity. The new plants (both renewable and fossil) are dramatically cleaner than their aging gas- and coal-fired competitors across the Western power grid. Indeed, the capacity additions anticipated over the next several years are both clean and large enough to begin improving air quality by displacing those dirtier competitors during at least some hours of the year.

Nonetheless, President Bush said recently, "If there's any environmental regulations . . . preventing California from having a 100 percent max output at their plants – as I understand there may be – then we need to relax those standards." But as reported by the Los Angeles Times on January 25, Richard Wheatley, spokesman for Houston-based Reliant Energy Co., which operates four Southern California power plants, said that the assertion that environmental regulations are holding back output "is absolutely false. We're making every megawatt available on request. We factor the air quality regulations into our daily operating basis, and they are not causing us to withhold power." The Los Angeles Times summarized its findings as follows:

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[21] California Energy Commission, *The Energy Efficiency Public G oods Charge Report*, p. 12 (December 1999); data on net benefits are from NRDC, *Investments in the Public Interest* (January 2000).
[22] RAND, *The Public Benefits of California's Investments in Energy Efficiency*, p. xiv (March 2000).

"California regulations have not short-circuited the amounts of electricity produced, according to power company representatives." The Times could find only one small, obsolete plant that had to suspend operations temporarily to comply with air quality standards, and it accounted for less than 0.2 percent of California's peak power needs.

National Electricity Policy

In the long-term, the best path for California is the best path for America: strong clean air standards, increased reliance on energy-efficiency measures, a shift away from fossil fuels as a source for electricity, and, eventually, full conversion to renewable and environmentally sound forms of energy.

Electricity poses two principal long-terms problems for America's energy policy. First, its production today usually involves burning fossil fuels, an inherently polluting process. Second, as recent events in California demonstrate, the current structure of the electricity marketplace makes consumers vulnerable to price spikes and market-driven shortages. President Bush's energy plan emphasizes extracting fossil fuels to generate electricity, perpetuating both problems. The goal of U.S. electricity policy should be to minimize the life-cycle costs of the reliable energy services that a healthy economy needs. This means promoting improved efficiencies of electricity use and substituting renewable resources for fossil fuels, while ensuring that fossil fuels needed during the transition are extracted and burned as cleanly as possible.

The current approach to meeting America's needs for electric energy services unnecessarily burdens our health, environment and economy. Current policies do not effectively address the problems of inefficiency, over-reliance on nonrenewable energy supplies and excessive air pollution. NRDC believes that a comprehensive energy policy for the electricity sector must include explicit, adequate provisions:

- to support and expand existing investments in energy efficiency and other public benefits;
- to accelerate the role played by renewable energy supplies; and
- to reduce air pollution to provide a clean and level playing field for competition.

The electric generating sector is the single largest source of the four pollutants responsible for the most serious local, regional, national, and global air pollution problems we face: sulfur dioxide, nitrogen oxides, mercury, and carbon dioxide, the dominant greenhouse gas. Electric power plants release more than two-thirds of total U.S. emissions of sulfur dioxide, and more than one-third of each of the other three pollutants. These "four horsemen" of air pollution are responsible for a Pandora's box of health and environmental harm:

- **fine particles** that contribute to tens of thousands of premature deaths in the United States each year;
- **smog** that plagues our major cities, and causes respiratory attacks in children and seniors;
- **acid rain** that still damages lakes, streams, forests and monuments;
- **regional haze** that spoils trips to national parks for millions of visitors annually;

- **nitrogen emissions** that help over-fertilize estuaries, including the Chesapeake Bay, Long Island Sound, Pamlico Sound and the Gulf of Mexico, leading to dead zones where aquatic life perishes;

- **mercury contamination** of lakes and streams that has prompted 40 states to issue ongoing advisories about the fish that store this toxin; and

- **carbon dioxide-driven climate change** that threatens to create disruptive weather patterns and sea-level rise that human civilization has never before experienced.

This plague of pollution problems is a product of the "grandfather" loopholes in current federal law that allow 30-, 40- and 50-year old plants to continue operating without meeting modern performance standards. The patchwork of lenient or nonexistent rules at the state and local level has created pollution havens where grandfathered plants can engage in domestic environmental dumping, distorting fair energy markets.

As we move to modernize the electricity market economically, we must accompany it with modern environmental performance measures. Many states are experimenting with competitive markets for energy services. But fair competition is impossible in an environment where air pollution performance requirements differ vastly among competitors. Because all markets are connected by wires, different pollution standards promote a "survival of the filthiest" market, where plants that are the dirtiest offer power at the cheapest prices and increase their market share.

These market distortions do not deliver consumer benefits. The price differences caused by different pollution requirements are quite small, usually 0.2 to 0.3 cents per kilowatt-hour or less, but these small differences are enough to give dirtier producers a decisive market advantage in many areas. The market distortions also discourage investment in new, cleaner, more efficient generation, and in renewable resources.

Under the current rules, an entrepreneur who seeks financing for a clean, high-efficiency natural gas plant can point out that it emits no sulfur, no mercury, and much less nitrogen oxides (NO_x) and carbon dioxide (CO_2) than the competition. But, with the partial exception of sulfur (for which allowance programs exist under the acid rain law), this superior environmental performance has no economic value in the marketplace. The financier wants to know whether the plant can be run more cheaply than the competition. If the competition is a group of grandfathered coal-fired power plants, the answer often will be "no" and the new plant may not attract financing.

To address the egregious health, environmental, and economic flaws in the current air pollution control programs, a number of bills were introduced in the last Congress. Notable examples include the "Clean Energy Act of 1999" (S. 1369) introduced by Sens. Jim Jeffords (R-Vermont) and Joseph Lieberman (D-Conn.), and the "Clean Smokestacks Act" (H.R. 2900) introduced by Reps. Henry Waxman (D-Calif.) and Sherwood Boehlert (R-N.Y.). These bills would have established industry-wide caps on emissions of each of the "four horsemen" pollutants: sulfur dioxide (SO_x), NO_x, CO_2 and mercury. The caps on SO_x and NO_x would provide building blocks for meeting health-based smog and fine particle standards and would reduce acid rain further. The mercury cap would require reductions from the largest single remaining U.S. source of this pollutant. And the CO_2 cap would return emissions to 1990 levels – the target set in the 1992 Rio Climate Treaty that the United States has ratified.

A renewed effort to enact similar legislation is expected in this Congress because both the president and the chairman of the Senate Environment Committee have endorsed the concept of integrated requirements to reduce the four horsemen of power plant pollution. A major benefit of the integrated pollution cleanup approach is that it would provide a clear road map for business in planning long-term investments.

The history of clean air progress has developed as a series of unconnected initiatives, typically focused on a single pollutant. Today we can survey the next 10 to 15 years and be confident that additional measures will be pursued to reduce the four horsemen pollutants. But if we pursue the traditional approach, it is impossible to predict with confidence, when, how deep, and in what order these important steps will occur.

As a result, business planners must approach today's investments by making educated guesses about environmental requirements. Billions of dollars are changing hands as generation plants are sold under state restructuring programs. One thing is certain: someone is guessing wrong. By enacting integrated cleanup programs, Congress could provide certainty and reduce the tendency to prolong dependence on existing outmoded plants through the traditional process of applying end-of-pipe cleanup devices normally aimed at controlling only one pollutant. Similarly, local citizen groups reacting to proposed new power plants in their areas would have confidence that the proposed new and cleaner plant would in fact contribute to reducing overall regional and national emissions, rather than simply adding to the existing burden of excess pollution.

In short, we know we need to reduce a range of damaging pollutants from the electric generating sector; we know how to do it; and we know that failure to take the needed steps will increase damage, prolong uncertainty, and encourage unfair competition.

Electricity from Coal

Mining and burning coal is not only the most common method of producing electricity, it is also the most polluting. Mining techniques ravage the land and create serious water pollution, and burning coal is the largest source of air pollution in the United States. During the presidential campaign, candidate George W. Bush proposed investing $2 billion over 10 years to research so-called "clean coal" technologies, and said he would support permanently extending an existing tax credit for research and development of new, cleaner technologies.[23]

NRDC opposes incentives for the use of coal-based technologies because their likely result is to subsidize more polluting coal plants at the expense of cleaner resources: efficiency, renewables and gas-fired plants. Coal technology subsidies would not ensure additional electricity or reduced pollution. Therefore, existing coal subsidies should be abolished, and proposals for new subsidies should be rejected.

NRDC strongly opposes efforts to weaken provisions of the Clean Air Act that protect public health by requiring fossil fuel-fired power plants to install adequate pollution control devices when first constructed or significantly modified. Rather, NRDC agrees with President Bush that Congress should adopt comprehensive caps on carbon, nitrogen oxide, sulfur dioxide and mercury emissions from fossil fuel-fired power plants, more than 90 percent of which come from coal-fired electric generation.

[23] Gov. George W. Bush, "A Comprehensive National Energy Policy," September 29, 2000.

Electricity from Nuclear Power

In 1999, the 103 civilian nuclear power plants operating in the United States generated nearly 20 percent of all electricity consumed in the United States that year.[24] But no new nuclear plant has been ordered in the United States since 1978, and every plant ordered after 1973 was canceled or abandoned.[25]

Contrary to nuclear industry claims, nuclear power is neither "clean" nor "green." Nuclear reactors do not emit the "traditional" air pollutants produced by fossil-fuel powered electricity plants, such as sulfur dioxide, which causes acid rain; nitrogen oxides, which lead to urban smog; and carbon dioxide, a major cause of global warming. However, nuclear reactors do harm the environment. For example:

- The process of "enriching" uranium for use as a fuel in nuclear power plants requires significant amounts of electricity, much of which is produced by aging coal-fired power plants in the Midwest. As a result, the uranium-enrichment process produces the same types of traditional fossil fuel air pollutants cited above.

- Many nuclear power plants have "once through" cooling systems. These systems require two-and-a-half times as much water as fossil fuel plants with similar cooling systems. Taking in vast amounts of water for cooling and discharging heated water can seriously harm water resources and aquatic ecosystems.

- While nuclear power plants produce relatively small amounts of solid waste, their radioactive wastes pose health risks that exceed that of any other source of electricity. Because the federal government has not yet approved a site for long-term storage, these wastes may be stored on site for a century or more, which may preclude any future re-use of contaminated lands.

- Among the various sources of electrical power, nuclear power creates the greatest risk of major, destructive acts of terrorism.[26]

- Nuclear plants produce highly fissionable material in their waste systems that could be diverted by terrorists for use in nuclear bombs.

Many states are requiring or encouraging electric utilities to sell all their power plants, including their nuclear power plants. Sale of nuclear plants by utilities to more experienced owners has the potential to provide safety and consumer benefits, but the new owners must not be shielded from competition. Moreover, the Nuclear Regulatory Commission and state regulatory agencies must require that the new owners maintain stringent safety measures.

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[24] Energy Information Administration, *Electric Power Annual 1999: Volume I* DOE/EIA-0348(99)/1 (August 2000).

[25] Ralph Cavanagh, "Electric Power Marketing in an Increasingly Competitive Era," 5 *Yale Journal on Regulation* (1988).

[26] Amory Lovins and Hunter Lovins, *Brittle Power: Energy Strategy for National Security*, Brickhouse (1982).

Electricity from Hydropower

Hydropower generates about 8.3 percent of America's electricity, with substantial annual variations depending on rainfall.[27] Although hydropower emits no air pollution, it is not necessarily an environmentally preferred resource. Dam construction and operation inevitably alter ecosystems on land and in water, disrupting the life cycles of numerous aquatic species and damaging habitat for other wildlife. The impacts of large dam construction are wide-ranging, but even smaller dams can cause considerable damage. In the Pacific Northwest, NRDC has supported replacement of four poorly sited dams with such environmentally preferred resources as energy efficiency and wind power.

Hydropower that is certified by the Low Impact Hydropower Institute can be considered an environmentally preferred resource. The institute certifies hydropower facilities based on objective environmental criteria, including river flows, water quality, fish passage and protection, watershed protection, threatened and endangered species protection, cultural resource protection, and recreation. NRDC encourages electricity customers who can choose their electricity supplier to include certified hydropower along with other environmentally preferred resources in their electricity purchases.

Electricity from Natural Gas

In 1999, natural gas provided approximately 15.3 percent of the nation's electricity.[28] The cleanest of the fossil fuels, it is an important part of the short-term strategy for meeting America's power needs because it can serve as a bridge to the development and implementation of renewable energy sources.

Natural gas is less polluting than other fossil fuels because it burns more cleanly and contains little, if any, ash, heavy metals or other impurities. When burned in high-efficiency combined-cycle units (combining a combustion turbine and a steam turbine) that extract additional electricity from their own waste heat, natural gas provides the basis for the best available fossil fuel combustion technology. However, it is still a transition technology because exploring and drilling for gas is destructive; gas is non-renewable; and even the cleanest burning plants produce some air pollutants, including carbon dioxide, the greenhouse gas most responsible for global warming.

New combined-cycle natural gas plants reach 55 percent to 60 percent efficiency and produce virtually no sulfur oxides (SO_x) or volatile organic compounds (VOCs). Emissions of nitrogen oxides (NO_x) and particulate matter (PM_{10}) are extremely low. Carbon dioxide emissions (CO_2) are about 60 percent lower than for coal-fired power plants. High efficiency and relative ease of permitting (due to the lower emissions) have made these plants the top choice for developers. Virtually all of the new fossil fuel-fired plants currently proposed for construction in the Northeast and the West are natural gas fired, and the vast majority are high efficiency combined-cycle units.

[Because natural gas also is used for non-electrical applications, it is discussed in detail in a separate section of this report.]

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[27] Energy Information Administration, *Electric Power Annual 1999: Volume I*, DOE/EIA-0348(99)/1 (August 2000).

[28] Energy Information Administration, *Electric Power Annual 1999: Volume I*, DOE/EIA0-348(99)/1 (August 2000).

New, Environmentally Preferred Electricity Supply Options

Most of the electricity in the United States is generated by burning fossil fuels, such as coal, oil and natural gas. Unfortunately, this burning produces between one-quarter and two-thirds of the sulfur, mercury, nitrogen oxides, carbon dioxide and particulate matter emitted into the atmosphere. These air pollutants cause acid rain, contaminated fish, ground-level ozone (smog), global warming and cardiopulmonary health problems.[29]

Many renewable energy resources have a much less significant impact on the environment than fossil fuels and nuclear power. Renewable energy also adds much-needed diversity to the nation's electricity mix, improving reliability, dampening fuel price shocks, and contributing to economic development. The construction time for renewable generation facilities is measured in months, not years as with conventional sources. The most important sources of renewable energy are:

Wind: State-of-the-art wind power plants use large spinning blades to capture the kinetic energy of wind and convert this energy into electricity. Wind and landfill methane are the most economically competitive and promising renewable technologies. Like geothermal and landfill methane, wind at prime sites is on the verge of matching or beating current fossil-fueled generation prices. In 1999, there was more than 2,500 megawatts (MW) of installed wind capacity in the United States – one quarter of installed capacity worldwide. The use of wind power is growing rapidly in the United States and around the world. In just the last few weeks a 300 MW wind farm project on the Oregon-Washington border was announced, as was a 260 MW project at the Department of Energy's nuclear test site in Nevada. Both should be supplying badly needed power to the Western grid by the end of the year.

Biomass: Biomass includes landfill methane and other fuels derived from timber, agriculture and food processing wastes, as well as fuel crops that are specifically grown or reserved for electricity generation. Biomass technologies use combustion processes to produce electricity and vary widely in their environmental impacts. Environmentally preferred biomass technologies can have no climate-change impact and very low air pollution emissions.

Geothermal: Heat from the Earth's core can be converted into electricity, and already accounts for 5 percent of California's electricity supply. Like wind power, new geothermal facilities are increasingly competitive with fossil-fueled power plants.

Solar: The ultimate source of most of the world's energy is the sun, which provides the Earth with light and heat. Two technologies are used to convert solar energy into electricity: photovoltaics (PV) and solar-thermal. When sunlight strikes a PV cell, it excites electrons, generating an electric current. Solar-thermal technologies use the sun's heat to create steam to drive an electric generator.

Electricity produced from wind, solar, geothermal and biomass provides a little more than 2 percent of the U.S. total. The generating capacity of these resources was about 13,700 MW in 1999.

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[29] US Environmental Protection Agency, *National Air Quality and Emissions Trends Report, 1998*, EPA 454/R-00-003 (March 2000).

Renewable resources are becoming increasingly cost-competitive. For example, wind-generated electricity today costs only about one-tenth of what it cost in the early 1980s (4 to 5 cents per kilowatt-hour (kWh) vs. 40 cents per kWh). Costs are expected to decline by an additional 20 percent to 40 percent by 2005. In California, competition for renewable energy investments in 1998 drove the above-market "premium" for new renewable resources lower than anyone expected: an average of less than one half cent per kWh.[30]

Environmentally Preferred Distributed Generation

Distributed power generators are relatively small power plants located at or very near the point where the electricity is used. Small, clean distributed generators can economically reduce demand on the grid, improve reliability and reduce environmental harm. Examples include small-scale solar, wind, fuel cells, and combined heat and power generators – also known as co-generators.

Since co-generators produce both heat and power, the useful output from a unit of fuel can be doubled, effectively halving the air pollution. NRDC believes that more applications for this technology should be encouraged, but this is technically challenging. These units are more complex than those that produce just heat or electricity, and sizing, installing and maintaining them properly takes skills not commonly found in-house at most businesses.

Fuel cells produce electricity from chemical reactions, much like batteries. Unlike batteries, they do not run down as long as they are supplied with hydrogen, which is commonly derived from natural gas or other fuels. Fuel cells are highly efficient and produce virtually no emissions. They also are quiet, reliable and have no moving parts.

High-tech computer and medical centers and remote lighting and telecommunications are examples of niche applications where fuel cells and solar power, respectively, make good economic sense. Many consumers already are choosing these technologies for their environmental and reliability advantages.

Not all distributed generators are clean. For instance, diesel generators – the most common form of distributed generation – emit more than 110 times as much nitrogen oxides and particulate matter as new central station power plants. NRDC supports air regulations to ensure that these generators don't prosper at the expense of the environment; California and Texas are now developing such standards. Currently, most generators smaller than 1 MW fly below the regulatory radar screen.

Resolving Inefficiencies in the Electricity Marketplace

Pervasive market barriers have inhibited the widespread deployment of environmentally preferred electricity supply options. Two of the most effective and market-compatible public policies to address this problem are "public goods" or "system benefits" charges, and renewables portfolio standards.

A public goods or system benefits charge – a small non-bypassable surcharge on customers' electricity bills – can help fund cost-effective, long-term investments in energy efficiency, low-income services and renewable energy resources that provide net benefits to consumers in lower

[30] California Energy Commission.

energy bills and a cleaner environment. California recently renewed its system benefits charge, which will raise more than $5 billion over 10 years. The money will provide production credits for new and refurbished renewable energy, rebates and other economic incentives for emerging renewable technology, customer credits for purchasing renewable power and support for biomass and solar projects. At least 19 other states have some form of system benefits charge.

Renewables portfolio standards encourage greater diversity of energy resources by requiring that electricity providers include a minimum percentage of renewable energy resources in the electricity mix they deliver to their customers.

While these policies have been employed in some states, national implementation would be more effective. NRDC therefore supports national "system benefits" charges and renewables portfolio standards in federal legislation. NRDC also endorses federal tax incentives with similar goals, including the bipartisan effort in a proposed Senate bill, S. 207, to provide urgently needed support for dramatic improvements in the design of new buildings and equipment.

Federal legislation also is needed to ensure that adoption of these clean forms of generation actually leads to improved air quality. Between a recent surge in proposed new combined-cycle natural gas turbines and the potential for rapid growth of renewables and clean distributed generation, there is the potential for new, cleaner power plants to force older, dirtier plants to reduce operations or close down. This creates a tension: If the process of displacement can be guaranteed, then new power plants mean cleaner air, but their siting can cause additional harm to nearby residents and the local environment. If the older plants are not displaced, then new power plants will only mean more pollution and more siting problems. The most effective way to ensure that overall pollutant emissions are reduced is to establish national caps on power plant emissions, as described above.

Finally, national surveys show that consumers want to purchase electricity with minimal environmental impacts, but that they lack credible information upon which to base their decisions. Therefore, it is crucial that there be full disclosure to customers about the sources and environmental impacts of their electricity so they can make more educated choices.

Natural Gas

Key Recommendations for Natural Gas Policy

- Provide tax incentives for the construction of energy-efficient buildings and for manufacturing energy-efficient heating and water-heating equipment.
- Adopt a comprehensive pipeline approach ensuring that pipelines are constructed in an environmentally sensitive manner with strong safety oversight and, whenever possible, along existing routes.
- Reject plans to construct an offshore pipeline off the Arctic National Wildlife Refuge coastal plain.
- Plan an Alaska gas pipeline if needed to deliver Prudhoe Bay gas to the lower 48 states that follows the Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways, complies with all U.S. and Canadian environmental laws, has a thorough, new Environmental Impact Statement, and incorporates the best pipeline safety and environmental measures.
- Do not drill in sensitive offshore areas, including moratorium areas, Alaska, and the eastern Gulf of Mexico.
- Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

Another major energy source for the United States is natural gas. It is used in a variety of applications, including as a source for heating, as fuel for electricity generation, and even to power buses and other motor vehicles. As noted earlier, it is the cleanest burning fossil fuel, particularly when modern equipment is used. But as with other fossil fuels, extracting natural gas and conveying it from the place of extraction can harm the environment.

Still, it is preferable to burning other fossil fuels, and it therefore must be regarded as the bridge fuel to a future energy system that relies on renewable and environmentally friendly sources of energy. Replacing about one-third of the existing coal-fired electricity generation with high-efficiency gas would require about 4 trillion cubic feet of gas per year (Tcf/yr). That conversion, coupled with projected growth in demand, both for new generation and for other uses of gas, could increase gas demand in the United States by some 36 percent. With strong energy-efficiency and renewable-energy programs, most or all of the demand growth could be avoided. For example, tax incentives for the construction of energy-efficient buildings and for manufacturing energy-efficient heating and water-heating equipment could save 300 Tcf of natural gas over 50 years. Nonetheless, additional supplies of natural gas still will be necessary to replace a share of dirtier coal-fired electricity.[31]

[31] Interlaboratory Working Group, *Scenarios for a Clean Energy* Future (Oak Ridge, Tennessee; Oak Ridge National Laboratory and Berkeley, California, Berkeley National Laboratory (ORNL/CON-476, LBNL-44029)) (November 2000). The "Advanced" electricity scenario shows total gas demand increasing from current levels of about 22 Tcf to 26 Tcf in 2010, while total CO_2 emissions are reduced.

Without successful efficiency measures, the demand for natural gas could increase even more. The Energy Information Administration's (EIA's) conventional forecast is that domestic natural gas production will increase from 18.7 Tcf in 1999 to 29.0 Tcf in 2020, a growth rate of 2.1 percent per year. At the same time, EIA expects natural gas imports to increase from 3.4 Tcf in 1999 to 5.8 Tcf in 2020. Domestic consumption is projected to reach 30 Tcf in 2013 and increase to 35 Tcf by 2020.[32] Over the next 20 years natural gas consumption is likely to outstrip domestic production, requiring additional imports, primarily from Canada.[33]

Much of the debate over natural gas revolves around where to drill for it. Despite assertions from industry and their supporters on Capitol Hill, it is not necessary to drill in sensitive areas to meet America's energy needs. For example, industry is pressing to drill in sensitive areas of the Outer Continental Shelf, including offshore Alaska, the Eastern Gulf of Mexico, and areas where a moratorium on drilling has been in place for many years. But such drilling is unnecessary because 70 percent of the nation's estimated undiscovered, economically recoverable Outer Continental Shelf oil and gas is located *outside* of these areas.

Some have also suggested that natural gas production is a reason to drill in the Arctic National Wildlife Refuge. In reality, industry interest in the Refuge is driven by their desire to produce oil, not gas. The Arctic Refuge is estimated to contain less than 7 Tcf of natural gas resources, about a three month supply by the time the resources could be developed.[34] In comparison the Prudhoe Bay Production area is estimated to contain 32-38 Tcf of natural gas resources.[35] Gas produced in Prudhoe bay is currently reinjected because there is no way to transport it to market. If a natural gas pipeline were built to connect Prudhoe Bay to the lower 48 states it would take at least 30 years before all of the Prudhoe Bay could be marketed.

Domestic natural gas exploration has rebounded from historic lows in early 1999, when 371 natural gas drilling rigs were reported in service as natural gas wellhead prices fell below $2.00 per Tcf. As wellhead gas prices recovered, and then doubled, natural gas exploration surged, with 840 natural gas drilling rigs reported in service during November 2000.[36] Rising natural gas prices are driving the renewed interest in natural gas exploration in existing production regions in Oklahoma, Texas and farther afield in Kansas.[37] Shortages of skilled labor and reluctance to invest in new drilling equipment are currently limiting natural gas production, indicating that access to public lands is not a constraint.

Most onshore and offshore federal public lands, the property of all Americans, are managed by

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[32] Energy Information Administration, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001), December 2000, p. 29.

[33] Canada has proven natural gas reserves of 63 Tcf and assessed additio nal reserves of 603 Tcf. p. 30.

[34] John Schuenemeyer, USGS, *Assessment Results, The Oil and Gas Resource Potential of the Arctic National Wildlife Refuge 1002 Area, Alaska*. USGS Open File Report 98-34 (1999). Chapter RS Table RS14.

[35] T.J. Glauthier, Deputy Secretary of Energy, Testimony before the Senate Committee on Energy and Natural Resources. September 14, 2000.

[36] Energy Information Administration, *Annual Energy Outlook 2001*, DOE/EIA-0383(2001), December 2000, pp. 30-32.

[37] Jim Yardley, "Oil Patch Comes To Life As Natural Gas Prices Climb" *New York Times* December 16, 2000 pp. A1, A16. In December 2000 some 1,090 drilling rigs were reported in service, with more than 800 drilling rigs exploring for natural gas, a significant increase over a year ago when under 400 drilling rigs were reported in service, but still modest in comparison to the 1970s and 1980s when over 4,500 drilling rigs were reported in service.

the U.S. Forest Service, the Bureau of Land Management and the Minerals Management Service.[18] Despite oil industry assertions that onshore and offshore federal public lands are closed to exploration and production of oil and natural gas, 95 percent of federal public lands in the Rocky Mountain region managed by the Bureau of Land Management are open to exploration and production leasing.[19] Similarly, more than 80 percent of estimated undiscovered, economically recoverable offshore gas resources are open to exploration. Few federal onshore lands are off limits to *any* harmful activity, including oil and gas leasing and development. Many have already been leased and developed, and as a result, once undisturbed rural areas and spectacular wild lands have been transformed by industrialization, their wilderness values destroyed and a host of publicly owned resources degraded, if not permanently lost. Under President Bush's proposed energy plan, industry would be allowed to plunder some of the last, best vestiges of America's magnificent natural heritage.

Consequences of Development

When widespread oil and gas leasing occurs in the Rockies, the result is heavy-duty industrialization. Well fields, which can cover extensive acreage, are accompanied by a dense web of power lines, pipelines, waste pits, and new or upgraded roads, along with processing plants and other production facilities. All this activity displaces deer, antelope and other wildlife species from their native ranges and has ruined wilderness values on millions of acres. Every year, visibility is significantly impaired in many places on many days by emissions from industrial operations. These same emissions have contributed to acidification of sensitive bodies of water.

Special Places at Risk in the Western United States

The areas of focus for natural gas exploration in the lower 48 states onshore include the Rocky Mountain region, where in addition to reserves associated with oil deposits, unconventional resources such as tight sands and coalbed methane are attracting particular attention. The Bureau of Land Management, as of July 2000, had issued 12,000 drilling permits for coalbed methane exploration in the Wyoming Powder River Basin to 112 companies, with 6,000 wells drilled and 2,500 in production. This amount of activity significantly exceeds forecasts for coalbed methane exploration and production. According to a 1995 BLM forecast, approximately 5,000 coalbed methane exploration wells would be drilled; two years ago the forecast jumped to 10,000; and last year, to 15,000. By mid-1999, the forecast hit 30,000, and, by the spring of 2000, 50,000 to 70,000 wells were projected for the Powder River Basin on private, state and federal lands.

Natural gas production on some public lands will continue to be necessary, but some areas within the federal public lands system merit special protection. Existing protection for areas such as the Rocky Mountain Front and roadless forest areas should be maintained. Other unique and irreplaceable areas also merit protection, even though they are currently open to exploration and production.

For example, hidden away in the southwestern part of Wyoming, the Red Desert boasts a unique

[18] The Bureau of Land Management is responsible for administering oil and gas exploration and production leasing on all onshore BLM lands, while the Mineral Management Service of the Department of Interior manages oil and gas leasing on the outer continental shelf surrounding the US coastline. They are separate sections of the Department of Interior.

[19] The Rocky Mountain Region consists of Colorado, Montana, New Mexico, Utah and Wyoming—the 5 western states that are significant producers of oil and gas.

and spectacular landscape – one of the most remarkable in North America. The area has stunning rainbow-colored rock formations, towering buttes, prehistoric rock art and outstanding wild lands. It is home to the largest pronghorn antelope herd in the lower 48 states as well as a rare desert elk herd. For centuries, the Red Desert has been a sacred place of worship for the Shoshone and Ute tribes and it contains remnants of the Oregon and Mormon Pioneer trails. Oil wells, pipelines, excessive roads and other industrial facilities already mar some of the surrounding desert land. In response to industry applications to lease, the Interior Department recently committed the BLM to develop a proposal that focuses on protecting the area's outstanding natural, cultural and aesthetic wonders.

Utah's fabled red rock country is some of the last unspoiled wilderness outside of Alaska. Its red-hued massive cliffs, arches, towers and other rock formations support bighorn sheep, mountain lion, pronghorn antelope, peregrine falcons, golden eagles and other wildlife species as well as ancient Native American ruins. Last year BLM attempted to lease more than 30,000 acres of sensitive, irreplaceable wild lands in red rock country – bringing them closer to industrialization and the certain destruction of their wilderness, wildlife and other values.

Another special place is the area in and around Vermillion Basin in northwest Colorado – one of the state's most stunningly beautiful and isolated regions. Its wild landscape is dotted with banded cliffs, desert mountains and rugged badlands, along with a host of significant historic and scientific values. The area is surrounded by oil and gas development that threatens to encroach into Vermillion Basin. Despite the passage of time, the area looks much as it did when the Ute Indians' ancestors first hunted and lived there. If oil and gas development pressures are permitted to intrude further on the unique *de facto* preserve, the landscape will be changed forever.

Offshore Leasing, Exploration and Development

From Big Sur to the spectacular coast of Maine, to the Florida Keys and back to Alaska's Bristol Bay, some of America's most important national coastal treasures have been protected so far from offshore oil and gas development by Congress and by two presidents – George H.W. Bush and Bill Clinton.

Large reserves of natural gas are located in the federal waters of the Central and Western Gulf of Mexico, which are open to oil and gas leasing. This area is estimated to contain 60 percent of the undiscovered economically recoverable oil resources and 80 percent of the undiscovered economically recoverable gas resources estimated to be available in the entire United States Outer Continental Shelf (OCS), according to the Minerals Management Service.[40] Thus, protecting sensitive offshore areas, including the moratorium areas, offshore Alaska and the Eastern Gulf of Mexico still leaves the vast majority of the nation's Outer Continental Shelf oil and gas available to the industry.

Some argue that natural gas development on the Outer Continental Shelf should be promoted, including in the moratorium areas, most notably off the Atlantic and the west coast of Florida. They argue that the risk of oil spills is negligible, and that environmentally sound development can therefore take place. Their argument ignores the reality that oil spills are not the only environmental concern related to OCS development. Offshore gas development, like oil

[40] U.S. Department of the Interior, Minerals Management Service (MMS), 2000. Outer Continental Shelf Petroleum Assessment, 2000, page 5, and Gulf of Mexico Assessment Update. Assumes mean estimates of undiscovered, economically recoverable resources at $18/barrel oil; $2.11/Tcf gas.

development, causes substantial environmental damage. Furthermore, leases for natural gas exploration also could open the door to oil development.

Beginning in the George H.W. Bush administration and continuing throughout the 1990s, the Interior Department has emphasized the need to proceed on a consensus basis with OCS activities. NRDC strongly agrees with this approach and submits that consensus has been clearly established on the appropriateness of OCS activities in most areas of the country. This consensus has been reflected in the consistently broad, bipartisan support for the existing congressional moratoria on leasing outside the Central and Western Gulf of Mexico. The moratoria have been endorsed by an array of elected officials from all levels of government and diverse political persuasions, from former Gov. Christine Todd Whitman of New Jersey to Gov. Jeb Bush of Florida and Gov. Gray Davis of California.

Political support for the moratoria in the affected states stems from concern over the severe environmental, social, economic and cultural damage associated with offshore oil and gas development, including:

Onshore damage: The onshore infrastructure associated with offshore oil or gas cause significant harm to the coastal zone. For example, OCS pipelines crossing coastal wetlands in the Gulf of Mexico are estimated to have destroyed more coastal salt marsh than can be found in the stretch of land running from New Jersey through Maine.[41] Moreover, the industrial character of offshore oil and gas development is often at odds with the existing economic base of the affected coastal communities, many of which rely on tourism, coastal recreation and fishing.

Oil spills: If offshore areas are leased for gas exploration there is always the possibility that oil also will be found, creating the risk of oil spills. According to MMS statistics, some *3 million gallons* of oil spilled from OCS oil and gas operations in 73 incidents between 1980 and 1999.[42] Oil is extremely toxic to a wide variety of marine species, including marine birds, mammals and commercially important species of fish. In the wake of the devastating Exxon Valdez oil spill, scientists at the National Marine Fisheries Service's Auke Bay Lab found that concentrations of polycyclic aromatic hydrocarbons (PAH) – the most toxic component of oil – as low as one part per billion were toxic to juvenile pink salmon.

Water pollution: Drilling muds are used to lubricate drill bits, maintain downhole pressure, and serve other functions. Drill cuttings are pieces of rock ground by the bit and brought up from the well along with used mud. Massive amounts of waste muds and cuttings are generated by drilling operations – an average of 180,000 gallons per well.[43] Most of this waste is dumped untreated into surrounding waters. Drilling muds contain toxic metals, including mercury, lead and cadmium. Significant elevations of all these metals have been observed around drilling sites.[44] A second major polluting discharge is "produced water," the water brought up from a well along with oil and gas. Offshore operations generate large amounts of produced water. The Minerals

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[41] Boesch and Rabalais, eds., "The Long-term Effects of Offshore Oil and Gas Development: An Assessment and a Research Strategy." A Report to NOAA, National Marine Pollution Program Office at 13-11.

[42] MMS, 2000. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Draft Environmental Impact Statement (DEIS), p. IV-50.

[43] MMS, 2000. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Draft Environmental Impact Statement (DEIS), p. IV-50.

[44] *Id.*

Management Service estimates that each platform discharges hundreds of thousands of gallons of produced water every day.[45] Produced water typically contains a variety of toxic pollutants, including benzene, arsenic, lead, naphthalene, zinc and toluene, and can contain varying amounts of radioactive pollutants. All major field research programs investigating the fate and effects of produced water discharges have detected petroleum hydrocarbons, toxic metals and radium in the water column down-current from the discharge.[46]

Air pollution: Drilling an average exploration well generates some 50 tons of nitrogen oxides (NOx), 13 tons of carbon monoxide, 6 tons of sulfur dioxide, and 5 tons of volatile organic hydrocarbons. OCS platforms generate more than 50 tons per year of NOx, 11 tons of carbon monoxide, 8 tons of sulfur dioxide and 38 tons of volatile organic hydrocarbons per platform per year.[47]

Comprehensive Pipeline Policy

The siting of natural gas pipelines must be conducted in an environmentally sensitive way. Efficient, combined-cycle natural gas power plants produce more pollution than renewable energy sources, but much less than oil- or coal-fired plants. For this reason, NRDC views them as an important bridge to a cleaner energy future. Natural gas pipelines are necessary to fuel these plants, but they must be sited so as to preserve fragile ecosystems.

The siting of new pipelines should follow existing rights-of-way whenever possible, in order to take advantage of existing infrastructure and avoid environmental damage from construction or inadequate maintenance. NRDC strongly opposes a pipeline that would carry Prudhoe Bay gas that goes "over the top" offshore from the Arctic National Wildlife Refuge in Alaska to the MacKenzie Delta in the Northwest Territories in Canada. If natural gas reserves presently reinjected into the ground at the Prudhoe Bay production area are to be recovered, any natural gas pipeline should follow the existing Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways, comply with all U.S. and Canadian environmental laws, undergo a thorough new Environmental Impact Statement and incorporate the best pipeline safety and environmental measures.

[45] *Id.*, p. IV-32.
[46] *Id.*, p. IV-32-33.
[47] *Id.*, p. IV-40.

Conclusion

As the debate over America's energy policy is joined, the president and Congress will confront a series of crucial choices. Will we set America on a path that allows for tomorrow's energy needs, or will we simply continue to drill and burn our way through precious natural resources with no regard for the energy future our children will face? Will we respect the environment or ravage it in pursuit of the last drop of available oil? Will we focus attention on energy efficiency as a way to cut demand and prices, or will we submit our children to a future in which they are even more dependent on foreign oil because American demand has depleted American supply?

The debate will play out in the context of the controversy over the Arctic National Wildlife Refuge and in the shadow of the California electricity crisis. But these two matters also are metaphors for the larger questions confronting policymakers. The Arctic Refuge frames fundamental choices about whether we will sacrifice our environment so that the energy industry can extract every cent of profit while we delay prudent action until we are forced to curtail our energy use. The California experience is widely portrayed as a choice between paying outrageously high prices for energy or limping by on inadequate supplies of power.

Unfortunately, these two issues have been badly misrepresented and distorted by political partisans and the energy industry, who appear bent on creating and exploiting a crisis mentality as a way to win a political battle that could mean billions of dollars of profit for energy conglomerates. The truth is:

- Increasing fuel efficiency standards for new vehicles to an average of 39 miles per gallon over the next decade would save 51 billion barrels of oil over the next 50 years – more than 15 times the likely yield from the Arctic Refuge.

- Drilling the Arctic National Wildlife Refuge is no answer whatsoever to California's current problems.

- Drilling the Arctic Refuge will have a negligible impact on America's dependence on foreign oil.

- Drilling the Arctic Refuge will not solve America's long-term energy needs.

Similarly,

- The answer to California's long-term needs – indeed, the answer to America's long-term needs – is to pursue and achieve much greater energy efficiency, to work toward much greater reliance on renewable and clean sources of energy, and to rely more in the meantime on natural gas as a bridge to the future.

- California's electricity crisis is not the product of environmental regulation. It is in large measure a result of letting short-term thinking substitute for a balanced portfolio of investments in sustainable energy resources.

Eventually the United States will have no choice but to turn to greater energy efficiency and