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Analysis of the National Energy Policy

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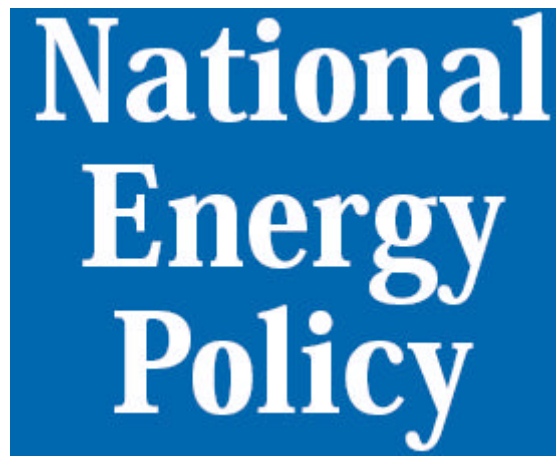
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The Bush-Cheney Energy Study

Analysis of the National Energy Policy



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See <http://www.whitehouse.gov/energy/> for the complete NEP

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Executive Summary

Bush-Cheney Energy Study—Analysis of the National Energy Policy

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This Study is a comprehensive assessment of the cumulative public impact of the National Energy Policy (NEP) and the general reaction to it. It surveys reports from government, organizations, media, and industry to obtain an across-the-board sampling of NEP-related feedback. The pages where corresponding information is contained on the subject are parenthetically indicated. In order of priority, the major findings regarding public reaction to the NEP indicate:

- 1) **The NEP relies upon “has-been” energy technology that hampers rather than helps the U.S. economy.** No new solutions, except the supply-side drilling in the pristine ANWR, a study of renewables and the grid, along with an impossible schedule of erecting 2 new power plants per week, is generally viewed as a desperate act of the “has-been” NEP (p. 30). Analysis shows that 2 more fossil fuel power plants (300 MW) erected each week for the next 20 years, as the NEP demands, equals only 6 trillion kilowatt-hours (kWh) by 2020, while failing to diversify the nation’s energy portfolio (p.7). Instead, a full two-thirds (2/3) of the nation’s electricity now disappears in “conversion losses” with the outmoded centralized-style power transmission grid, wasting 7 trillion kWh of energy (p. 122-123). Many other dispersed renewable and energy efficiency solutions exist (p. 39, 52, 56), requiring no new power plants. Granting eminent domain to FERC only solves the tip of the iceberg, according to the energy experts who met at the USEA to review the insurmountable logistics of “Implementing the NEP” (p.74). The consensus there was exasperation, resulting in one panelist shouting, “the NEP is dead.”
- 2) **The NEP does little to solve the nation’s energy problems, now or in the future.** Restoring “America’s credibility with our overseas suppliers” (p. 37) assumes an endless oil supply but in reality, can only provide short-term security at best, because Hubbert’s peak is expected by US and European oil experts to occur by 2010 (p.46). In this regard, the DOE-EIA is guilty of collusion by projecting a doubling of OPEC’s oil production by 2020, in EIA’s “key long-term energy issues” for no justifiable reason (p. 87). OPEC will actually never exceed 30 mbd , consistent with its 25 years of limited production (p.93). Therefore, the NEP is deliberately leading the DOE to repeat the same admitted blunder of Energy Secretary Richardson, who on 2/27/02 gushed, “We were caught napping” (p. 94). Without any weaning schedule toward energy independence, the NEP drags the nation down toward increased oil dependency, with projected shortages looming on the horizon, not to mention accelerated global climate change.
- 3) **The NEP fails to take even the most obvious steps toward energy security.** Most of the sampled reports indicate that by not increasing the CAFÉ standards for cars and light trucks, the NEP tells the voting public that government has only industry in mind. Estimates indicate it would save 1 to 5 mbd of oil (US presently consumes 20 mbd) but the NEP only dryly states that the “fuel efficiency of light vehicles has remained flat” (p. 19). Polls have shown that 90% of Americans want renewable energy but the NEP wants an R&D study (p.8). The DOE/EIA also has shown even a 20% renewable portfolio standard (RPS), providing a

wealth of future energy security, will cost no more than “business-as-usual” but the NEP fails to propose any RPS at all (p. 52). List of the major NEP shortcomings is on pages 9-10.

- 4) **The NEP Development Group violated Federal law repeatedly.** The NEP leads with the common violation of 42 USC Sec 7112 regarding the “major emphasis” that should be placed on renewables. However, the DOE recently has also engaged in an unlawful cover-up, as NEP Director Cheney himself has, regarding public records of the NEP preparation, as revealed by testimony from plaintiffs (p. 100) suing the government. Word-for-word quotes from industry recommendations, obtained through court order, appear throughout the NEP (p.70, 96). This violates the 42 USC 7321 Sec 801 (d) which mandates that “proposals of all segments of the economy” and “citizens who have no financial interest” are consulted in the development of the NEP. By giving such extensive time, behind closed doors, to industrialists and virtually no time to the public nor environmental groups, the President also violated 42 USC 7321 Sec 801a(2) which, among other requirements, orders open public hearings to be held prior to the NEP drafting (p.69). This apparently was so embarrassing to the DOE that another blatant cover-up was perpetrated by the DOE/EERE in May, 2001, after the NEP was released. Its scheduled public meetings on June 5, 2001, purposely deceived the public into believing they were concerning the NEP, which was a sad admission of guilt regarding the unlawfulness of the NEP preparation process (p.73). Lastly, appliance efficiency standards have already eliminated the need for dozens of new power plants but the NEP even refuses to obey the law regarding the “no rollback provision” on new efficiency standards to air conditioners. Rep. Markey compared this to the abrogation of the ABM treaty on June 13, 2001 as he interrogated Secretary Abraham during a Congressional hearing (p.15). These violations are very unpopular among those surveyed. Several reports agree that, as a result of revelations from court-ordered compliance, the NEP was not intended to benefit the public.
- 5) **Analysis of the DOE and ERDA Reveals a Pattern Regarding the NEP.** The first national energy plan, “Creating Energy Choices for the Future,” in 1975, was the most optimistic and goal-oriented plan the US has ever seen (p.63). It also followed on the heels of Nixon’s 1973 Project Independence with extensive Congressional support, to “unlock the potential of essentially inexhaustible sources of energy” (p.64). However, actions by subsequent administrations have diluted the initial ERDA & DOE programs so much that none of its goals, nor the 1992 EPAAct goals, have ever been achieved (p.70). Also doubling oil consumption in the interim, the US is now, more than ever, vulnerable to another oil crisis. This realization invites Congress to responsibly improve upon the regressive NEP before another foreign war of acquisition is initiated (p.113). Under threat of another oil shortage, the 93rd Congress passed three of five major bills concerned with solar and geothermal energy, in 1974 (p.65). The public wonders if the present energy crisis is severe enough for the 107th Congress to do the same. Everyone contributing to this Study seems to agree that, *“We shouldn’t wait for yet another reminder of the need to boost energy security. We should act now.”* (U.S. Secretary of Energy, Spencer Abraham, 11/8/01).

I. Analysis of the National Energy Policy

Introduction

The slogan for the National Energy Policy (NEP) presented in May, 2001 by the National Energy Policy Development Group (NEPD Group) is presented as: “Reliable, Affordable and Environmentally Sound Energy for America’s Future.” The featured quotation from President G. W. Bush that highlights and sets the tone for the report is, “America must have an energy policy that plans for the future, but meets the needs of today. I believe we can develop our natural resources and protect our environment.” Therefore, an emphasis has been deliberately placed on developing or more precisely exploiting the natural resources of our country. This focus has been seen before in the U.S. government. James Watt, former Secretary of the Interior, states, “Everything Cheney's saying, everything the president's saying - they're saying exactly what we were saying 20 years ago, precisely. Twenty years later, it sounds like they've just dusted off the old work,” as quoted in the *Denver Post*, May 16, 2001.

The 170-page, National Energy Policy report, available from White House, State, Energy, and other government websites, is composed of eight chapters. The following is a thumbnail sketch of the most earth-shaking changes recommended in each chapter of the NEP:

1) Taking Stock: Energy Challenges Facing the United States

Cites gaps between supply and demand; Recommends implementation of legislative components of the NEP

2) Striking Home: Impacts of High Energy Prices

Dedication of more funds to the Low Income Home Energy Assistance Program and Weatherization Assistance Program; Directs the Federal Emergency Management Administration to prepare for potential energy-related emergencies

3) Protecting America’s Environment: Sustaining the Nation’s Health and Environment

Enacting “multi-pollutant” legislation for a “market-based” program to reduce mercury, sulfur and nitrogen oxides from electric power generators

4) Using Energy Wisely: Increasing Energy Conservation and Efficiency

Extend and expand the DOE “Energy Star” labeling program; Establish Corporate Average Fuel Economy (CAFÉ) standards; Increase funding for renewable energy R & D programs; Create a tax credit for hybrid and fuel cell vehicles

5) Energy for a New Century: Increasing Domestic Energy Supplies

Open the Arctic National Wildlife Refuge and other federal lands for oil and gas exploration and production; provide \$2 billion to fund clean coal technology research; Uprate and expand nuclear energy generation; Reduce hydro power licensing process

6) Nature’s Power: Increasing Use of Renewable and Alternative Energy

Provide increased R & D for renewable energy sources; Reduce delays in geothermal lease processing; Enact legislation for tax incentives for solar, wind and biomass; Continue ethanol excise tax exemption; Reauthorize Hydrogen Energy Act; Develop fusion power; Provide tax credit for new hybrid or fuel cell vehicles

7) America's Energy Infrastructure: A Comprehensive Delivery System

Create a reliable national transmission grid; Take actions to remove constraints and bottlenecks on the interstate transmission grid; Develop legislation granting authority to obtain rights-of-way for electricity transmission lines; Expedite construction of a natural gas pipeline through Alaska and Canada; Expand R & D into superconductivity

8) Strengthening Global Alliances: Enhancing National Energy Security

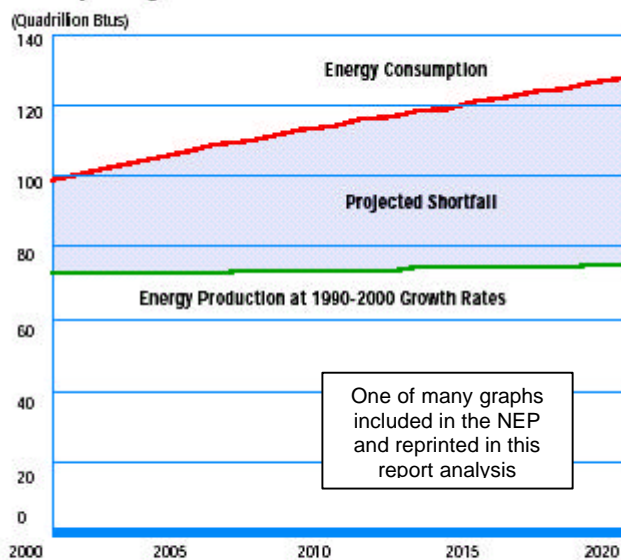
Make energy security a priority in trade and foreign policy; Review sanctions with regard to energy security; Promote geographic diversity of energy suppliers; Develop technologies and innovative approaches to address the issue of global climate change; Return exchanged barrels of oil to the strategic petroleum reserve and consider increasing its size

Overview

The proposed Bush-Cheney National Energy Policy would expand the role of nuclear power, open the Arctic National Wildlife Refuge for oil exploration, limit toxic emissions from power plants and offer new tax incentives for the development of renewable energy. President George W. Bush called the policy "a very optimistic look at America," after a presentation to the Cabinet in Washington. "This isn't just a report that's going to gather dust," the President said, "this is an action plan" (Environment News Service, 5/17/01).

Two of the three basic principles on which the plan is based mention environmental concerns. The "comprehensive" and "long-term" policy will advance "new, environmentally friendly

Figure 1
Growth in U.S. Energy Consumption Is Outpacing Production



Over the next 20 years, growth in U.S. energy consumption will increasingly outpace U.S. energy production, if production only grows at the rate of the last 10 years.

Sources: Sandia National Laboratories and U.S. Department of Energy, Energy Information Administration.

technologies to increase energy supplies and encourage cleaner, more efficient energy use." "The Policy seeks to raise the living standards of the American people, recognizing that to do so our country must fully integrate its energy, environmental, and economic policies," the policy group says.

But there are few quick fixes promised. "Our energy crisis has been years in the making, and will take years to put fully behind us," the National Energy Policy Development Group predicts. "To meet projected demand over the next two decades, America must have in place between 1,300 and 1,900 new electric plants," the policy group estimates. This estimate resulted in Cheney declaring his famous intention to build two plants per week for the next twenty years, which is actually unattainable in today's regulation-laden municipalities. (More will be presented about this vast problem in Section II.) Natural gas will fuel many of the new power plants, as it does today, and the policy group gives nuclear power, which today supplies 20 percent of America's

electricity, "an expanding part in our energy future."

Against the urging of most environmental groups in the United States, the NEP recommends authorization of exploration and, if resources are discovered, development of the 1002 Area of the Arctic National Wildlife Refuge. "Congress should require the use of the best available technology and should require that activities will result in no significant adverse impact to the surrounding Environment," the group said. Legislation should be passed to "use an estimated \$1.2 billion of bid bonuses from the environmentally responsible leasing of ANWR for funding research into alternative and renewable energy resources, including wind, solar, geothermal, and biomass," the NEP recommends. The generation of electricity from fossil fuels should be cleaned up, the NEP states in Chapter 3 and recommends "mandatory reduction targets" for emissions of three main pollutants: sulfur dioxide, nitrogen oxides, and mercury. The NEP also asks the Environmental Protection Agency (EPA) to work with Congress to propose legislation that would establish "a flexible, market based program to significantly reduce and cap emissions of sulfur dioxide, nitrogen oxides, and mercury from electric power generators." Reductions of these emissions should be phased in "over a reasonable period of time," the group said, comparing the plan to the successful acid rain reduction program established by the 1990 amendments to the Clean Air Act.

Under the plan, utilities would be able to make modifications to their plants without fear of new litigation. (This may be why Representative Markey told Secretary Abraham, "So far your solutions have been giving us a faith-based electricity policy" in the Hearing before the Committee on Energy and Commerce at the 107th Congress, 6/13/01.) Financial incentives such as emissions trading credits would be established to help achieve the required reductions. Such a program "with appropriate measures to address local concerns" would provide significant public health benefits even as we increase electricity supplies, the NEP says. It proposes the investment of \$2 billion over 10 years to fund research in clean coal technologies, and supports a permanent extension of the existing research and development tax credit. Plans to expand the production of energy from renewable sources such as biomass, wind, geothermal, and solar would include re-evaluation of access limitations to federal lands to site generating facilities.

The NEP also recommends "appropriate funding of those renewable energy research and development programs that are performance based and are modeled as public-private partnerships." New landfill methane projects would get a tax credit under the proposed policy, and ways would be found to reduce the delays in geothermal lease processing as part of the permitting review process. The EPA administrator is advised to develop a new renewable energy partnership program to help companies more easily buy renewable energy, as well as receive recognition for the environmental benefits of their purchases.

An extensive public education program outlined in Chapter 4 would promote consumer choice programs to "increase knowledge about the environmental benefits of purchasing renewable energy." Tax credits for electricity produced using wind and biomass would be expanded. Direct benefits for consumers include a temporary income tax credit available for the purchase of new hybrid or fuel-cell vehicles between 2002 and 2007, and a new 15 percent tax credit for residential solar energy property, up to a maximum credit of \$2,000. The EPA is advised to issue guidance to encourage the development of "well designed combined heat and power units," commonly called cogeneration units, that are highly efficient and have low emissions.

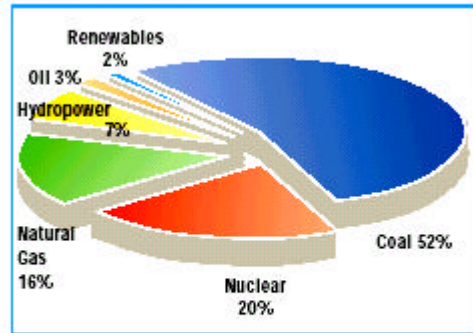
In Chapter 6 we find a token gesture toward funding for research into "next-generation technology" including the use of hydrogen as a fuel and nuclear fusion, which the DOE already has been funding for decades to the exclusion of many other deserving technologies. The NEP also expands the role of energy conservation and efficiency with an expansion of the

government's Energy Star certification program and more money for weatherization upgrades to low income housing.

Cheney is quoted on page 10 of the report as saying, "Here we aim to continue a path of uninterrupted progress in many fields...New technologies are proving that we can save energy without sacrificing our standard of living. And we're going to encourage it in every way possible."

The NEP recommends in Chapter 5 the passage of comprehensive electricity legislation that

Fuel Sources for Electricity Generation in 2000



Electricity is a secondary source of energy, generated through the consumption of primary sources. Coal and nuclear energy account for over 70 percent of U.S. electricity generation.

Source: U.S. Department of Energy, Energy Information Administration.

"promotes competition, protects consumers, enhances reliability, promotes renewable energy, improves efficiency, repeals the Public Utility Holding Company Act, and reforms the Public Utility Regulatory Policies Act." Meanwhile, until energy supplies are more plentiful, President Bush said he would work with Attorney General John Ashcroft and the Federal Trade Commission (FTC) to ensure that no price gouging is allowed. "You know, we can't overcome the fact that we haven't built a refinery in years and we should have. We can make sure that any entity will not illegally overcharge. And so I'm calling on the FTC to make sure that nobody in America gets illegally overcharged. And we're going to make sure FERC (Federal Energy Regulatory Commission) will monitor electricity suppliers to make sure that they charge rates that are fair and reasonable." Bush said (ENS, 5/17/01).

Analysis

The Bush-Cheney NEP plan is advertised as a "comprehensive long-term strategy that uses leading edge technology to produce an integrated energy, environmental and economic policy." These are lofty goals. But the NEP plan, unfortunately, misses much of the picture. As we enter a new century, our energy system must become increasingly diversified, efficient, resilient, and immune to price shocks. Over-reliance on fossil fuels and nuclear power, in an era when efficiency and renewable energy increasingly drive modern economies, is a mistake.

The Bush-Cheney plan assumes staggering new energy supply requirements, but these are based on questionable DOE projections that assume "business-as-usual." *It calls for fossil fuel and nuclear energy supply expansion*, but makes this recommendation in an economic void, when a volatile market has stopped many large energy investments. The 2001 NEP is actually an old vision, as James Watt noted above in the Introduction, a plan based on "has-been" energy technologies that will more hamper than help the U.S. economy, according to the Energy Foundation, a joint initiative of the MacArthur and Rockefeller Foundations.

To summarize some of the major shortcomings, it is noted that the NEP:

- Does not provide any scientific analysis of why large energy supply expansions are necessary in general and why fossil fuel and nuclear power supply expansions are necessary in particular;
- Does not assess the vast potential for energy efficiency and renewable energy to more cheaply, cleanly, and rapidly obviate the need for fossil fuel and nuclear power supply expansions;
- Does not have a vigorous research and development program with tax credits to develop technologies that stimulate the market for fuel cells, solar panels, and microturbines.

- Does not include a comprehensive set of tax or other incentives for energy efficient technologies including incentives for highly efficient appliances, heating and cooling systems, new homes, and commercial buildings;
- Does not reverse the rollback of air conditioner standards announced by the Bush Administration or propose specific new efficiency standards on other products;
- Does not propose raising the Corporate Average Fuel Economy (CAFE) standards on new cars and light trucks (but instead indicates that this might be considered at some later date);
- Does not provide greater funding for energy efficiency programs conducted by the Department of Energy, but instead maintains the cut in energy efficiency R&D and deployment programs (apart from grants to low-income households) of \$180 million (29 percent) recommended in the Administration's fiscal year 2002 budget request;
- Does not emphasize the latest clean energy technologies with zero carbon dioxide emissions, but instead emphasizes an ill-conceived program to emphasize "clean coal" technologies that heavily emit carbon dioxide, implicated in global warming;
- Does not apply rational economics to the issue of nuclear power, which is so expensive that no new plant is foreseeable in a competitive marketplace.
- Does not require that the U.S. get 10 percent of its power from renewable energy such as biomass, geothermal, wind and solar power by 2010, as a strategy to lower demand, and thereby prices for natural gas. (The California legislature is considering a bill to require 20 percent by 2010 and the former Governor G. W. Bush signed just such a standard in Texas.) The NEP in fact does not contain any significant programs for renewable energy resources, such as a national minimum renewable energy requirement ("renewable portfolio standard");
- Does not include a national four-pollutant bill that would provide regulatory certainty for power plant developers and utilities and a steady decline in acid rain, smog, mercury and global warming emissions. This would reduce the wasted investment that results from a one-pollutant-at-a-time approach; the approach is endorsed by many utilities. (In fact, Candidate Bush endorsed this plan, but has since dropped the campaign promise.)
- Does not provide federal incentives for maximizing the efficiency of power plants, (e.g. plants that use waste heat to supply factories, generically known as combined heat and power). In fact, the NEP does not contain any proposals, such as a national system benefits fund, that would help spur utility energy efficiency programs nationally (presently dirty or wasteful power plants make just as much money as clean, efficient ones);

In its defense, the Bush-Cheney NEP does provide for helpful first steps on several fronts. Tax incentives for consumer purchases of energy-efficient hybrid and fuel cell vehicles are very helpful, as is the proposed tax change for combined heat and power systems. In the absence however, of broad policies designed to make cars and power plants cleaner, these programs are mere gestures. If the plan included a full set of energy efficiency and renewable energy initiatives, we would not need to drill for oil in environmentally sensitive areas or build hundreds of new coal-fired or nuclear power plants.

Comparison

The national energy policy introduced by President Bush and Vice President Cheney places a great deal of emphasis on the supply side of the equation. Although it provides a few gestures to energy efficiency and to renewable energy, it is clearly focused on more fossil and nuclear power plants, along with new domestic oil production.

Some of the controversial items of the Bush-Cheney plan are to:

- *Open federal lands*, including Alaska's Arctic National Wildlife Refuge, to oil and gas exploration.
- Allow federal regulators to *seize private property* for construction of electric power lines.
- Ease regulations to promote *expansion of oil refineries*, power plants and oil and gas pipelines.
- Help utilities *extend licenses of nuclear power plants* and develop a national waste repository.

However, these action items may not be in the best interest of the nation's economy and environment, as many environmental groups stated shortly after the release of the Bush-Cheney NEP. It is suggested by the Energy Foundation, for example, that instead a balanced plan is needed that is the least cost, provides the quickest solutions, and does not compromise our environment. A balanced energy plan would look at the full costs of different energy options and give America a plan minimizing the costs and maximizing economic prospects. It could be indifferent to whether we generate a new kilowatt-hour or cost-effectively save one. It would consider a gallon of saved gasoline equal to a new one pumped from the ground. *Cost analysis, not supply or demand ideology, could drive the nation's energy choices.*

The fastest choices to address energy needs, as opposed to the choices offered in the NEP, may be the new set of energy technologies developed over the last decade. New modern energy technologies range from high-tech wind turbines using the latest research from the aerospace industry, to super-efficient air conditioners that cool just as well as their old counterparts with half the energy use, to state-of-the-art natural gas-fired power plants with efficiencies double those of the power plants they replace. They tend to be modular, they benefit from economies of manufacturing, and they can be installed and operating much more quickly than old large-scale energy technologies.

The cleanest, healthiest choice is always more desirable than the dirty technologies advocated in the NEP. Americans will always choose the cleaner option, especially if costs are roughly equal, according to opinion polls. The energy investment choices we make this decade will be with us for 30 to 40 years, making the imperative for clean, healthy energy sources all the more clear.

Power Plants

The Bush-Cheney plan calls for new subsidies for outdated technologies, such coal and nuclear power, and for rolling back environmental standards. This focus may have been relevant in the middle of the last century, but makes little sense in the face of 21st century technologies. Coal and nuclear power are unsustainable. No new nuclear plants have been ordered in the U.S. for over 25 years—even before Three Mile Island—and few coal plants have been built in the last 10 years. The reasons are simple: they are not economical.

The market is moving in the opposite direction. About 80,000 megawatts (MW) of new superefficient and clean natural gas power plants are in the works. The real question is whether we are becoming too dependent on natural gas, and what other new technologies we can use to supplement gas. Renewable power plants—wind, biomass, geothermal and solar—are increasingly cost-effective and work very well in tandem with gas plants. Over 2000 MW of wind power will come online this year in the US. Industry analysts expect wind power to grow by 30,000 MW worldwide over the next five years. (The U.S. presently generates about 420,000

MW per year or 3.7 trillion kWh—from DOE statistics.) The Bush-Cheney plan extends the current tax incentive for renewables, but cuts renewable R&D budgets by 50 percent, and fails to set any targets for new renewables.

The public is also moving in the opposite direction of the Bush plan: a recent poll in USA Today found that 91 percent of Americans prefer moving toward renewable energy.

In direct opposition to the majority of public opinion, the Bush-Cheney NEP plan would:

- Give federal regulators the power of eminent domain to take private property to build more transmission lines.
- Relax air pollution standards (“new source review”) for new power plants.
- Provide new subsidies for nuclear and coal power while cutting funding for renewable R&D.

Instead, features that many states are now adopting could be added to the national energy policy before it passes as new legislation. The American public expects this since many states are requiring more environmental awareness.

Renewable Energy

Renewable energy resources—solar, wind, biomass, hydroelectric and geothermal—get short shrift in the NEP plan. The only significant new effort entails an unacceptable environmental blackmail—\$1.7 billion in leases from oil drilling in the Arctic National Wildlife Refuge would be used for clean energy sources. Yet the potential for renewable energy is huge. Shell Oil forecasts that renewables could supply half of global energy needs by 2050. The Bush-Cheney plan seems designed to ensure that fossil fuels stay dominant (BTM Consult, *World Market Update 2000*, April 2001).

Renewable energy is on the cusp of market acceptance worldwide, with potentially huge benefits for our society and economy. A balanced energy plan would ensure that renewables move into the mainstream as fast as possible. Fortunately, energy market trends are positive. Utilities are investing in wind farms because they are cheaper than gas-fired power plants at today’s fuel prices, because they can be built faster than coal plants, and because they are low-risk, with fixed costs that are known upfront. Large wind farms in the Pacific Northwest, Texas, Iowa, and Minnesota are generating energy at about three cents per kilowatt-hour, among the cheapest new sources of power. Presently wind power is the fastest growing renewable and has been for years.

Wind power brings substantial economic benefits, especially to farmers, ranchers and rural communities. A wind developer typically pays about \$2000 per year per turbine to lease about a quarter-acre of land from a farmer, which at current crop prices, is much more lucrative than growing crops on that land. Biomass energy can also be a boon to rural economies.

To speed up renewable energy technology adoption, the Bush-Cheney plan could have included stronger measures. A short-term and long-term solution is a renewable energy standard, or RPS, like the one then-Governor Bush signed in Texas. There, developers are rushing to build almost \$1 billion worth of new wind farms this year, enough power to supply 250,000 homes.

Industrial Sector

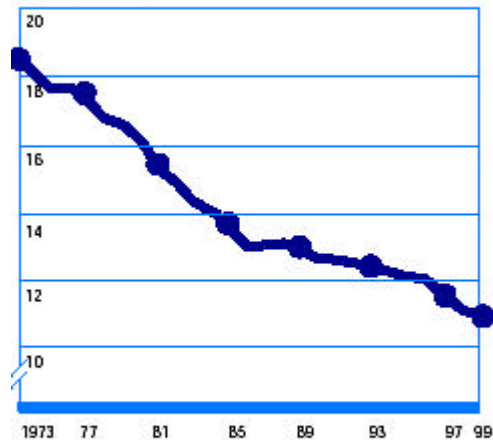
The industrial sector has become vastly more energy efficient over time—from 25 to 45 percent over the past 25 years—and has saved hundreds of billions of dollars along the way. Seeking to

continue these trends and commit to making American industry the most productive and efficient in the world, through voluntary efficiency agreements, aggressive new technology programs, and expanded R&D would make a lot of sense. Aside from reducing barriers to combined heat and power, the NEP plan makes no concrete commitments to improving industrial energy efficiency.

Industrial energy consumption is the slowest growing sector because many industries are

The U.S. Economy Has Become More Energy Efficient

(Thousands of Btus)



The amount of energy used by the United States in relation to its economic output has steadily declined since the early 1970s.

Source: U.S. Department of Energy, Energy Information Administration.

already aware of the bottom-line benefits from improving efficiency. Major companies like Alcoa, Ford, United Technologies, DuPont, IBM, and Baxter have independently committed to improve their energy efficiency 15 to 50 percent.

Unfortunately the Bush-Cheney plan misses the opportunity to help forward-thinking businesses like these. Instead, the dollars flow to new energy supply. The plan vaguely recommends to “establish a national priority for improving energy efficiency,” and to “improve the energy intensity of the economy,” but a look at the *Bush-Cheney budget proposal—which cuts industrial efficiency programs by 41 percent—shows just how small a priority industrial efficiency really is for this Administration.*

The gap between Bush and Cheney’s old ideas and the potential for new technologies become apparent with the Energy Information Administration (EIA) projection of industrial energy needs in 2010 and 2020 to be 39 quads and 43 quads, respectively. By 2020 this would

require 2.8 trillion cubic feet of new natural gas supply and 250 new power plants. A study by the National Labs, *Scenarios for a Clean Energy Future*, shows that industrial energy can be held constant or even decline—almost entirely through more aggressive use of voluntary programs—and industry will save \$8 billion per year (see the graph on this page taken from Chapter 4 of the NEP). The industrial sector’s reduced electricity consumption alone would save 210 power plants by 2010 and 375 power plants by 2020. Independent analysts concluded that the Clean Energy Future policy path would benefit 96 percent of American businesses and create 260,000 new jobs across almost all sectors of the economy.

The Bush-Cheney plan calls for tax credits, reduced regulatory barriers, and better tax treatment for combined heat and power projects, which are fine as long as environmental protections remain intact. Features in this area that have been left out of the NEP are the following:

- Short term price caps in Western electricity market to help industry manage costs.
- Incentives for clean combined heat and power (cogeneration).
- Expanded funding for industrial efficiency R&D and voluntary partnership programs.
- A long-term commitment to improve industrial energy efficiency at least 1.5 to 2 percent a year, making American companies the most efficient and productive in the world.

Utility Energy Efficiency Programs

Of all the solutions available to address rising electricity and natural gas prices, none is as fast and cost effective as increasing energy efficiency. The Bush-Cheney plan ignores the

tremendous past savings and future opportunities for utility energy efficiency programs. Energy efficiency is by far the cheapest “source” of power and truly equivalent to generating power. It saves energy while putting money in consumer’s pockets. As President Bush highlighted energy efficiency during the release of the NEP plan, leading energy efficiency experts found the Administration’s support for energy savings mostly talk and little action. “The Bush-Cheney energy plan contains relatively few concrete proposals that will save energy,” stated Howard Geller, former Executive Director of the American Council for an Energy-Efficient Economy. “President Bush has missed a golden opportunity to advance America’s cleanest, cheapest, fastest, and least controversial energy source—namely increasing energy efficiency” (ACEEE, 6/01).

At their peak in the early 1990s, utility energy efficiency or “demand-side management” (DSM) programs were funded at \$2.7 billion and avoided the need for as many as 100 new coal-fired power plants. California reduced peak power demand by 20 percent, or 10,000 megawatts (MW) over the past 20 years, with a combination of utility DSM programs and building and appliance standards. *The cost of saving electricity is less than 3 cents per kilowatt-hour, less than half the typical delivered cost of electricity in the US.*

But the trend toward competitive markets caused utilities to abandon these programs, cutting them in half by 1998. Recognizing their value, 18 states have set up “public benefits funds” administered by either state agencies, non-profit groups, or by utilities. Combined, these state funds add up to \$2.1 billion for energy efficiency, renewables and low income assistance.

The Bush-Cheney plan ignores this trend—and gives only lip service toward energy efficiency, dismissing it as “a sign of personal virtue.” Yet energy efficient technologies abound, from compact fluorescent lights and sulfur bulbs to new refrigerators to LED traffic lights. All of these technologies work better and at lower cost than their antiquated predecessors. A 21st century energy plan like the NEP that places no emphasis on new technologies is behind the times.

Another innovation—though it is a normal function of other markets—is to enable customers to respond to the price of power as it changes throughout the day. With a deregulated power market, the price of electricity during peak times has exploded. Building new power plants, transmission lines and gas pipelines to generate power for those peaks takes a long time. A faster, cheaper and cleaner solution is to use the Internet-enabled, real-time markets to let big customers reduce demand in response to high prices. Utilities in Georgia and Washington have found that customers are eager to save money by shifting their consumption to off-peak hours. This reduces the need for power plants, lowers costs for all consumers, and reduces pollution on the smoggiest days. The NEP plan says nothing about this approach.

In this area of energy efficiency, the NEP fails to:

- Create a federal matching fund for state energy efficiency funds. Pending bipartisan bills propose such a fund that would collect about \$1 per month per household. The American Council for an Energy Efficient Economy (ACEEE) says that this matching fund could save 3.5 percent of total projected electricity demand in 2005, 9 percent in 2010, and 17 percent of projected demand in 2020—equal to the power output of over 415 large (300 MW) power plants.
- Encourage the spread of real-time market response, especially by big commercial and industrial customers.

Buildings and Appliances

The Bush-Cheney plan offers nothing new for buildings and appliance energy efficiency. Indeed, there is a severe disconnect between the rhetoric of the plan and the sharp cuts in the proposed

energy budgets. Energy standards save energy in very substantial amounts. U.S. appliance standards currently in place will reduce U.S. energy consumption by nearly 8percent from what it otherwise would have reached by 2020, and save consumers \$186 billion. New standards, expanded voluntary programs, and tax incentives for existing and new buildings could help avoid building another 600 power plants.

Incredibly, the Bush administration is attempting to rollback a recently completed standard for central air conditioners that already has been signed into law. If this rollback succeeds (the DOE is being sued by several groups over this violation), consumers will spend nearly an extra \$1 billion per year, and the nation will need to build an additional 43 power plants (300 MW each) in the next 20 years to meet the additional electricity demand according to Representative Markey, in his presentation before Secretary Abraham at the Hearing before the Committee on Energy and Commerce at the 107th Congress (6/13/01). He further pointed out that America's second-largest air conditioner manufacturer, Goodman, has already met the higher standard.

Rep. Markey, who coincidentally was the author of the standard, quoted a line from the statute to Energy Secretary Abraham and then informed him of the legal consequences:

“The Secretary may not prescribe any amended standard which increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product.’ Here we are talking about air-conditioners. Now, in rolling back, Mr. Secretary, the final air-conditioning rule adopted by the Clinton Administration, *you are in clear violation of this no rollback provision*, and you are in violation of that law at the same time that your administration is saying that we have a national security crisis that is going to call for the abrogation of the ABM treaty...”

The Bush-Cheney plan does encourage the “Secretary of Energy to establish a national priority for improving energy efficiency.” But against the decisions already made, such as the one Rep. Markey cites, this is but window dressing.

For example, in this area of buildings and appliances, the plan contains:

- No concrete deadlines or proposed levels for appliance efficiency standards;
- No tax incentives for more efficient appliances, homes, or commercial buildings;
- No efficiency mandates for federal facilities and schools;
- No plans to restore funding to energy efficiency research and development programs.

The real position on energy efficiency is reflected in the Bush budget, which cuts efficiency programs by 30 percent. Despite directing the Secretary of Energy to “support the appliance standards program for covered products, setting higher standards where technologically feasible and economically justified,” the budget cuts funding to set appliance standards by 53 percent. Even the Energy Star program, so prominently featured in the NEP with supportive language, suffers under the Federal DOE budget.

DOE programs have saved the nation \$30 billion in energy costs over the past twenty years, at a taxpayer cost of only \$712 million over the past decade. Yet the budget cuts are broad and deep. Building efficiency R&D is cut by 45 percent, industrial efficiency R&D by 41 percent, and efficiency programs in federal facilities by 48 percent. *The NEP lauds the development of next-generation, super-efficient technologies, but budget cuts will make it impossible to get them to market.*

As the Clinton Administration signed into law, the Bush NEP should have finalized the air conditioner standard at a 30 percent improvement. Additionally, it could have issued progressive

standards for all of the other appliances required to be updated in the 1987 and 1992 appliance efficiency laws, and begin work on other new standards; expanded public funding and Energy Star programs for existing and new buildings; created tax incentives for super-efficient new appliances, homes, commercial buildings, and heating and cooling equipment; and increased the DOE's energy efficiency R&D budget by 20 percent compared to last year.

Gasoline, Autos, and the Environment

Gasoline prices have been rising across the U.S., and will continue to edge toward \$2 per gallon. The Bush Administration correctly notes that many of our oil refineries are running at near-record capacity, and that this is leading to higher prices. (However in 2002, Bush convinced the Russians not to cut back on production as OPEC wants. This may be artificially depressing the gasoline prices).

Unfortunately, the hallmarks of the Bush-Cheney plan—drilling for oil in the Arctic National Wildlife Refuge and rolling back environmental standards—would do little to solve the situation, and come at enormous cost to the environment. More efficient cars and trucks, using advanced technologies backed up by fuel economy standards, offer a faster, cheaper and cleaner solution.

Expanding domestic oil production is essentially impossible in the short term. It takes years to drill new wells, build new pipelines, and build or expand refineries. We are already the most perforated nation on earth, and few communities are willing to adopt the environmental and public health threats of refineries, which now release 36,000 tons of toxics annually.

The Bush-Cheney plan calls for vastly greater oil drilling, opening public lands for new development, reconsidering laws that protect the Outer Continental Shelf, opening the Arctic National Wildlife Refuge for drilling, granting tax breaks for off-shore drilling, and generally working to drain the country's oil reserves as quickly as possible.

Reducing demand is a faster, cheaper and cleaner response—and is more plausible. Cars in America doubled in fuel efficiency between 1973 and 1985, due to the Corporate Auto Fleet Efficiency (CAFE) standards. These standards have saved Americans some \$400 billion, even as our cars have grown more powerful, more reliable, and safer.

Unfortunately, that progress stopped in 1985, and has been slipping ever since. In fact, light trucks, minivans, and sport-utility vehicles have much more lax fuel economy standards due to a loophole in the law, and as these grow in popularity, our fuel consumption grows. The Bush-Cheney plan fails to close this loophole. Simply closing this loophole would save as much energy as produced by a dozen large refineries. *The Bush Administration should immediately boost fuel efficiency standards in automobiles.* This would ensure that new cars and trucks are dispatched with cleaner technologies, and reduce pressure on the refineries and oil imports. Fuel-efficient cars and trucks achieve a key goal of the Bush Administration: putting more money in consumers' pocketbooks. Closing the SUV loophole would save drivers \$15 billion at the pump in 2010 to spread throughout the nation's economy. However, the auto industry has probably lobbied the NEPD Group not to consider such changes.

The Environmental Protection Agency estimates that even a one mile per gallon increase in CAFE standards would save six billion gallons of gasoline, \$9 billion in consumer fuel expenditures, and 15 million tons of global warming gases each year and would reduce the trade deficit by up to \$3.6 billion.

The Bush-Cheney plan does offer tax credits for hybrid and fuel cell vehicles, which can cut energy use in half. These are commercially available today from Toyota and Honda, and all the

major automakers have promised hybrids in the next two or three years. *Simply setting standards for tire performance would save more energy than is likely to be produced by drilling in the Arctic National Wildlife Refuge, and in far less time.*

Regarding fuel usage, the NEP has failed to:

- Close the SUV loophole on CAFE standards.
- Set standards for fuel economy in automobiles and light trucks that gradually increase over time.
- Restore and expand funds cut from federal R&D programs to promote vehicle fuel efficiency.
- Add to heavy-duty truck technology programs.
- Implement the proposed tax credits for advanced technology vehicles.
- Increase the supply of liquid fuels from renewable sources, like ethanol.

Environmentalists' Assessment

According to Steven Nadel, ACEEE Executive Director, "The Bush-Cheney plan acknowledges the vital role that energy efficiency played over the past 25 years and it includes a few specific proposals that will improve energy efficiency. Tax incentives for energy-efficient hybrid and fuel cell vehicles are very helpful, as is the proposed tax change for combined heat and power systems. But the plan fails to advance a complete set of policies needed to stimulate cost-effective efficiency improvements throughout the economy. If the plan included a full set of energy efficiency initiatives, we would not need to drill for oil in environmentally sensitive areas or build hundreds of new coal-fired or nuclear power plants."

Geller added, "The plan clearly undervalues the role that energy efficiency can and should play. Increasing energy efficiency could do more to help consumers and businesses lower their energy bills than anything in the Bush-Cheney plan. Increasing energy efficiency also could do more to lower oil imports, reduce the risk of power shortages in the short run, and decrease pollutant emissions. And the policies needed to increase energy efficiency - tougher efficiency standards; financial incentives for those purchasing energy-efficient products; and expanded research, development, and deployment programs - are strongly supported by the public, unlike drilling for oil in environmentally sensitive areas or building new coal-fired and nuclear power plants."

ACEEE's policy recommendations were requested by the Cheney task force but were largely ignored. But many of these recommendations are reflected in bills already introduced in the Congress. Recommendations, testimony, and fact sheets are available on ACEEE's web site <http://aceee.org/energy>.

Environmental groups note that the NEP emphasizes expanding fossil fuels production, conventional power supply capacity, and nuclear power. They often conclude that the NEP contains few concrete proposals that will increase energy efficiency and renewable energy supplies. In contrast, it is clear that expanding fossil fuel production, conventional power supply capacity, and nuclear power would be very costly. Furthermore, most agree that it would take many years to deliver any results, would harm the environment, and is not broadly supported by the public. Increasing energy efficiency, as noted above, is cheaper, cleaner, faster, and much less controversial. Renewable energy is the fastest growing source of energy supply in the United States today and it could be our primary new source of energy in the future. A sound national energy strategy, say most environmental groups, would give priority to increasing energy efficiency and expanding renewable energy supplies.

An activist group like Greenpeace (www.greenpeace.org) responded with a detailed analysis that attacked the NEP areas with their own exclamatory one-liners summarizing what the NEP really seems to be saying, in what they call, “Top Ten Ripoffs, Sellouts and Industry Paybacks in the Bush Energy Plan”:

- Global warming policy is secondary to energy production!
- Energy production first!
- Renewables cannot help us now!
- The economy will suffer!
- Fossil fuels and nukes rule!
- A “balanced” plan!
- “Clean” coal is the answer!
- Drilling in the Arctic = US oil independence!
- Nukes are the solution!
- Efficiency measures will make Americans suffer!

Greenpeace notes that consequences of global warming have not been assessed by the Bush administration and therefore do not appear in the NEP, except as a recommendation for more study. The DOE’s Interlaboratory Working Group, they note, produced a report in 2000 that reviewed proposed policies supporting efficiency and clean energy concluding, “policies exist that could significantly reduce inefficiencies, oil dependence, air pollution and greenhouse gas emissions at essentially no net cost to the US economy” (Letter from Sen. Harkin to President Bush, April, 2001). The NEP seems to ignore the findings of the DOE to a large extent.

Groups like Greenpeace emphasize that renewable energy is the fastest growing energy market in the world. Wind, for example, is already cost competitive with fossil fuels and uniformly outperforms nuclear. For example, this year the Bonneville Power Administration (BPA) covering the U.S. Northwest, solicited industry for wind generation project proposals. Twenty-five feasible proposals were submitted offering the equivalent of 2,600 megawatts of energy. If one includes expansion plans within the proposals, over 4,000 megawatts of wind power potential could be implemented (*BPA News*, 4/26/00). One study by the five major U.S. national energy laboratories commissioned by the Department of Energy concluded that fair competition coupled with \$160 million (the average cost of one nuclear power plant) a year for 20 years in research and development (R&D) budget would result in renewable energy providing power for three-fifths of current U.S. energy use (SERI, 1990). In regards to the NEP call for more R & D dollars (Bush’s 2002 DOE Budget failed to increase funding for R&D), there has been a comprehensive study to show where most government R & D has gone. According to the Green Scissors Campaign, between 1948 and 1998, the federal government spent \$111.5 billion on energy research and development programs. Of this amount, 60 percent, or \$66 billion was dedicated to civilian nuclear energy research, and 23 percent, or \$26 billion, was directed to fossil fuel energy research (Friends of the Earth, USPIRG, 2000). Is it any surprise that the critics are accusing the NEP of reviving old ideas?

As of the year 2000, the U.S. provided subsidies to the fossil fuel industries to the tune of an estimated \$20 billion a year. The government favors mature, conventional, supply-side energy resources, e.g. fossil fuels, fission-nuclear and hydroelectric, by more than eight to one (\$32.3 billion to \$3.8 billion) over clean, emerging energy resources with more global marketplace

potential such as solar or wind technologies (*Hotspot*, Climate Network Europe, May, 2000). Since 1947, according to the Renewable Energy Policy Project, cumulative \$150 billion in federal subsidies have gone to nuclear, solar and wind power and 96.3 percent of that total went to nuclear (Marshall Goldberg, REPP, "Federal Energy Subsidies: Not All Technologies are Created Equal," 2000). Therefore, the NEP is consistent with past federal trends.

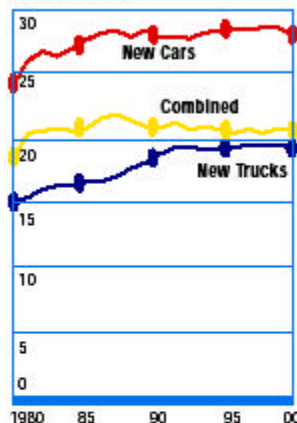
The Sustainable Energy Coalition's (SEC) Energy Task Force for example, developed a system that evaluates the Bush-Cheney energy plan in twelve (12) main areas of concern. The SEC and its members provided their recommendations to the Cheney Energy Task Force (same as the NEPD Group) but were also largely ignored. The SEC graded the final NEP plan with a "pass", "fail", or "incomplete" in each of the 12 areas. (An incomplete is an insufficient attempt at a passing grade.) Looking at each of the SEC areas of concern and their recommendations offers an insight into what an environmentalist's perspective might be in regards to the main NEP issues:

1) Energy Efficiency Tax Incentives

SEC recommended that NEP offer tax incentives for a variety of innovative energy-efficient technologies—hybrid and fuel cell vehicles, highly efficient new homes and commercial buildings, highly efficient appliances, and combined heat and power systems. Many new energy-efficient technologies have been commercialized in recent years or are nearing commercialization. But these technologies may never get manufactured on a large scale or widely used due to their initial high cost and market uncertainty. Tax incentives can help manufacturers justify mass marketing and help buyers (or manufacturers) offset the relatively high first cost premium for the new technologies, thereby building market share and reducing costs through economies of scale (ACEEE). The NEP includes tax incentives for hybrid and fuel cell vehicles and combined heat and power systems, giving it a grade of INCOMPLETE.

2) Renewable Energy Tax Incentives

Fuel Efficiency of Light Vehicles Has Remained Flat
(Miles per Gallon)



Despite the adoption of more efficient transportation technologies, U.S. average fuel economy has been flat for 10 years. In large part, this is due to the growth of low-fuel-economy pickup trucks, vans, and sport utility vehicles.

Source: U.S. Department of Energy, Energy Information Administration.

Broaden the current renewable PTC to include solar, geothermal, open loop biomass, co-firing biomass with coal, and incremental hydropower, said SEC, while also providing an investment tax credit for residential purchasers of solar and small wind systems as well as tradable tax credits for publicly-owned utilities or rural cooperatives. While renewable energy technologies have significant benefits (environmental, safety, geographic accessibility) over traditional fossil fuels and nuclear, they are emerging technologies and must compete with traditional energy resources that are subsidized by taxpayers from \$2-\$8 billion per year. Currently there is a Production Tax Credit (PTC) for wind and closed loop (dedicated crop) biomass (America Bioenergy Association). The Bush-Cheney Plan includes tax incentives for solar systems and open loop biomass, but not for geothermal, incremental hydropower or small wind systems, yielding another grade of INCOMPLETE.

3) Raising Corporate Average Fuel Economy (CAFE) Standards (or equivalent fuel consumption cap)

Increase the CAFE standards for cars and light trucks 5% per year for 10 years to reach 44 mpg for cars and 33 mpg for light trucks by 2012, with further improvements beyond 2012. CAFE standards adopted in 1975 were the main reason that the fuel economy of new cars and

light trucks dramatically improved during the late 1970s and early 1980s. But the car standards reached their peak level in 1985, and the average fuel economy of new passenger vehicles (cars and light trucks) has declined from about 26 miles per gallon (mpg) in 1988 to 24 mpg in 2000. (However, the NEP shows in the accompanying graph from Chapter 4 that the mileage has been level for new cars and improved for new trucks, which contradicts the quoted figures.) Raising the standards could save 1.5 million barrels of oil per day by 2010 and over 4.5 million barrels per day by 2020 (Union of Concerned Scientists). However, the Bush-Cheney Plan provides no commitment to raise the CAFÉ standards which forced a grade of FAIL.

4) Systems Benefits Trust Fund

Create a national systems benefits trust fund that would provide matching funds to states and utilities for eligible public benefits expenditures. Specifically, SEC recommended a charge of two-tenths of a cent per kWh. Electric utilities historically have funded programs to encourage more efficient energy use, assist low-income families with energy bill payment, develop renewable energy sources, and undertake other R&D. However, increasing competition and restructuring have led to a steep decline in these “public benefit expenditures” over the past five years. In order to continue energy efficiency programs and other public benefits activities, some states have established system benefits funds through a small charge on all kilowatt-hours (kWhs) flowing through the electric grid. The federal government could take steps to ensure that all states do so (Alliance to Save Energy). The NEP does not propose a systems benefit fund and therefore is graded FAIL.

5) Renewable Fuels

Triple the use of ethanol by 2010 to 4.5 billion gallons. In addition, S.670, introduced by Senators Lugar and Daschle (similar to provision passed by the Senate Environment and Public Works Committee in the 106th Congress), sets a renewable fuels standard that the Coalition strongly supports. Renewable Fuels such as ethanol, biodiesel and other biofuels could potentially provide up to 4% of the nation's transportation by 2010 and 10% by 2020. Senator Richard Lugar introduced legislation authorizing a Bioenergy Initiative calling for tripling the use of biofuels and other bioproducts by 2010. That legislation was signed into law and supporting funds were appropriated (American Bioenergy Association). The Bush-Cheney NEP Plan does not propose a Renewable Fuel Standard that would require transportation fuel to contain a minimum percentage of fuels produced from renewable sources. However, the NEP does extend the ethanol tax incentive and propose research funding to promote the development of new technologies and expand ethanol production and use and is graded INCOMPLETE.

6) Energy Efficiency Research, Development & Deployment (RD&D)

Increase the DOE's and EPA's energy efficiency RD&D programs by 20% in FY02. This would be an increase of the DOE's programs from \$815 million in FY01 to \$985 million in FY02 and the EPA's programs from \$105 million in FY01 to \$126 million in FY02. Energy efficiency RD&D programs operated by the Department of Energy (DOE) and Environmental Protection Agency (EPA) are helping to increase the energy efficiency of U.S. buildings, appliances, vehicles, and industries. In 1997, the President's Committee of Advisors on Science and Technology (PCAST) stated that “R&D investments in energy efficiency are the most cost-effective way to simultaneously reduce the risks of climate change, oil import interruption, and local air pollution, and to improve the productivity of the economy.” Unfortunately, the Bush Administration proposed cutting DOE's energy efficiency R&D and deployment programs (apart from grants to weatherize low-income households) by \$180 million (29%) in FY2002. Some programs were to be cut by 50% or more (Howard Geller, American Council for an Energy-Efficient Economy).

The Bush-Cheney Plan does not increase funding for the DOE's programs but does propose expanding the EPA's, yielding a grade of INCOMPLETE.

7) Renewable Energy RD&D

SEC recommended that NEP increase the DOE's renewable energy RD&D programs by 72% in FY02. This would have been an increase from \$375 million in FY01 to \$645 million in FY02. Investments in renewable energy technologies in solar, biomass, wind and other renewable energy technologies in the last 20 years have dropped the costs of these technologies dramatically. In 1997, PCAST stated that "with a strong R&D program coupled to appropriate demonstration and commercialization incentives, many renewable energy technologies have good prospects of eventually becoming fully competitive with conventional energy technologies in widespread applications." The Bush Administration's budget, however, proposed cuts of nearly 50% in most renewable technologies (Environmental and Energy Study Institute)! While funding for these programs was slashed in the budget, the administration is examining returning funding to FY01 levels for the FY03. Therefore, the NEP is given a grade of INCOMPLETE.

8) Appliance Efficiency Standards

Many environmentalists, including the SEC, want the DOE to reverse the rollback of new air conditioner standards announced by the Bush Administration in 2001. The Natural Resources Defense Council filed a lawsuit in Federal Court against the DOE over this unlawful move. The SEC would like the NEP to extend efficiency standards to additional products including refrigeration equipment, some types of light fixtures, and the standby power consumed by televisions, VCRs, and other electronic products. Minimum efficiency standards on appliances, motors, and lighting products remove inefficient products from the market but still leave consumers with a full range of products and features from which to choose. Standards already adopted have reduced consumer energy bills by \$50 billion and obviated the need for dozens of new power plants. But efficiency standards on some products should be strengthened, and standards should be extended to additional products (Howard Geller, American Council for an Energy-Efficient Economy). However, the Bush-Cheney Plan does not reverse rollback of AC standards but instead, calls for standards on additional products where technically and economically feasible, resulting in a grade of INCOMPLETE.

9) Renewable Portfolio Standard (RPS)

Include a national market-based RPS in any federal electricity-restructuring bill to require 10% RPS by 2010 and 20% RPS by 2020. A national RPS would require a minimum percentage of each electricity generator or supplier's resource portfolio come from renewable energy. Eleven states have passed an RPS. The Texas RPS, which calls for 3% of its electricity to come from renewables by 2009, has been so successful that the deadline likely will be met years in advance of the requirement (Union of Concerned Scientists). However, the NEP does not propose a renewable portfolio standard for the electric sector, so it does FAIL.

10) Net-metering, Interconnection Standards

Permit owners of small power systems to connect their systems to the grid, with standards established by the Federal Energy Regulatory Commission (FERC) and permit owners of grid-tied, renewable energy sources of 500kW or less to reduce their bills by the amount of electricity produced, while prohibiting existing restrictive covenants against rooftop solar energy systems. Net metering and interconnection standards would allow owners of small power systems to safely and economically connect their systems to the grid and reduce their electricity bills by the amount of electricity produced. Electricity bill reduction would be maximized if small generators

received the spot market price for any net electricity generated. Thirty states have passed net-metering standards (Solar Energy Industries Association). The Bush-Cheney NEP does not propose net metering or interconnection standards and so it does FAIL.

11) Nuclear Power RD& D and Regulatory Oversight

Eliminate numerous subsidies of the nuclear power industry. Nuclear power's marketplace performance has been dismal, requiring more than \$150 billion in construction cost overruns and ratepayer bailouts. In light of its economic shortcomings, production of nuclear waste and unresolved safety issues, taxpayer dollars should be shifted to cleaner, safer and more affordable power plant and efficiency technologies that are available today (Safe Energy Communication Council). The Bush-Cheney Plan does not eliminate any subsidies for nuclear power since they are pro-nuclear. The NEP goes even further toward supporting nuclear power by advocating the renewal of the Anderson Act, which indemnifies the nuclear industry against any damages caused by a reactor accident above \$9.5 billion, and seeks to extend coverage for any "free market," deregulated reactors that may be built in the future. Here, of course, the SEC gives the NEP a grade of FAIL.

12) "Clean Coal" RD&D

The SEC believes that mature and very profitable industries, with mature technologies in mature markets do not require precious taxpayer funds to subsidize incremental improvements in their technologies. Since its beginning in 1985, DOE's "clean coal" research and development program has received more than \$2.3 billion in federal funds. Many attempts to build "clean coal" plants have failed because of high costs and environmental concerns. The Administration's budget for FY02 included an increase of more than 800% for "clean coal" technologies (US PIRG). The NEP does not eliminate any subsidies for coal-fired power plants and gets one more grade of FAIL.

In conclusion, the NEP plan received 6 "fails", 6 "incompletes", and no "passes." *"In short, the plan is a disaster from the perspective of advancing a sustainable energy future for America,"* concludes the SEC Energy Task Force (www.sustainableenergy.org). The Sustainable Energy Coalition is a nationwide alliance of more than 30 business, environmental, consumer, and energy policy organizations. Member organizations of the Sustainable Energy Coalition do not support every item or issue adopted by the Coalition and generally focus on their issue area within the Coalition recommendations and policy positions.

Corporate Industrial Viewpoint

From the industrial and corporate perspective, the Bush-Cheney NEP goes easy on them to the extent of being tailored especially for them. Of course, the environment is quite far away from Wall Street. Businessmen concentrate and report on the fact that the markets are largely working. The corporate world does not have tremendous concern about the weather or the water. Nearly two decades of declining energy prices—often provided by exploration and production companies at an economic loss—fueled a growing economy and more recently, increased energy demand. That demand, combined with a lack of investment in new production capacity due to poor economic returns, has resulted in a shortage. Natural gas prices are higher. Gasoline prices are higher. Electricity prices are higher and no one is happy, except the power and energy companies that are making a lot of money. The NEP proposal wants to encourage new investment. Well, these companies are so happy and flush with cash that they are already investing into new production in order to capture higher prices. U.S. energy and electricity companies have been issuing debt—most of it investment grade—this year in record amounts to fund new investment.

Drilling rigs are operating at utilization rates not seen in years, a Pavlovian response to the high return on investment from new gas drilling. Although today's rig rate of 1,232 rigs is nowhere near the record rate of just over 4,500 achieved in the early 1980s, it does represent full utilization of today's rig fleet. (About 2,700 rigs were scrapped or cannibalized when oil and gas prices later collapsed.) In response to high gas prices, the industry now is building new drilling rigs to meet demand, thus helping gas production in the U.S. and Canada to continue to increase. New gas production is coming into the U.S. from Canada and overseas via liquefied natural gas (LNG) imports in record numbers. Two LNG regassification terminals are being renovated--with refurbishment plans that preceded the new energy policy--and several companies, including Texaco, Enron, CMS Energy Corp., and BP Amoco, are considering investments in new LNG terminals. Last year, the Alliance Pipeline and the Maritimes and Northeast Pipeline began exporting just over 2 billion cubic feet per day into the U.S. Both pipelines were permitted and built in record time. FERC just preliminarily approved the Phase III expansion of the Maritimes pipeline, which would bring 360 million cubic feet per day of LNG into New England. Other new pipelines are in the works. Supply is still chasing demand, as evidenced by gas prices that have been 2-3 times higher this year than in recent years. Nonetheless, new gas will become available to major gas-consuming regions of the U.S. from places such as Alaska, the deepwater Gulf of Mexico, the Mackenzie Delta region in the Northwest Territories, coal bed methane projects in the Rocky Mountains, and eastern, offshore Canada. Mexico might also soon export gas to the U.S. In addition, technology and prices are helping to render economic deeper horizons in very mature areas, such as the shallow waters of the Gulf of Mexico. Indeed, supply growth prospects across the natural gas industry in the U.S. and Canada are strong.

The electricity sector has not been standing idly by either, despite the perceived need to build a new power plant each week for the next 20 years—a plan, incidentally, that would likely cause serious credit concerns in the industry because of an eventual oversupply. The U.S. power industry is already seeing construction of new power plants at rates not seen in years. New turbines for gas-fired generation projects are almost impossible to procure until 2004. Even in California—a state that had not built new power plants for almost 10 years—developers are now building new power plants fairly quickly. Obviously local opposition and environmental critics have hindered construction of new power plants; a few more blackouts may change opinions quickly. For now, consumers have limited options, which the national energy policy will not change: Use less energy, pay more for energy and let prices allocate usage, or live with the construction of new plants.

The electricity sector is also providing "new capacity," as utilities restructure and spin generation out of cost-of-service operations into separate competitive generation. Because unused or unavailable capacity is a revenue opportunity lost forever, nonregulated generation has become much more reliable and efficient. The new owners, which have focused more on operations and maintenance, have increased availabilities from historic levels of about 80% to 90% and have been capturing greater market share.

Even the coal sector is responding to high price signals in the market. Coal production is up, as are prices, but they will come down as mining capacity increases. More surprising is the fact that developers are building coal-fired plants when many said it would never happen again. According to a study by Henwood Energy Services, in the U.S. *18 coal-fired plants with a total of about 18,000 MW are either under construction, permitted, or announced.*

The refining industry is already out ahead of the Administration's national energy policy plans to encourage new refining capacity. The laments about the closures of many U.S. refineries and

the absence of new refinery construction may be misplaced. The closures were generally old, small inefficient sites that could no longer run economically in the face of low gasoline and product prices, as well as environmental regulations. More importantly, despite depressed product margin, many refineries in the U.S. have already invested billions of dollars in upgrades and expansions during the past decade and only now are they recovering their sunk costs. (The industry failed to earn its cost of capital in nine of the past 10 years.) While unlikely that another refinery will be built in the U.S. because of construction and operating costs (a byproduct of our high national prosperity), several companies are studying the possibility of building greenfield capacity in emerging markets with an eye toward supplying the U.S. market. The refining industry is responding to the market's needs and in fact, credit and capital available for reinvestment in this sector has tremendously improved.

Today's high-energy prices are quickly implementing another goal of the president's national energy policy: Conservation. When consumers are forced to pay higher prices for commodities, such as energy, they usually change their consumption patterns. The nation is already seeing renewed interest and investment in more efficient energy technologies. Moreover, if electricity prices remain high for much longer, industries would expect to see such energy-efficiency technologies as time-of-day metering become more economically viable. Such a technology, coupled with proper price signals, would give consumers incentives to shift consumption to off-peak periods.

Today's high energy prices will inevitably be followed by tomorrow's dropping energy prices. It always happens. And when prices do fall, the "energy crisis" will again disappear from the public's eye, as have other past crises.

Questionable Initiatives & Benefits

Crisis sells policy initiatives. Opening up the Artic National Wildlife Refuge (ANWR) to drilling by the oil companies has become the most visible piece of the president's national energy policy. That potential ANWR oil production would do virtually nothing to address the U.S. energy position seems irrelevant to the Administration. On the other hand, making the politically and emotionally divisive ANWR the focal point of energy policy might derail the Administration's legitimate energy policy proposals.

Would an additional 600,000 barrels of oil production per day from ANWR really help consumers and the U.S. economy? Those who support ANWR drilling would have the country believe this to be so. But the answer is emphatically no, and the reason lies with the market power of the low-cost producers of OPEC. In contrast to most other industries, the oil industry's swing supplier is its lowest-cost producer, Saudi Arabia. If oil prices begin to fall, Saudi Arabia (in concert with other OPEC members) can simply choke back production and prices will rise. If ANWR production comes on line, OPEC can negate the benefit immediately by withdrawing an equal amount from the market. ANWR production will be a small drop in an ocean of world supply and demand (about 75 million barrels per day and growing); its influence on prices will be insignificant. True, ANWR production could marginally reduce dependence on foreign oil, but domestic oil production is not as much a matter of a security issue as an emotional one.

As a result of the oil shocks of the late 1970s, many new supplies of oil were developed in many parts of the world. Just next door, Canada has dramatically increased its production and is planning to invest billions of dollars more in converting its Alberta oil sands into synthetic crude oil for the U.S. More importantly, the financial fortunes of OPEC are more closely intertwined with the world's oil-importing countries than anyone could have imagined in 1973. Their economies cannot sustain a purposely created supply disruption that the Administration would

protect the U.S. from. Unquestionably the only true benefits will accrue to the oil companies that find and produce the oil in ANWR, and to the state of Alaska, which would benefit from the economic activity and royalty income. These investments will not produce additional supplies for at least five years, probably longer. Surely there are other places to invest that will provide better returns.

The Administration's national energy policy contradicts the president's stated faith in markets; the policy seems to suggest that the government will do a better job at picking economic winners than the market or the private sector. This recurring theme always seems to emerge when energy prices spike upwards. It is politically popular and seems to reinforce the notion of the all-knowing big government. The proposed national energy policy seeks to promote coal-fired generation and spend billions on a clean-coal research program that has been around since the mid-1980s. Indeed, nearly \$5.2 billion has been invested in clean-coal use programs since then, but the industry has built very few coal plants. With natural gas so cheap and uncertainty about future environmental mandates, it was difficult for the private sector to invest in new coal-fired generation. Only now, with high gas prices, is new coal construction being considered. Certainly, if markets expect coal-fired generation to be profitable, industry will have the incentive to undertake the research and investment on its own, as it already has. Government-funded research will help little, if markets already perceive the opportunity.

The Bush-Cheney energy plan would also subsidize economically challenged energy supplies like wind, solar, methane-sourced gas, biomass, and fuel cells. Some of these technologies may very well be viable, but if they have to rely on subsidies in order to succeed, a cloud of uncertainty will always hang around them. Investors, in particular, will necessarily be wary of funding such projects because of the threat that a political change in the winds will reduce or eliminate the subsidy. As an example of changing government whims, one only has to look at the Synthetic Fuels Corp. that grew out of the 1970s oil shocks. Its objective was to produce clean liquid fuels from shale oil and coal. *Once the price of oil fell in the 1980s, however, President Reagan shut down the program. Billions of dollars invested by the oil companies and the government went up in smoke, so to speak.*

Sadly, the nation's electric transmission system is not up to the task of moving power that today's power marketing and trading requires. Serious bottlenecks have developed. The system was originally designed to move power from large centrally located power stations directly into load centers within the utilities' franchises. Now power moves great distances and different directions that utilities never contemplated when they built the system. Compounding this problem is that very little investment in transmission has been made in almost a generation. Uncertain regulatory treatment and weak returns on investment discouraged investment. "Not in my backyard" opposition has contributed as much or more to lack of investment. Certainly this has been the case in California.

The Administration acknowledges in the NEP that the electricity industry has changed tremendously over the past few years, as it has begun transforming itself into a competitive, market-based concern. But the NEP proposal to pass legislation granting federal agencies the right to condemn private lands in order to build new transmission lines will likely face years of political and legal battles. States will not willingly give up control of what has been a state matter to the federal government. An approach that addresses regional transmission coordination and transmission tariff policy might work better. Utilities presently have no incentive to build new transmission lines.

Oddly enough, the market may come up with a better solution than the NEP plan for a national transmission grid: *Distributed generation or disbursed generation, or both*. Smaller power plants,

some the size of a refrigerator, that are close to load centers may turn out to be economically as efficient, and more acceptable, than massive investments in transmission. The market, if protected from regulatory distortions, will ultimately decide what works best.

Clean air has become a priority for most Americans. One only has to spend time in some of the noncompliant cities, such as Houston, Los Angeles, and Washington, D.C. to understand why. To address cleaner air, the Clean Air Act regulations require the refining industry to produce gasoline specifically tailored to the geographic and time-of-year markets in which it is burned. Consequently, the industry has "de-commoditized" gasoline into 50-60 different blends and, naturally, it costs more because of the loss of economies of scale. The national energy policy proposal would revisit these gasoline standards in an effort to lower gasoline prices (politically popular in the short-run). That would be a mistake. Such a move would obviate billions of dollars of investment that the refining industry has already made to produce cleaner burning gasoline and would cause capital to withdraw from the industry. Who would invest in the facilities needed to meet new diesel and gasoline specifications mandated over the next five years if the government could overturn the recovery of costs on a whim? Credit quality in the refining industry would undoubtedly erode. Moreover, such a move would reverse clean air progress to date; that is until energy prices fall again and pressure mounts to address air pollution again.

Finally, the NEP proposal would revisit government-mandated energy-efficiency requirements. While these arguably can have a positive effect of reducing demand – the auto industry fleetwide efficiency requirements greatly increased gas mileage and materially reduced U.S. oil demand--such regulations can have effects opposite of what was intended. (In a twist of irony, the Administration may even revisit the more stringent standards that the Clinton Administration tried to implement.) For instance, a government-mandated increase in energy efficiency in air conditioning could actually have a neutral effect on electricity demand. Consumers will quickly realize that for the same amount of electricity (or cost) they can now have a cooler home than before. Any energy efficiency requirements will have to be implemented carefully so as not to cause unintended consequences - always a risk with regulation.

The Finance World

One of the more serious problems that the U.S. energy industry faces is the dearth of infrastructure investment over the past 20 years. Competition in the electricity and gas sectors, as well as growth in the economy, has dramatically changed consumption patterns. However, the infrastructure has not kept up. Bottlenecks and shortages have done as much to cause price spikes as anything else. New investment is already bearing down on the problem.

Nonetheless, if the NEP proposal can provide regulatory certainty and minimize government intervention in the markets, it will go a long way toward providing a sound energy foundation for the country. Policies that streamline permitting and approval processes for energy investments, such as natural gas pipelines, power generation, and electricity transmission, will help the market respond quicker to price signals for new investment. Accordingly, investors will know that their investments will not be put at risk due to delays and re-regulation. Moreover, if the administration can facilitate the importation of energy from Mexico and Canada, the nation will begin to see the greater diversity of supply and security that the Administration wants.

The NEP proposal to promote competition in the electricity sector can benefit the economy as a whole if competition and deregulation are introduced in such ways that avoid the perverse results we have seen in California. Competitive schemes that hide price transparency in the market and place onerous restrictions on market participants, such as prohibitions against contracting, hedging, and risk management, will only sour competition and force a re-regulation

of the industry. Repeal of the Public Utility Holding Act of 1935 (PUHCA) should be one of the bright spots in the national energy policy. Repeal of this antiquated, largely irrelevant legislation will help the utility industry become more efficient and competitive, and ultimately bring lower energy prices to consumers. Over time, the Security and Exchange Commission has gradually eroded the main provision of PUHCA: The prohibition of investments not integral to a utility's primary operations. Repeal of PUHCA could harm utility credit if utility holding companies make risky or frivolous investments or if they take on capital structures with too much debt. That prospect seems unlikely, however, given that utilities are intensely focused on maintaining, or improving, their investment grade status. (See Chapter IV for more information.)

The Administration's NEP proposes to explore nuclear energy as a means to energy security. Although, as The *Economist* recently pointed out, nuclear power only displaces natural gas and coal, not imported oil. Nonetheless, the markets and the country may decide that nuclear power is economically viable. If so, the singular most important step that a national energy policy can do will be to devise a sustainable plan to handle waste disposal. To date, to see how badly the federal government has failed in this regard, one only has to look to the Yucca Mountain nuclear waste program where billions of dollars have been spent to little effect, following the passage of the 1982 Nuclear Waste Policy Act. Dealing with nuclear waste is not the only challenge. Investors, however, would be wary of utilities that elect to build new nuclear power plants. The risk of cost overruns, regulatory delays, and technical problems will not disappear overnight because of a new national energy policy. Utilities investing in nuclear power capacity could see credit erosion unless many risks are overcome.

Continuing the electricity deregulation, competition policies, and programs that were started in the 1990s will go a long way toward stabilizing the U.S. energy sector. The NEP proposal is right on target in this regard. But deregulation will face an uphill battle. California's disastrous experience with competition has caused many states to back-peddle, or even freeze. It would be unfortunate if this trend persists. Hopefully, the new energy policy can reverse the trend and provide certainty. Throughout the world, the introduction of competition, when done correctly, into previously state-owned, or cost-of-service-based industries, has successfully lowered prices to consumers. Investors and consumers should take comfort in the Administration's efforts to ensure that no other state implements a partial deregulation plan that could cause California's problems to spread.

In short, for the Bush-Cheney NEP to help the nation's energy and electricity industries go forward with deregulation policies already begun, it will need to do three things from the financial world's perspective:

- Provide a framework conducive to competition and reliability;
- Ensure price transparency in the markets; and
- Provide a consistent, supportive public policy that will give the industry and its investors confidence that the rules will not change.

The challenge will be to avoid promoting policies that seem to favor special interests, address short-term fixes that could be expensive in the long run, and unwind policies and programs already in place. However, as competition becomes more pervasive and monopoly structures disappear in the energy industry, credit quality may be at risk. Energy is inherently a risky business, but poorly regulated energy is even riskier (*Setting The Standard*, Standard & Poor's RatingsDirect, www.standardandpoors.com/ratingsdirect).

Electric Utilities

The NEP impacts the electric utilities directly. It is expected that their opinion will be specific to the needs of the industry. Edison Electric Institute (EEI) is a non-profit organization representing the utilities that also contributed their viewpoint to the NEP while it was in the formation stage. EEI feels that federal roadblocks still exist that hinder expansion of needed generation and transmission facilities. EEI wants to ensure that electricity remains affordable and reliable by working to expand electricity generation and transmission, which the NEP endorses in Chapter 7 with a desire for authority in both areas. Adequate, affordable, and reliable energy supplies are essential to the U.S. economy and our quality of life. EEI knows that we rely on energy sources to power our homes, offices, industries, medical services, transportation, and computer and Internet activities. As our energy needs grow, supply and demand imbalances are becoming more evident, raising the question of how energy supplies can be increased and infrastructure systems improved to meet current and future demands. EEI states that America needs a comprehensive national energy policy that uses modern technologies to increase energy efficiency and conservation; assures adequate energy supplies and generation; renews and expands the energy infrastructure; encourages investment in new energy technologies; provides energy assistance to low-income households; and assures appropriate consideration of the impacts of regulatory policies on energy. Two main interests of EEI are:

- Government must work immediately to repeal the Public Utility Holding Company Act (PUHCA)—It restricts the flow of capital and the ability of many companies to enter electricity markets and build generation, resulting in fewer competitors vying to serve consumers. PUHCA also is a barrier to forming regional independent transmission companies. These regional transmission organizations (RTOs) are expected to play a critical role in planning new transmission infrastructure in the future.
- Reform the Public Utility Regulatory Policies Act (PURPA)—It forces utilities to buy electricity that they may not need at above-market prices. This purchasing requirement results in billions of dollars of extra costs to consumers, and should be repealed, while ensuring utilities can recover their costs.

Both of these industry requests were met with the NEP in Chapter 5. The NEPD Group recommended that the President direct the Secretary of Energy to propose comprehensive electricity legislation that “promotes competition, protects consumers, enhances reliability, promotes renewable energy, improves efficiency, repeals the Public Utility Holding Company Act, and reforms the Public Utility Regulatory Policies Act.”

Therefore, it may be concluded that the electric utility industry has had its voice heard with the Bush-Cheney policy planning group. To show how aligned the EEI is with the NEP, the following quote demonstrates the lack of conflict with the layout of the NEP: “The data show that the health of our nation’s economy is closely linked to a robust supply of electricity. To keep our electricity affordable and reliable we must use a mix of fuels to generate electricity. Coal, natural gas, nuclear power, hydropower and other renewables should all be part of the mix,” says Thomas R. Kuhn, President, Edison Electric Institute, (5/17/01).

Bush Energy Plan Helps Industry, not Public

Headlines, regarding the effects of the NEP-inspired legislation, have been chosen for the heading of this section (Tom Doggett, Reuters News Service, 1/23/02). They give us a final perspective to summarize the analysis contained in this chapter, after the House of Representatives approved most of the measures in the NEP.

The Bush administration's energy plan will make the U.S. economy more dependent on oil and was designed to help Enron and oil companies, not the American public, stated Massachusetts Sen. John Kerry. A likely presidential candidate in 2004, he fired the opening salvo in what was expected to be a bitter, partisan fight over a national energy policy that is a legislative priority for both parties.

Republicans have endorsed a plan to boost oil supplies by drilling in the Arctic National Wildlife Refuge, while Democrats contend that more conservation measures and stricter fuel efficiency for gas-guzzling sport utility vehicles can accomplish the same goal without ravaging the wilderness. The Democrats are concerned that the White House has not offered an agenda for energy independence in the NEP but instead wants to help energy companies like Enron. The Houston-based firm Enron, which had close ties to several Bush administration officials, ranked as the world's biggest energy trader before it filed for bankruptcy.

"Old thinking passed through the (White House) doors of 1600 Pennsylvania Avenue far more often and easily than new thinking. Exxon Mobil, Enron, or Chevron enjoyed an access bonanza at the expense of consumers," Kerry said in a speech to the Center for National Policy (1/23/02).

In their version of an energy bill (S. 517), the Democrats prefer to keep the Arctic wildlife refuge closed and instead develop more renewable energy sources like wind and solar power and implement energy conservation measures. The refuge, which stretches for some 19 million acres on Alaska's northern coast, is home to polar bears, migratory birds, and other wildlife.

The Republican-led House in 2001 approved a broad energy bill (H.R. 4) that would give oil companies access to the Arctic refuge as well as more than \$33 billion in tax breaks and incentives. The Senate Finance Committee also approved billions in energy tax breaks and strengthened mileage requirements for vehicles.

Labor Unions Back Bush Plan

The Teamsters Union told President Bush it was close to getting the 60 Senate votes needed to add language to the energy bill opening the refuge and to block a threatened filibuster by Democrats. The Teamsters back drilling because of the high-paying union jobs it would create. Kerry is one of several Senate Democrats who have vowed to filibuster to death any bill allowing drilling in the refuge. Even if the Arctic refuge was opened to drilling, it would not be at full production for some 20 years. "Working families bear the brunt of inaction on the passage of a National Energy Plan. ...A strong, *supply-based energy bill* will strengthen our national security, provide a significant boost to our economy and put Americans back to work" says Jerry Hood Special Assistant for Energy Policy, International Brotherhood of Teamsters (9/27/01).

Government estimates say the refuge may hold up to 16 billion barrels of oil. The United States must import more than half the 20 million barrels of oil per day that it consumes. "Obviously we all agree that reducing our dependence on foreign oil, especially oil from the politically toxic Middle East, is a necessity," Kerry said. "But the American people want honesty about how you do it, not a false security blanket that promises something undeliverable in the short term and precious little amounting to real progress in the long term."

Bush, who has called for funding for ways to make coal a cleaner fuel, has promoted his energy plan in West Virginia, the heart of coal-mining country, among other places. "This nation needs an energy policy," Bush said. "Jobs depend on affordable energy. If there's (an energy) price spike or a disruption in supply, people may not have work...We're dependent on energy from some parts of the world, where sometimes they like us and sometimes they don't," Bush said.

However, his NEP does not relieve the U.S. of this unpredictable and undependable future that such a relationship creates.

Conclusion

If the entire Bush-Cheney energy plan was implemented, the United States by 2020 would be more dependent on foreign oil than it is now, according to many critics. Foreign oil accounts for 60 percent of U.S. petroleum consumed today. A better policy would be to increase mileage requirements for minivans and sport utility vehicles and reverse the rollback on air conditioner efficiencies, all of which would save millions of barrels of oil a year. A national energy policy should also develop more renewable energy like wind and solar and set a goal of having 20 percent of U.S. electricity from renewable sources by 2020. All of these afterthoughts are possible additions but the fact remains that the NEPD Group did not apparently think they were important. However, Congress has to devise a more environmentally sound NEP to satisfy the Democrats, "Because the truth of the matter is that a national energy plan can be a vital tool in the war against terrorism and is essential if the nation wants a future in which it is less vulnerable to the politics of the Middle East. ...Coming up with a comprehensive plan that uses all of the nation's tools won't be easy. But it has to be done, and the sooner it's done, the better." *Milwaukee Journal Sentinel*, Editorial (11/4/01).

In the areas analyzed: power plants, renewables, efficiency programs, autos, appliances, environment, corporate finance, R&D, CAFÉ, systems benefit trust, and tax incentives, the NEP comes up short in most areas or simply fails miserably. Comparing the NEP to the Clinton administration's CNES (Comprehensive National Energy Strategy), which this author also analyzed (*Energy Crisis*, IRI, 176 pages, 2000), at least the CNES succeed with new programs and effective policies in 33% of the areas that it proposed to change.

According to the Energy Foundation, the NEP is a plan based on "has-been" energy technologies that will more hamper than help the U.S. economy. Besides being insignificant, if the NEP-proposed ANWR production comes on line, OPEC can negate the benefit immediately by withdrawing an equal amount from the market, states Standard & Poor's. They also note that high prices force consumers to cut back on consumption. The Sustainable Energy Coalition had twelve specific criticisms of the NEP, along with several alternative possibilities. Greenpeace notes the DOE policies which exist that could significantly reduce inefficiencies, oil dependence, air pollution and greenhouse gas emissions at essentially no net cost to the US economy. Greenpeace also presented a top ten list for the NEP. The President of ACEEE summarizes many viewpoints by stating that the NEP plan fails to advance a complete set of policies needed to stimulate cost-effective efficiency improvements throughout the economy. EEI wants to ensure that electricity remains affordable and reliable by working to expand electricity generation and transmission.

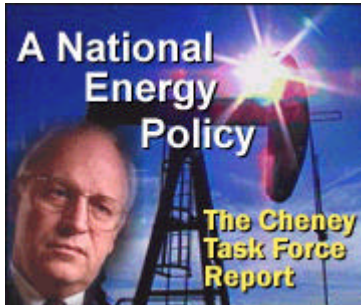
In conclusion, it is noted that only Republicans, labor unions and utility organizations seem to endorse the NEP. The rest, including this author, find serious deficiencies with the Bush-Cheney plan. With that assessment, the DOE offer a realistic viewpoint, even if it is only lip service:

"The evidence of serious threats to our energy security could not be more obvious. It is not always the case that we have the opportunity to make policy after considered reflection and thought. Beginning with development of the National Energy Plan in January, and continuing through the legislative process, we have done just that. We shouldn't wait for yet another reminder of the need to boost energy security. We should act now." (U.S. Secretary of Energy, Spencer Abraham, 11/8/01).

II. Can the National Energy Policy Sustain the United States?

Introduction

To answer the questions posed in this chapter, we first look at an overview of the 105 recommendations that the National Energy Policy makes, from the administration's perspective. The NEP cites a token role for new, environmentally friendly technologies and calls for the Secretary of Energy to conduct a review of renewable and alternative energy in Chapter 6. In other words, the NEP wants one more study rather than taking



decisive action. The Bush-Cheney NEP Report does emphasize that America faces the most serious energy shortage since the oil embargoes of the 1970s and calls for greater energy efficiency, a modernized energy infrastructure, and increased energy supplies in general. The new National Energy Policy is a “long-term, comprehensive strategy that will advance new, environmentally friendly technologies to increase energy supplies and encourage cleaner, more efficient energy use.”

While mentioning that the United States has made impressive gains in energy efficiency (the U.S. economy has grown by 126 percent since 1973, while energy use has increased by only 30 percent) the NEP calls for further improvements in the productive and efficient use of energy. The report recommends, for example, that federal agencies take actions to conserve energy use in their facilities, and increase funding for renewable energy and energy efficiency research and development programs. The NEP also recommends that the nation's network of generating facilities, transmission lines, pipelines and refineries be modernized and expanded to ensure that energy supplies can be reliably and affordably transported to homes and businesses but without indicating how FERC (see Section I.) can do it. The report calls for increasing U.S. energy supplies, emphasizing that enormous advances in technology have made oil and gas exploration and production more efficient and environmentally sound, and that research in clean coal technologies may increase the attractiveness of coal as a source for new power plants. The NEP recommends opening a “small fraction” of the Arctic National Wildlife Refuge to environmentally regulated exploration and production using leading-edge technology. The report also recommends increased use of nuclear power, noting that nuclear facilities currently generate 20 percent of all electricity in America, but that the number of nuclear plants is projected to decline in coming years. To ensure energy security and to lessen the impact of energy price volatility and supply uncertainty on Americans, the report says the United States must look beyond its borders and restore America's credibility with overseas suppliers. For example, it recommends support for a North American Energy Framework to expand and accelerate cross-border energy investment, oil and gas pipelines, and electricity grid connections by expediting permitting procedures with Mexico and Canada.

Overview of the National Energy Policy

“Reliable, Affordable, and Environmentally Sound Energy for America's Future” is the advertising bannerhead for the NEP. However, recognizing that a fundamental imbalance between supply and demand defines our nation's energy crisis and our increasing dependence on foreign oil, the administration uses only wishful thinking to

address the crisis. If energy production increases at the same rate as during the last decade our projected energy needs will far outstrip expected levels of production. This imbalance, if allowed to continue, will inevitably undermine our economy, our standard of living, and our national security. It is not beyond our power to correct. America leads the world in scientific achievement, technical skill, and entrepreneurial drive. Within our country are abundant natural resources, unrivaled technology, and unlimited human creativity. With forward-looking leadership and sensible policies, we can meet our future energy demands and promote energy conservation, and do so in environmentally responsible ways that set a standard for the world.

The NEP stresses three major areas by stating, "America has the technological know-how and environmentally sound 21st century technologies needed to meet the principal energy challenges we face. Meeting each of these challenges is critical to expanding our economy: **A)** promoting energy conservation, **B)** repairing and modernizing our energy infrastructure, and **C)** increasing our energy supplies in ways that protect and improve the environment."

A) We are already working to meet the first challenge: using energy more wisely. The NEP notes that dramatic technological advances in energy efficiency have enabled us to make great strides in conservation, from the operation of farms and factories to the construction of buildings and automobiles. New technology allows us to go about our lives and work with less cost, less effort, and less burden on the natural environment. While such advances cannot alone solve America's energy problems, they can and will continue to play an important role in our energy future. However, this increased efficient use of energy, with diminishing returns over time, has already happened without the NEP. Furthermore, the NEP does not offer an action plan nor incentive for the public but simply recommends increased R&D budgets for government agencies like the DOE and the EPA.

The NEP wants to increase energy efficiency by applying new technology -- raising productivity, reducing waste, and trimming costs. In addition, the Bush-Cheney team says they hold out great hope for improving the quality of the environment, with American families, communities, and businesses all depend upon reliable and affordable energy services for their well-being and safety. With a smile and the American flag in the background, we read that "from transportation to communication, from air conditioning to lighting, energy is critical to nearly everything we do in life and work. Public policy can and should encourage energy conservation."

It is true that over the past three decades, America has made impressive gains in energy efficiency. Today's automobiles, for example, use about 60 percent of the gasoline they did in 1972, while new refrigerators require just one-third the electricity they did 30 years ago. As a result, since 1973, the U. S. economy has grown by 126 percent, while energy use has increased by only 30 percent. In the 1990s alone, manufacturing output expanded by 41 percent, while industrial electricity consumption grew by only 11 percent. However, it is unreasonable to expect that the U.S. can build on this progress and somehow strengthen America's commitment to energy efficiency and conservation. The National Energy Policy builds on our nation's successful track record and promotes further improvements in the productive and efficient use of energy.

The NEP includes recommendations to:

- Direct federal agencies to take appropriate actions to responsibly conserve energy use at their facilities, especially during periods of peak demand in regions where electricity shortages are possible, and to report to the President on actions taken!

- Increased funding is recommended for renewable energy and energy efficiency research and development programs that are performance-based and cost-shared.
- Create an income tax credit for the purchase of hybrid and fuel cell vehicles to promote fuel-efficient vehicles. Extend the Department of Energy's "Energy Star" efficiency program to include schools, retail buildings, health care facilities, and homes and extend the "Energy Star" labeling program to additional products and appliances.
- Fund the federal government's Intelligent Transportation Systems program, the fuel cell powered transit bus program, and the Clean Buses program.
- Provide a tax incentive and streamline permitting to accelerate the development of clean Combined Heat and Power technology.
- Direct the Secretary of Transportation to review and provide recommendations on establishing Corporate Average Fuel Economy (CAFE) standards with due consideration to the National Academy of Sciences study of CAFE standards.

B) The second challenge addressed by the NEP is to repair and expand our energy infrastructure. Our current, outdated network of electric generators, transmission lines, pipelines, and refineries that convert raw materials into usable fuel has been allowed to deteriorate. Oil pipelines and refining capacity are in need of repair and expansion. Not a single major oil refinery has been built in the United States in nearly a generation, causing the kind of bottlenecks that lead to sudden spikes in the price of gasoline. Natural gas distribution, likewise, is hindered by an aging and inadequate network of pipelines. To match supply and demand will require some 38,000 miles of new gas pipelines, along with 255,000 miles of distribution lines (ref. DOE/EIA). Similarly, an antiquated and inadequate transmission grid prevents us from routing electricity over long distances, thereby avoiding regional blackouts, such as California's. However, the NEP does not provide any realistic plan for FERC (see Section I) to change existing laws that prohibit pipelines and transmission lines from obtaining the necessary rights-of-way.

We realize that the energy we use passes through a vast nationwide network of generating facilities, transmission lines, pipelines, and refineries that converts raw resources into usable fuel and power. That system is deteriorating, and is now strained to capacity. One reason for this is government regulation, often excessive and redundant. Regulation is needed in such a complex field, but it has become overly burdensome. Regulatory hurdles, delays in issuing permits, and economic uncertainty are limiting investment in new facilities, making our energy markets more vulnerable to transmission bottlenecks, price spikes and supply disruptions. The NEP emphasizes that America needs more environmentally sound energy projects to connect supply sources to growing markets and to deliver energy to homes and business. It states that, "To reduce the incidence of electricity blackouts, we must greatly enhance our ability to transmit electric power between geographic regions, that is, sending power to where it is needed from where it is produced." Most of America's transmission lines, substations, and transformers were built when utilities were tightly regulated and provided service only within their assigned regions. The system is simply unequipped for large-scale swapping of power in the highly competitive market of the 21st century. We are led to believe that "the National Energy Policy will modernize and expand our energy infrastructure in order to ensure that energy supplies can be safely, reliably, and affordably transported to homes and businesses."

The NEP includes recommendations to:

- Direct agencies to improve pipeline safety and expedite pipeline permitting.
- Issue an Executive Order directing federal agencies to expedite permits and coordinate federal, state, and local actions necessary for energy-related project approvals on a national basis in an environmentally sound manner, and establish an interagency task force chaired by the Council on Environmental Quality. The task force will ensure that federal agencies set up appropriate mechanisms to coordinate federal, state and local permitting activity in particular regions where increased activity is expected.
- Grant authority to obtain rights-of-way for electricity transmission lines with the goal of creating a reliable national transmission grid. Similar authority already exists for natural gas pipelines and highways. (Most states and environmentalists are concerned about this forceful language.)
- Enact comprehensive electricity legislation that promotes competition, encourages new generation, protects consumers, enhances reliability, and promotes renewable energy.
- Implement administrative and regulatory changes to improve the reliability of the interstate transmission system and enact legislation to provide for enforcement of electricity reliability standards.
- Expand the Energy Department's research and development on transmission reliability and superconductivity.

C) The third challenge is, increasing energy supplies while protecting the environment. Even with successful conservation efforts, America will need more sources of energy. Renewable and alternative fuels offer hope for America's energy future. However, the Bush-Cheney group believes in their NEP Overview,



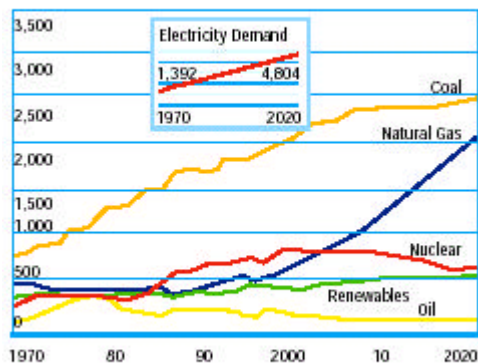
“They (renewables) supply only a small fraction of present energy needs. The day they fulfill the bulk of our needs is still years away. Until that day comes, we must continue meeting the nation's energy requirements by the means available to us. Extraordinary advances in technology have transformed energy exploration and production. On our present course, America 20 years from now will import nearly two of every three barrels of oil -- a condition of increased dependency on foreign powers that do not always have America's interests at heart.

Our increasing demand for natural gas -- one of the cleanest forms of energy -- far exceeds the current rate of production. We should reconsider any regulatory restrictions that do not take technological advances into account. We have a similar opportunity to increase our supplies of electricity. To meet projected demand over the next two decades, America must have in place between 1,300 and 1,900 new electric plants. Much of this new generation will be fueled by natural gas. However, existing and new technologies offer us the opportunity to expand nuclear generation as well. Nuclear power today accounts for 20 percent of our country's electricity. This power source, which causes no greenhouse gas emissions, can play an expanding part in our energy future. The recommendations of this report address the energy challenges facing America. Taken together, they offer the thorough and responsible energy plan our nation has long needed.”

A primary goal of the National Energy Policy is to add supply from diverse sources. This means domestic oil, gas, and coal. It also means hydropower and nuclear power while making greater use of non-hydro renewable sources now available. One aspect of the present crisis is an increased dependence, not only on foreign oil, but on a narrow range of energy options. For example, about 90 percent of all new electricity plants currently under construction will be fueled by natural gas. While natural gas has many advantages, an over-reliance on any one fuel source leaves consumers vulnerable to price spikes and supply disruptions. There are several other fuel sources available that can help meet our needs. Currently, the U. S. has enough coal to last for another 250 years. Yet very few coal-powered electric plants are now under construction. Research into clean coal technologies may increase the attractiveness of coal as a source for new generation plants. Nuclear power plants serve millions of American homes and businesses, have a dependable record for safety and efficiency, and discharge no greenhouse gases into the atmosphere. As noted earlier, these facilities currently generate 20 percent of all electricity in America, and more than 40 percent of electricity generated in 10 states in the Northeast, South, and Midwest. Other nations, such as Japan and France, generate a much higher percentage of their electricity from nuclear power. Yet the number of nuclear plants in America is actually projected to decline in

Electricity Generation by Fuel: Current Trends

(Billions of Kilowatt-Hours)



Source: U.S. Department of Energy, Energy Information Administration

coming years, as old plants close and none are built to replace them.

Enormous advances in technology have made, the NEP stresses, in oil and natural gas exploration and production, making it more efficient and more environmentally sound. Better technology means fewer rigs, more accurate drilling, greater resource recovery and environmentally friendly exploration. Drilling pads are 80 percent smaller than a generation ago. High-tech drilling allows us to access supplies five to six miles away from a single compact drilling site, leaving sensitive wetlands and wildlife habitats undisturbed. Yet the fault, we are led to believe by the NEP, is that current regulatory structure fails to take sufficient

account of these extraordinary advances, excessively restricting the environmentally safe production of energy from many known sources. The NEP wants to increase “and diversify” our nation's sources of traditional and alternative fuels in order to furnish families and businesses with reliable and affordable energy, to enhance national security, and to improve the environment. The NEP report includes recommendations to:

- Issue an Executive Order directing all federal agencies to include in any regulatory action that could significantly and adversely affect energy supplies a detailed statement on the energy impact of the proposed action.
- Open a small fraction of the Arctic National Wildlife Refuge to environmentally regulated exploration and production using leading-edge technology.
- Examine the potential for the regulated increase in oil and natural gas development on other federal lands.

- Earmark \$1.2 billion of bid bonuses from the environmentally responsible leasing of ANWR to fund research into alternative and renewable energy resources including wind, solar, biomass, and geo-thermal.
- Enact legislation to expand existing alternative fuels tax incentives to include landfills that capture methane gas emissions for electricity generation and to electricity produced from wind and biomass.
- Extend the number of eligible biomass sources to include forest-related sources, agricultural sources, and certain urban sources.
- Provide \$2 billion over 10 years to fund clean coal technology research and a new credit for electricity produced from biomass co-fired with coal.
- Direct federal agencies to streamline the hydropower relicensing process with proper regard given to environmental factors.
- Provide for the safe expansion of nuclear energy by establishing a national repository for nuclear waste, and by streamlining the licensing of nuclear power plants.

Regarding the environment, we see a token gesture that gives glowing language to the job for the EPA, already weakened under the Bush administration.

“America's commitment to environmental protection runs deep. We are all aware of past excesses in our use of the natural world and its resources. No one wishes to see them repeated. In the 21st century, the ethic of good stewardship is well-established in American life and law. We do not accept the false choice between environmental protection and energy production. An integrated approach to policy can yield a cleaner environment, a stronger economy, and a sufficient supply of energy for our future. The primary reason for that has been steady advances in the technology of locating, producing, and using energy.

Since 1970, emissions of key air emissions are down 31 percent. Cars today emit 85 percent less carbon monoxide than 30 years ago. Lead emissions are down 90 percent. Lead levels in ambient air today are 98 percent lower than they were in 1970. America is using more but it is simply not true that it is “polluting less.” One of the factors harming the environment today is the very lack of a comprehensive, long-term national energy policy. The last administration’s Comprehensive National Energy Strategy was a serious attempt that stimulated significant legislation in many areas. States confronting blackouts will probably have to take desperate measures, often at the expense of environmental standards, requesting waivers of environmental rules, and delaying the implementation of anti-pollution efforts. Shortfalls in electricity generating capacity and short-sighted policies consistently block construction of new, cleaner plants, leaving no choice but to rely on older, inefficient plants to meet demand. The increased use of emergency power sources, such as diesel generators, results in greater air pollution. New anti-pollution technologies hold great promise for the environment. The same can be said of 21st century power generators that must soon replace older models. However, it does not require federal funds to “continue research into renewable energy sources.” They have already been invented!

Regarding environmental concerns, the NEP report includes recommendations to:

- Enact "multi-pollutant" legislation to establish a flexible, market-based program to significantly reduce and cap emissions of sulfur dioxide, nitrogen oxides, and mercury from electric power generators.

- Increase exports of environmentally friendly, market-ready U. S. technologies that generate a clean environment and increase energy efficiency.
- Establish a new "Royalties Conservation Fund" and earmark royalties from new, clean oil and gas exploration in ANWR to fund land conservation efforts.
- Implement new guidelines to reduce truck idling emissions at truck stops.

The National Energy Policy presents its worst case in the area of "energy security." This section shows the administration's contradictory intentions by admitting to energy price volatility and supply uncertainty but then suggesting security is possible. Such awareness of uncertainty and divided loyalties increase as *Time* magazine indicates that, "Dick Cheney has taken a hard line against the General Accounting Office, refusing its efforts to get information on meetings held by his energy task force....A lot of the new confusion seemed to stem from Vice President Dick Cheney's energy task force, which is destined to become better known for the controversy it spawned than the report it issued," reported on February 11, 2002. Energy security must be a priority of U. S. trade and foreign policy, according to the NEP. "***We must look beyond our borders and restore America's credibility with overseas suppliers.*** In addition, we must build strong relationships with energy-producing nations in our own hemisphere, improving the outlook for trade, investment, and reliable supplies." This language only implies strong-arm tactics that have already caused more than one war over oil. Energy security, says the NEP, also requires preparing our nation for supply emergencies, and assisting low-income Americans who are most vulnerable in times of supply disruption, price spikes, and extreme weather. To ensure energy security for our nation and its families, the NEP makes these last few recommendations:

- Dedicate new funds to the Low Income Home Energy Assistance Program by funneling a portion of oil and gas royalty payments to LIHEAP when oil and natural gas prices exceed a certain amount.
- Double funding for the Department of Energy's Weatherization Assistance Program, increasing funding by \$1.4 billion over 10 years.
- Direct the Federal Emergency Management Administration (FEMA) to prepare for potential energy-related emergencies.
- Support a North American Energy Framework to expand and accelerate cross-border energy investment, oil and gas pipelines, and electricity grid connections by streamlining and expediting permitting procedures with Mexico and Canada.
- Direct federal agencies to expedite necessary permits for a gas pipeline route from Alaska to the lower 48 states.

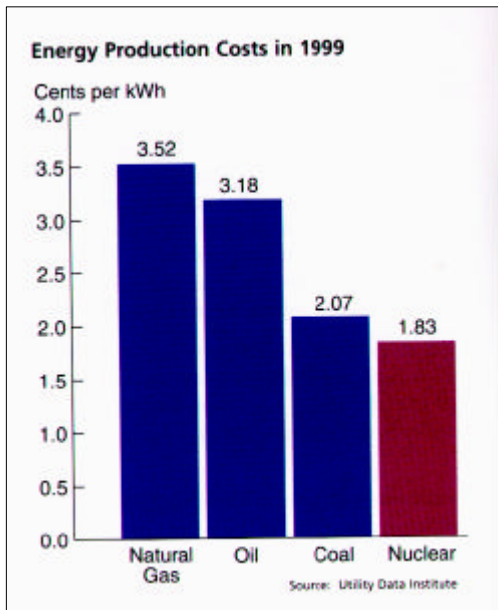
The rallying cry for the NEP overview is the conclusion that,

"The President's goal of reliable, affordable, and environmentally sound energy supplies will not be reached overnight. It will call forth innovations in science, research, and engineering. It will require time and the best efforts of leaders in both political parties. It will require also that we deal with the facts as they are, meeting serious problems in a serious way. The complacency of the past decade must now give way to swift but well-considered action. Present trends are not encouraging, but they are not immutable. They are among today's most urgent challenges, and well within our power to overcome. Our country has met many great tests. Some have imposed extreme hardship and sacrifice. Others have demanded only resolve, ingenuity, and clarity of purpose. Such is the case with

energy today. We submit these recommendations with optimism. We believe that the tasks ahead, while great, are achievable. The energy crisis is a call to put to good use the resources around us, and the talents within us. It summons the best of America, and offers the best of rewards -- in new jobs, a healthier environment, a stronger economy, and a brighter future for our people." (ref. www.usinfo.state.gov)

Can the Bush-Cheney Energy Policy Meet Current Needs?

The NEP urges action to meet five specific national goals. America must modernize conservation, modernize our energy infrastructure, increase energy supplies, accelerate the protection and improvement of the environment, and increase our nation's energy security. These are laudable goals of course, but the process for implementation, as we saw in Section I, is severely lacking.

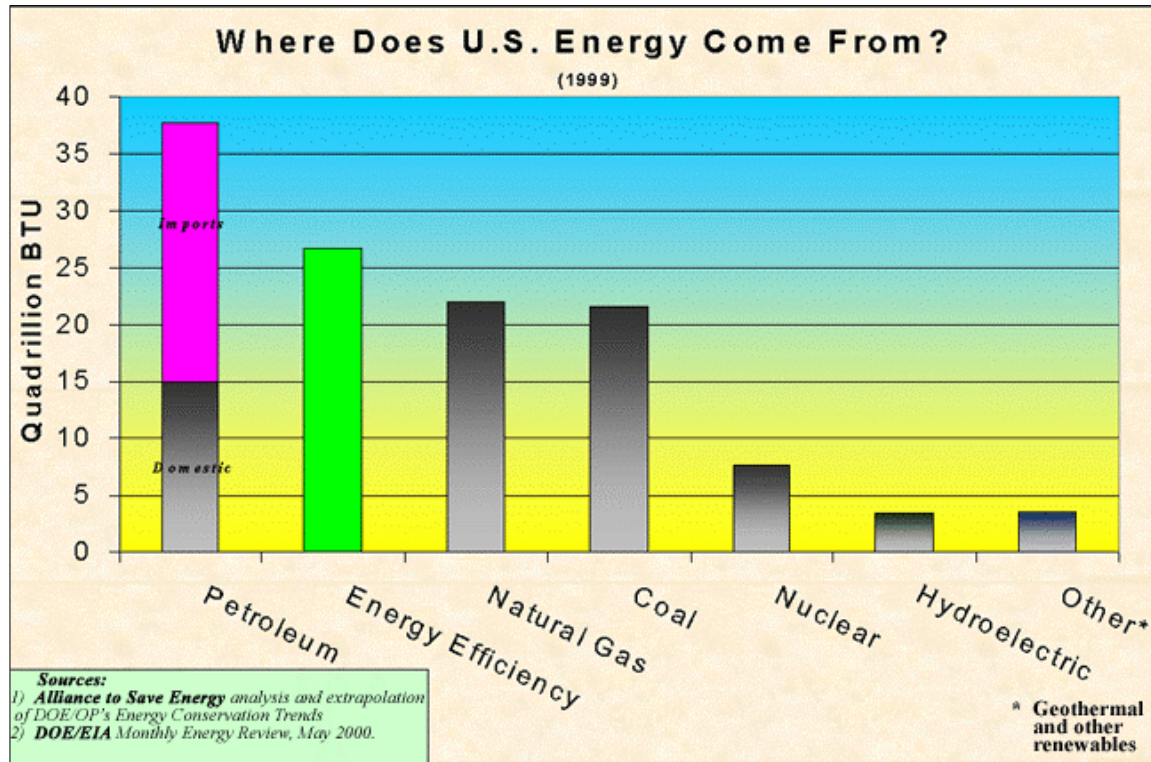


Last spring, a brief energy crisis captured the headlines. The epicenter was in California, where residents braced for a summer of blackouts, and politicians struggled to stave off disaster. While the rest of the country didn't have to fear lights going out, it saw a surge in gasoline and natural-gas prices. President Bush seized the moment to push for a vast energy plan intended to save the day with more production, more alternative fuels, more research, modest conservation and lots more spending. "We don't want the blackouts of California to extend their reach nationwide," he told an Iowa audience, urging quick action.

Then about a year later, the House of Representatives passed Bush's plan, including a controversial expansion of oil drilling in the Arctic National Wildlife Refuge. However, the

Senate began debating an alternative bill months later. Despite the lack of legislative solutions, the market worked, as we saw suggested in Section I, "Financial." High prices and threatened blackouts prompted consumers to use less power, especially in some parts of the West Coast, where consumption declined by more than 25%. At the same time, higher prices spurred energy companies to speed up plans for building new electric plants. Bush, meanwhile, persuaded Russia, a major oil producer, not to reduce its oil production in lock step with OPEC, a move that helped prices fall. Consequently, the cost of filling a car with gas has tumbled 35% since May, 2001. The price of heating a home has fallen by 40%. Until the world economy revives, the prospect of new price spikes is not high, at least not spikes caused by world energy supplies. This administrative process has caused a false sense of security that hides the real problem. It therefore has made current needs easy to fulfill at the cost of future needs. Senate Democrats however devised a \$16-billion package of proposals skewed toward conservation and alternative energy. Bush, in his weekly radio address and in speeches, demands that the Senate move on something closer to his more production-oriented priorities.

Today's cheap gasoline doesn't mean the nation's energy problems have been solved. Both Senate and House plans, which have accepted the NEP as a template, depend on failed solutions without making the hard choices needed to face future challenges. Both



energy plans insist that Americans "free ourselves from our dependence upon foreign oil and the volatility associated with it," as Senate Majority Leader Tom Daschle, D-S.D. has stated. However, neither plan sets a timetable or devotes sufficient resources to meet that goal. The only step that could wean the U.S. from dependence on oil -- and vulnerability to the chaos in the Middle East -- is the replacement of the internal combustion engine, something neither plan seriously addresses and science has yet to achieve.

Other proposals now before the Senate would worsen existing problems, says *USA Today*, March 5, 2002. Among them:

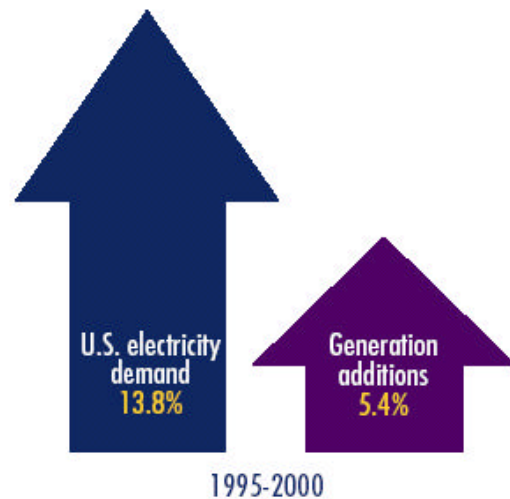
- Tripling the use of ethanol by 2012. While it wins votes from farmers, mostly corn-based ethanol requires massive subsidies to be competitive. Worse, corn-based fuels can worsen some environmental problems.
- Toughening fuel-efficiency standards for cars and trucks. If implemented perfectly, proposals would save vast amounts of oil and lower U.S. demand. But regulatory schemes never work perfectly. Even the environmentalist Natural Resources Defense Council admits the proposal would add thousands to new-car costs, driving people to keep the oldest, most polluting cars on the road longer. At the same time, past efforts at fuel efficiency have made cars less safe by making them lighter.
- Increasing subsidies for production and consumption of energy. What is the largest item on the list? A \$10-billion subsidized loan for a new pipeline from Alaska to the lower 48 states. As long as federal policy is to subsidize energy so that consumers think electricity and gasoline are cheaper than they are, consumption will grow.

Last spring's energy crisis solved itself without help from Washington. That's not to say the government has no role in deciding the nation's energy policy. But it should be one focused on moving the U.S. economy away from the internal combustion engine and the oil that cars and sport-utility vehicles consume.

So far, the government has avoided making meaningful moves in that direction. Even Bush's highly touted plan to develop a car operated by a fuel cell would receive such paltry funding that it could take another decade before the car would be marketed. Unless Congress addresses the real problems lurking in America's future, no short-term fixes will stave off future energy crises.

Generation Additions are Not Keeping Pace with Demand.

- Between 1995 and 2000, U.S. electric demand increased by 13.8 percent, while total electric generation additions rose only 5.4 percent.*
- New demands for electricity will offset dramatic gains in energy efficiency. And new generation must be built to meet demand.
- Provisions for enhanced accelerated depreciation to encourage investment in new generation facilities are needed now.
- And transparent pricing for ultimate electricity consumers should be allowed to make competitive markets more efficient.



Sources: Energy Information Administration and EIA Statistical Yearbook

Legislative Comparison

President Bush's ambitious, pro-industry energy plan is a legislative and regulatory mess. This was to be a major achievement of his political agenda, along with huge tax cuts, partial privatization of Medicare, education reform and expanded military spending. It is no secret that the president and Vice President Dick Cheney, who have longstanding ties to the oil industry, want to increase oil and gas production in areas previously off-limits and build new refineries and plants for nuclear power. Despite their background, or perhaps because of it, the issue has been mishandled from the beginning. A set of recommendations issued in May by a secretive task force that Cheney headed was immediately denounced as cravenly bowing to self-serving demands from oil, gas and nuclear lobbyists. Initially, conservation was not even mentioned.

Environmentalists complained bitterly about the new policy and were backed by a bigger constituency than the White House had anticipated. The opposition forced the administration to add a few half-hearted provisions to encourage conservation and renewable energy. However, opponents' fears were justified when the president reversed his campaign pledge to limit carbon dioxide emissions. The vice president's

irrational refusal to make public the names of his task force members has turned into a major distraction, generating an unnecessary confrontation between the White House and Congress. Evidence mounts that power industry lobbyists who contributed heavily to Republican campaigns indeed had virtually exclusive access to Cheney and other officials involved in shaping the energy policy. Input from consumer and environmental groups was negligible and largely ignored.

The Bush administration energy policy begins to look suspiciously like a political sequel to the disaster that Hillary Clinton's failed health care reform became in 1993 and 1994. Congress has not yet passed judgment on Bush's shift toward accelerating oil and gas exploration at any cost, particularly his desire to drill in Alaska's Arctic National Wildlife Reserve. But the plan is in trouble. The GOP-controlled House in August passed an energy bill that closely followed the Cheney recommendations, including drilling in ANWR (Marianne Means, *April 2, 2002, Seattle Post-Intelligencer*).

Hillary Clinton's sweeping health care overhaul died in part because of a controversy over the secrecy in which the proposals were developed -- much like that over Cheney's task force. It also collapsed because it would have radically changed the status quo, just as the Bush plan would. It did not reconcile the inherent differences among financial interests of millions of people with a vital stake in the outcome. The former first lady simply could not satisfy everybody -- doctors, insurance companies, managed care providers, hospitals and patients.

The administration failed to recognize the mounting opposition to the health care plan because the Clintons themselves were so convinced of the righteousness of their cause. Just as Bush and Cheney are, the Clintons became deeply, personally involved -- a complication that often interferes with good judgment. They dismissed their critics with broad, arrogant talk of "fairness" rather than providing specific answers to complicated questions. The Bush administration is doing much the same. Officials argue that the industry requires a greater priority in the name of "national security." But that vague contention will not satisfy those who fear the destruction of an irreplaceable environment.

The recent release of court-ordered documents by the Energy Department and other agencies demonstrates the extensive role played by industry officials in drafting the new policy. The documents were heavily edited to conceal most substantive content, but they still revealed a consistent bureaucratic bias toward position papers submitted by industry groups. The failure of the Clinton health care reform was politically embarrassing for the White House, but the republic did not fall.

As Congress balks at the Bush energy plan, the country will have more time to consider the wisdom of *blindly promoting the oil industry*. Leaving the issue on the unresolved national agenda for a while longer might be a good idea. After Hillary Clinton's testimony on behalf of health care reform, then-House Minority Whip Dick Armey told her, "The reports on your charm are overstated and the reports on your wit are understated." Something similar might be said about Bush and Cheney and their advocacy of the energy industry's wish list. Their claims of having a balanced policy are overstated, and their concerns for the environment are understated.

The House Bill H.R. 4 is a Republican-led improvement over the Bush-Cheney NEP that has industrial support. The steel industry, for example, is highly energy-intensive. Its aggregated average energy consumption of approximately 19 million BTUs per ton of steel shipped represents 2-3% of the energy consumed in the U.S. and over 10% of that used by the industrial sector. Thus, the availability, reliability, and costs of energy are of

vital importance to the industry. The CEO of the American Iron and Steel Institute has decided that H.R. 4 is the best comprehensive bill for energy needs of the industry (ref. www.steel.org).

The early skirmishing over energy legislation in Congress provides a striking example of the right and wrong approach to meeting these goals. The H.R. 4 bill passed by the House focuses chiefly on measures aimed at increasing supply with a collection of budget-busting tax and spending incentives while falling short of the mark on measures to improve energy efficiency, especially in transportation. Left behind were important measures to modernize energy markets, improve the nation's electrical grid, ensure cost-effective progress toward emissions reductions, or, in the transportation sector, get greater fuel efficiency from automobiles.

The Senate Bill (S. 517) is a more ambitious environmentally conscious piece of legislation, even called "holistic" by one reviewer, that still has been watered down by special interest senators from its lofty origins. The Senate energy bill began, under Senator Daschle's leadership, as a promising vehicle for meeting our nation's energy needs, cutting oil dependence, diversifying our energy portfolio, saving consumers money and otherwise forging a path to a clean energy future. It contained important provisions to boost fuel economy standards, address global warming, improve energy efficiency and increase the use of renewable energy sources. As it stands today, the bill has been weakened by a series of amendments supported by industries that stand in the way of technology and progress. Several Senators and their industry allies are crafting additional amendments to make the bill even worse. In its current form, the Senate energy bill fails to reduce our dependence on imported oil, fails to significantly increase our nation's overall energy security, fails to protect electricity consumers, and fails to safeguard our environment.

At a minimum, the Senate energy legislation should adhere to the following core principles:

- Reduce consumption of oil by at least one million barrels a day by 2013;
- Protect the Arctic National Wildlife Refuge, roadless areas in our public lands, and other wild places from oil and gas development;
- Guarantee that at least 10 percent of our electricity supplies come from new, clean renewable energy resources by 2020;
- Cut taxpayer-funded handouts to dirty energy industries;
- Decrease pollution to our air, land and water; and
- Provide a reliable electricity system with adequate consumer protections that will save consumers money and increase energy efficiency.

The Senate Bill S. 517 however, does not meet those minimum, basic standards. The Senate energy bill is therefore also not sustainable for the nation in its current form. A forward-thinking energy policy should advance America's energy security by curtailing our dependence on dirty and unreliable energy sources, tapping into our vast potential for clean renewable energy, and dramatically increasing energy efficiency. (ref. USPIRG, <http://newenergyfuture.com>)

The table below shows the key comparisons between the NEP, House and Senate bills.

Legislative Comparison by Alliance to Save Energy www.ase.org

House Energy Bill H.R. 4	Senate Energy Bill S. 517	Bush-Cheney NEP
Up to \$2,000 per <u>existing home</u> representing 20 percent of the costs of reducing heating and cooling costs by 30%, or qualifying envelope components available for 5 years	Up to \$300 credit per <u>existing home</u> as 10% of the cost for a 30% reduction in heating & cooling costs or qualifying envelope components; available for 3 years	None
Up to \$2000 credit per <u>new home</u> for contractors who build a home 30% more efficient than the 1998 International Energy Conservation Code	Up to \$1,250/\$2,000 credit per <u>new home</u> for contractors who exceed the 2000 International Energy Conservation Code by 30%/50% respectively	None
\$2.25/sq ft deduction for 50% reduction in energy costs for <u>commercial buildings</u> .	\$2.25/sq ft deduction for 50% reduction in energy costs for <u>commercial buildings</u> .	None
Up to \$30 million credit for highly efficient <u>appliances</u> like washers and refrigerators	Up to \$30 million credit for highly efficient <u>appliances</u> like washers, refrigerators, air conditioners, heat pumps, and water heaters	None
Credit for fuel cell, hybrid, and electric <u>vehicles</u>	Credit for fuel cell, hybrid, and electric <u>vehicles</u>	Tax credits for fuel-efficient <u>vehicles</u> . Temporary income tax credit for certain hybrid and fuel cell vehicles
Credit for 60, 70% inc. efficiency coupled with an increase in depreciation period for <u>combined heat and power (CHP)</u>	Credit for 60, 70% inc. in efficiency coupled with an increase in depreciation period for <u>CHP</u> .	Increase <u>CHP</u> by shortening the depreciation life for CHP projects or providing an investment tax credit
Credit for residential and business fuel cell <u>powerplants</u> , each capped at \$1,000/kW of capacity	Credit for residential and business fuel cell <u>powerplants</u> , each also capped at \$1,000/kW of capacity	Including heat pumps and central air conditioning.
Total Est. Revenue Effect: \$34 billion over ten years with \$5.4 billion for energy conservation and efficiency	Total Est. Revenue Effect: \$14.5 billion over ten years with roughly \$3 billion for energy conservation and efficiency.	Total Est. Revenue Effect: \$4.2 billion over ten years for the CHP and vehicle incentives, according to the Bush FY03 budget

Will the National Energy Policy Meet Future Needs?

This may be the most important question of this Section II. Americans are known to be able to tolerate harsh conditions if they know the future will be brighter as a result. However, with the NEP, we are being handed just the opposite: a temporary illusion of present sufficiency without any vision, goals, milestones, or answers to satisfy our future needs. It was a plan conceived in secret behind closed doors, rather than with open hearings across the nation, as previous administrations had done. Furthermore, the records from the NEP preparation have required a court order to find the light of day.

The Bush-Cheney NEP says we need to drill for oil and gas on America's public lands, build 1,900 new power plants and increase our reliance on nuclear power. Where would the administration put all these plants? One of the ways to see how absurd this becomes is to look at the square miles within the U.S., as a map that more than one environmental group has examined. Taking the total number of square miles in the U.S. at 3,536,000 sq. mi. for dry land (*TIME Almanac 2000*) and dividing by 1900, to

implement the NEP, **we find that every 1861 square mile segment of America must have a power plant.** The square root of 1861 yields 43 miles by 43 miles. This means that with the NEP implemented uniformly over the United States, wherever a person would drive anywhere in the U.S., he would see a power plant *every 43 miles throughout the whole country, just to produce 6 trillion kWh by 2020* (see p. 123). It basically amounts to a "Polka-Dot Power Plant America" that equates to dispersed generation. Of course, metropolitan areas would see even a greater density of such generation plants, while rural areas would require less. At this time, there is no federal nor municipal legislation in place that would allow such an aggressive construction schedule (two per week) to proceed, much less for twenty years! This failure of the NEP team to recognize the well-known barriers that prohibit the implementation of the basic requirements of the NEP means that it cannot meet our future needs.

Instead, an amazing Department of Energy study shows that we can avoid the need for approximately 610 of the new power plants with energy-efficiency measures and avoid another 180 plants by using renewable energy. We could also meet remaining demand by replacing old, dirty coal-fired power plants with new, cleaner, high-efficiency natural gas plants. The NEP plan calls for an expansion of nuclear power. However, at this time, there is no safe way to store the dangerous radioactive waste from existing nuclear plants, and nuclear energy could only be expanded with huge federal subsidies. We could instead invest those monies in wind, solar, geothermal and other renewable technologies that can help meet our energy needs and protect the environment.

The Bush-Cheney plan has a "dig, drill and destroy" approach to energy policy to address energy needs. Wildlands from the remote coastal plain of the Arctic National Wildlife Refuge to the waters off the California shore could be threatened by oil spills and the inevitable degradation that large-scale operations cause. In addition, neighborhoods all across the United States would be at risk of increased air pollution and resulting health problems from new power plants. Multinational oil companies already have access to the bulk of public lands in the West - 95 percent of lands managed by the Bureau of Land Management in the Rocky Mountain West are available for oil and gas leasing. Yet the NEP would target for industrial development the few remaining pristine wild areas of the West, as well as fragile coastal waters currently protected from industrial development. The NEP focuses on the wrong choices - to produce more coal, oil, gas, and nuclear power - with insufficient emphasis on energy efficiency and cleaner alternatives. We have a multitude of energy choices at our disposal, but unfortunately the Bush-Cheney plan is focusing on those that harm our public health and environment. Some of the glaring misjudgments of the NEP, directly affecting our future, are:

- Clean coal - President Bush regularly refers to "Clean Coal", but this phrase is an oxymoron. In reality, coal is one of the most damaging forms of energy production, polluting our air and water, harming public health, and releasing global warming gases. For example, coal-fired power plants released more than one billion pounds of toxic pollution in 1998. "Clean-coal technology" will do almost nothing to stop this pollution.
- Nuclear power - President Bush calls for increased nuclear power, but nuclear waste is the most dangerous material produced by humans. Neither the US nor any other country has developed a safe way to dispose of it and we have learned that an accident at a nuclear reactor or during transportation of nuclear waste can be deadly. Further, it is too expensive - massive subsidies are required to keep nuclear plants in operation. Further, no new nuclear plant has been ordered in the United States since

1978, and every plant ordered after 1973 was canceled or abandoned because of the high cost of this form of energy.

- Environmental relaxations - President Bush is trying to convince the public that it is necessary to weaken the Clean Air Act and nuclear safety protections to build more power plants. In reality, weakening these protections would help his campaign contributors, while hurting our public health. We need the benefits of increased energy generation, but we can have a consistent energy supply and a healthy environment by: replacing old power plants with efficient combined-cycle gas plants, improving transmission lines, maximizing production from existing oil and gas wells, and transporting gas from Prudhoe Bay in an environmentally-friendly way.
- Solar and wind energy are premature - Solar and wind are reliable, clean, and productive sources of energy but the NEP and Bush's remarks make it appear that it is premature to rely upon solar and wind. Solar and wind, and geothermal sources supply 10% of California's energy currently and recent advances in technology are making alternative energy an increasingly greater option for fulfilling more of our future energy needs.

Unfortunately, with its old-fashioned, outmoded emphasis, the NEP does little to solve the nation's energy problems, now or in the future, as the legislative comparison table proves. Because the NEP is focusing on expensive fossil-fuel production and increased nuclear capacity, the plan will take up to a decade to come on line. Because the US has only 3 percent of the world's oil supplies, the Bush-Cheney plan would leave us dependent on unreliable foreign oil. Drilling for oil on public lands cannot significantly reduce our reliance on foreign oil because our demand is so much greater than economically recoverable domestic supplies. Oil is a global commodity and its prices are set on the world market. There's not enough oil under the United States to make a significant dent in gas prices. Instead, we could "drill under Detroit" by raising fuel efficiency to 40 mpg for cars and light trucks. This would save consumers at least \$45 billion each year at the gas pump, and save three million barrels of oil per day.

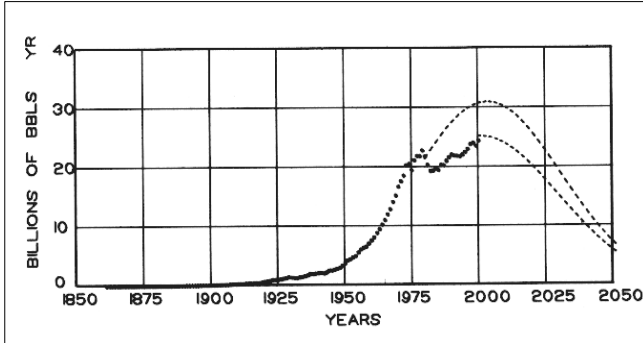
More nuclear power and oil and gas production will do little to relieve skyrocketing electricity prices in the short-term. Increased oil production will do nothing to help California's electricity shortages or high prices as only one percent of California's electricity comes from oil. However, if Americans bought only Energy Star appliances, such as refrigerators and washing machines, we would shrink our energy bills by more than \$100 billion. Conservation is a "personal virtue," says Vice President Dick Cheney, but efficiency measures provide the quickest, cleanest and cheapest methods of solving our future energy needs, especially in the short term. Using more efficient technology immediately, such as compact fluorescent light bulbs, helps save energy and money without forcing people to sit in the dark this summer. New efficient combined cycle natural gas plants can begin saving energy and reducing pollution from old, dirty and inefficient plants by next year.

The Bush-Cheney energy plan won't work, especially for future energy needs, because it makes the wrong choices. *The Bush Administration energy plan ignores high-tech, energy-efficient solutions in favor of increased oil, gas, coal, and nuclear production, while his budget proposal slashes funding for renewable energy and efficiency by a third.*

(Further discussion about future energy needs and an alternative, sustained energy plan is contained at the end of Section II.)

Will the NEP Free the U.S. from Foreign Oil?

Our nation consumes *20 million barrels per day (mbd) of oil* with about half from domestic production and half (over 10 mbd) from imports. *Estimates indicate that over the next 20 years, U. S. oil consumption will increase by 33 percent, natural gas consumption by well over 50 percent, and demand for electricity will rise by 45 percent.* If America's energy production grows at the same rate as it did in the 1990s we will face

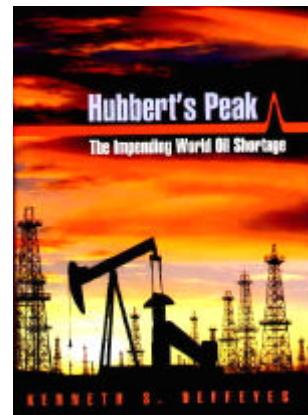


an ever-increasing gap. Increases on this scale will require preparation and action today. America has not been bringing on line the necessary supplies and infrastructure. *Yet we produce 39 percent less oil today than we did in 1970, leaving us ever more reliant on foreign suppliers.*

There is a new book that should have been considered, studied, and memorized in the preparation of the

NEP called ***Hubbert's Peak, The Impending World Oil Shortage*** by Princeton professor, Dr. Kenneth Deffeyes. He points out that his former colleague, M. King Hubbert accurately predicted the peak in U.S. oil production and that his prediction for the world oil peak and decline will probably be fulfilled as well. Reprinted here is the now famous Hubbert's peak for the world oil production. The lower curve, Estimate 1, represents all known oil reserves and the expected production rate. The upper curve is Estimate 2 that allows for all of the speculative optimism that everyone wants to believe. The reality is that the lower curve is the consequence of probable production rates if the ultimate discoverable oil is 1.8 trillion barrels (area under the lower curve). The upper dotted line is the most likely future production if the ultimate discoverable oil is 2.1 trillion barrels. At a world consumption rate that approaches 0.1 billion barrels per day (DOE/EIA), we are at an extraordinary consumption rate of 25 billion barrels per year that Hubbert clearly indicates cannot be sustained even for a few more years. What will happen to our future energy needs for oil? From the beginning of the book (p.1), we read:

"After the peak, the world's production of crude oil will fall, never to rise again. The world will not run out of energy, but developing alternative energy sources on a large scale will take at least 10 years. The slowdown in oil production may already be beginning; the current price fluctuations for crude oil and natural gas may be the preamble to a major crisis. In 1956, the geologist M. King Hubbert predicted that U.S. oil production would peak in the early 1970s. Almost everyone, inside and outside the oil industry, rejected Hubbert's analysis. The controversy raged until 1970, when the U.S. production of crude oil started to fall. Hubbert was right. Around 1995, several analysts began applying Hubbert's method to world oil production, and most of them estimate that the peak year for world oil will be between 2004 and 2008. These analyses were reported in some of the most widely circulated sources: *Nature*, *Science*, and



Scientific American. None of our political leaders seem to be paying attention. If the predictions are correct, there will be enormous effects on the world economy. Even the poorest nations need fuel to run irrigation pumps. The industrialized nations will be bidding against one another for the dwindling oil supply.”

This is probably the most serious deficiency of the NEP. It simply does not sound the alarm concerning what is sure to be a shock to the Western economy and probably the world. The NEP is “fiddling while Rome burns” and the Bush administration makes us think it is “business as usual.” Since no Apollo program nor Manhattan project is mobilized for solving the impending oil shortage, except for a few extra barrels from an embattled Arctic Wildlife Refuge, the NEP clearly does not prepare us to meet future energy needs. (For further convincing facts on the impending oil crisis, the first chapter of *Hubbert’s Peak* is available on line at: <http://pup.princeton.edu/chapters/s7121.html>)

The American Petroleum Institute (API) is also worried. Their request for “increased production” does not even present hope for more oil.

“Domestic energy production from all available sources must be increased, without compromising a clean environment. Along with the incredible advances in technology, transportation, and medicine that improve our lives comes the increased need for energy. The Department of Energy predicts that by the year 2020, U.S. oil and natural gas demand will rise by 33 percent, with energy demand increasing 1 percent for every 2 percent growth in GDP. The oil and natural gas industry has made significant investments in finding ways to utilize technology to continue to provide affordable and reliable resources while at the same time contributing to a cleaner environment. Regardless of that progress, several factors hinder the industry’s ability to keep up with this growing demand.” (ref. www.api.org)

The API also stresses that access to federal lands is important to them and a better foreign policy. Under the best of circumstances the United States will become more and more dependent on oil imports. This dependency now amounts to about 57 percent of U.S. oil demand; a number that the Department of Energy projects will rise to 64 percent by the year 2020. In order to ensure reliable and secure supplies of oil, we have no choice but to diversify and increase the sources of our supplies, both domestic and foreign. While the U.S. has the technology necessary to produce oil and gas in an environmentally safe manner, access to domestic resources 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 natural gas industry’s ability to compete for opportunities abroad has been threatened by the use of unilateral economic sanctions against oil producing countries as an instrument of foreign policy — despite the evidence that API says indicates that they don’t work. They want to ensure enough energy to support economic growth by promoting responsible development of both domestic and foreign resources. The API recognizes that sophisticated new technology developed by the oil and natural gas industry greatly reduces adverse impacts on the environment by exploration and production, both onshore and offshore. However, the opinion of the American Petroleum Institute is that “While there is no quick fix to our current energy problems, the oil and natural gas industry embraces this opportunity to work with government decision-makers to assure that a fair and effective National Energy Strategy is developed that will prepare us for future growth.” The word “fair” is the key here which was already called into question during the lobbying evidence obtained by the General Accounting Office. The API apparently want to be fair only to

themselves and their members, while giving no assurance for future national energy needs.

Reporter Yereth Rosen confirms this evaluation indicating that the Alaska oil search proceeds outside the Arctic National Wildlife Refuge (ANWR) spotlight but still cannot meet US needs (March 10, 2002, Reuters). He says that beneath the tundra on a once-overlooked stretch of federal land in Arctic Alaska lurk potential oil riches. Drilling teams have already found significant pools of untapped oil there. Oil companies are poised for more exploration. The petroleum potential is so great that the federal government is planning new oil and gas leasing. The site is not northeast Alaska's Arctic National Wildlife Refuge (ANWR), the subject of a bitter battle between environmentalists and drilling supporters. It is the National Petroleum Reserve-Alaska (NPR-A), a sprawling 23 million-acre piece of federal land that lies far west of the Arctic Refuge and, apparently, well out of the national spotlight. The largely undeveloped petroleum reserve has long been in ANWR's shadow, partly because its remoteness, failed exploration attempts in past decades and earlier government decisions to not bother with oil leasing there, said one federal manager.

"It's way up here all by itself, and nothing happened with it because nobody could get into it," said Fran Cherry, Alaska district manager of the Bureau of Land Management (BLM), the federal agency that oversees the reserve. Now new information, including recent exploration successes by Phillips Petroleum Co., is likely to boost estimates of potential oil resources in the reserve," Cherry said. The U.S. Geological Survey said that the reserve's northeast quadrant probably holds 1.8 billion to 4.7 billion recoverable barrels. Past estimates are likely to be too conservative, he said. "Who knows the potential in NPR-A? I think it's huge," Cherry said. "NPR-A has the potential to be a lot bigger than we had originally estimated." Government surveyors found oil seeps in the area as early as 1917. The petroleum reserve was created in 1923 to provide energy for military security. Despite sporadic exploration that started in the 1940s, there has been no commercial oil production there. For decades, the industry ignored the area.

That changed after 1995, when Arco Alaska Inc. announced the discovery of its 430 million barrel Alpine field on state land near the petroleum reserve's eastern border. Phillips, which acquired Arco's Alaska assets in 2000, is now producing 90,000 barrels a day at Alpine, currently the westernmost oil field on the North Slope. The BLM in 1999 offered the first NPR-A leases in 15 years, opening about 4 million acres in the reserve's northeast corner to development. Oil companies bid \$104.6 million for the rights to explore 133 tracts there. The BLM plans another lease sale this June, offering the tracts that did not receive bids three years ago. The BLM has also launched a broader land-management plan that would allow for more leasing as soon as 2004 in the reserve's northwest corner. That area has been the subject of some oil industry inquiries, Cherry said. "The Alpine field -- about 60 miles west of the trans-Alaska pipeline's intake station at Prudhoe Bay -- is what makes even modest amounts of oil from the reserve attractive to the industry," said Chuck Logsdon, chief petroleum economist for the state Department of Revenue. "If you found something in NPR-A, it wouldn't have to be a gargantuan oil field to justify building a pipeline all the way to Pump Station No. 1." The state is optimistic about NPR-A development, he said. His department's long-term revenue forecasts predict NPR-A production to start in 2007, with up to 75,000 barrels a day pumped from there by 2009. However, when it comes to 20 million barrels per day or even the 25% extra needed by 2020 (5 million barrels each day), the small numbers quoted above are an oil drop in the big U.S. bucket.

Senator Tom Carper offered a few words of wisdom concerning complacency which generally ignoring the oil situation has induced. He spoke to Federal Reserve Chairman Alan Greenspan with a desire to improve the nation's economy by supporting the creation of a national energy policy that focuses both on increasing conservation and responsible production. (Greenspan testified before the Senate Banking Committee, of which Carper is a member, on the state of the nation's economy.)

"With the energy crisis, particularly of electricity in California and increases in natural gas prices, the stars were perfectly aligned to compel us as a nation to formulate a national energy policy," Carper said. "I have a concern now that as the crisis appears to be abating, we might lose this opportunity to create a policy that both conserves and produces more energy. I filled up with gas yesterday in Harrington, Delaware, for \$1.23 a gallon, which is great to see. But we must not allow a temporary rollback to lull us into complacency. Now is not the time to rest on our good fortune, but to push forward for a long term solution."

Greenspan agreed with Carper about the need to both increase energy conservation and increase energy production in the coming years. "Senator, I fully agree," Greenspan said. "These are issues which you cannot address overnight. They are long-term problems. And unless we address them, while we are, in fact, in temporary surplus, we're going to find that it's going to become really much more difficult and the type of problem which is going to induce us to make the types of decisions which are probably mistakes." (ref: www.senate.gov, 7-24-01)

The United States cannot drill its way to energy security. While America has only 2.6 percent of the world's oil reserves, OPEC currently holds 80 percent. Increased drilling will not reduce our dependence on foreign oil and it threatens the viability of our environment. As the technological giants of the world, we are capable of developing new and innovative sources of renewable energy. Increasing fuel efficiency for automobiles 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, as reported by House Representative Anna Eshoo. (ref. www.house.gov).

Can the NEP Offer Sustainable Energy Production?

Since we have seen from the previous discussion that the NEP promise of future oil production is groundless, it is worth looking at the NEP endorsement of the nuclear possibility. Regarding nuclear power and the possible help reactors can have to the growing need for energy, Dr. James A. Lake, President of the American Nuclear Society, says, "We congratulate the Bush Administration for recognizing the critical need for a comprehensive energy plan which addresses a broad array of options. Nuclear power holds great promise for the generation of abundant, clean and affordable electricity for the United States as well as the rest of the world," Lake continued. "It is gratifying to see that this is understood and supported at the highest levels of government." In his May 3, 2001, testimony before the Senate Energy & Natural Resources Committee, Corbin McNeill, chairman and CEO of Exelon Corporation, said, "I . . . believe that the nuclear energy industry has an exceptionally bright future." Exelon, which owns and operates the nation's largest network of nuclear power plants, had good reason to be optimistic. The Bush-Cheney energy plan considers nuclear power to be a major option for America's energy future.

As it turns out, McNeill played a role in determining the conclusions of the administration's energy plan. Last year he personally contributed several thousand dollars to Bush's presidential campaign and to Republican committees, while his

company and its subsidiaries donated nearly \$300,000 to the Republican Party (compared to \$92,500 to the Democratic Party). In March, after Exelon contributed another \$40,000 to the Republican Party, McNeill met with top Bush aides. Soon after, administration officials began praising nuclear power and promoting its expanded use. Exelon and the entire nuclear power industry stand to benefit from the Bush energy plan through federal subsidies, relaxed environmental standards, expedited re-licensing of older plants and a streamlined permitting process for new plants - all of which means curtailing what little public participation is currently allowed.

"If you want to do something about carbon dioxide emissions, then you ought to build nuclear power plants because they don't emit any carbon dioxide, they don't emit greenhouse gases. America should also expand a clean and unlimited source of energy, nuclear power. Many Americans may not realize that nuclear power already provides one-fifth of this nation's electricity, safely and without air pollution. But the last American nuclear power plant to enter operation was ordered in 1973. By renewing and expanding existing nuclear facilities, we can generate tens of thousands of megawatts of electricity at a reasonable cost without pumping a gram of greenhouse gas into the atmosphere." (Bush speech, 5/17/01 and CNBC interview, 4/21/01);

According to the Congressional Research Service, since its inception the nuclear energy industry has received more than \$66 billion in taxpayer research and development subsidies. As for Exelon, profits have soared in recent months, with first quarter 2001 revenues of \$3.83 billion compared to \$2.987 billion over the same period last year - an increase of 28 percent.

In a combination of short-term and long-term investments in nuclear energy, the NEP plan recommends that the United States:

- Support the expansion of nuclear energy as a major component of our national energy policy.
- Reexamine policies to allow for research, development and deployment of fuel conditioning methods that reduce waste streams and enhance proliferation resistance.
- Consider technologies to develop reprocessing and fuel treatment technologies that are cleaner, more efficient, less waste-intensive, and more proliferation-resistant.

The 103 U.S. nuclear power reactors generated over 750 billion kWhrs of electricity in 2000 (about 20 percent of the total U.S. electricity generation) at generation costs that were lower than coal and substantially lower than gas and oil. Congress is expected to move legislation that address both short-term and long-term energy needs across the nation. Bills have been introduced by Senator Pete Domenici (R-NM) [S.472] and Representative Lindsey Graham (R-SC) [H.R.1479] to provide a stronger foundation for the support of nuclear energy, science and technology at the federal level.

However, as we look at the recommendations and the House and Senate attempts at implementation, sustainable energy is not possible with the decisions that are being acted into law, based on the leadership spearheaded by the NEP.

Greenhouse Gases

In any discussion about "sustainable" energy, part of the sustaining is usually considered to be the environment, as well as the homes and cars of America. Greenhouse trading

took off recently but the U.S. is still on the sidelines (Julie Vorman, 3-19-02, Reuters). At least 55 million tons (50 million tonnes) of greenhouse gas emissions have been traded since 1996 by companies and countries trying to limit global warming while the world's biggest polluter -- the United States -- remains on the sidelines. Emissions trading has been embraced by Britain, Denmark and the European Union as a reward for companies that curb emissions of greenhouse gases blamed for global warming. A trading scheme typically establishes a pollution limit, then allows companies that cut emissions to sell credits to firms unable to meet required reductions.

The Pew Center on Global Climate Change said in a new report that regional and national emissions trading markets are rapidly evolving, but each has different rules that can increase the costs of trading. The United States, which emits about one-third of the developed world's man-made greenhouse gases, has so far rejected a national emissions trading scheme for carbon dioxide. Carbon dioxide, generated by power plants and automobiles, is widely considered the worst of the pollutants linked to heat-trapping gases. The Bush administration last year surprised the world by pulling out of the 1997 Kyoto pact, in which developed nations have until 2012 to cut emissions by about 5 percent from 1990 levels. Bush said the cuts would be too costly for the U.S. economy.

The treaty also offers carbon dioxide emissions credits to energy companies that invest in renewable power projects. The U.S. refusal to join Kyoto means American companies may have a short-term advantage if they compete against other firms that must add in the costs of carbon emissions. But the Pew report said U.S. firms face longer term uncertainty about climate change policy, which may be costly. U.S. innovators such as DuPont Co., which have begun cutting emissions, may not be able to sell their reductions in an international market, it said. "Despite the United States' inaction, it is abundantly clear that we are beginning to see the outlines of a genuine greenhouse gas market," said Eileen Claussen, president of the Pew Center.

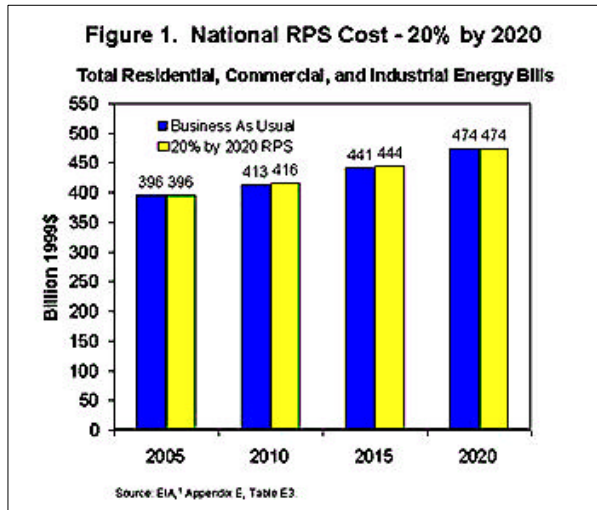
The Pew Center report said more than 65 trades of greenhouse gas emissions totaling 55 million to 77 million tons (50 million to 70 million tonnes) have occurred over the past five years, but that those figures probably underestimate the market activity. The emissions reductions traded for between 60 cents and \$3.50 per ton of carbon dioxide equivalent. The data did not include trades within BP and Royal Dutch Shell, which launched their own internal cap-and-trade programs in 1998 to cut emissions. Bush has outlined a voluntary plan to slow the growth of some global warming gases, but not carbon dioxide. The plan would set goals for reductions tied to U.S. economic growth and give U.S. companies incentives to meet them. That decision was criticized by environmental groups, and by some in the electric industry who said mandatory regulations are inevitable and businesses need to start planning for them.

Nearly three dozen U.S. Midwestern companies plan to launch the Chicago Climate Exchange by the third quarter of 2002 to cut regional emissions of six greenhouse gases. The Chicago exchange proposes to require firms to cut emissions by 2 percent below 1999 levels during 2002, and reduce them 1 percent annually. Credits would be given for U.S. and overseas emissions offset projects. Richard Morgenstern, a climate change expert with think tank, Resources For the Future, said only a handful of U.S. companies have experimented with emissions trading for speculative reasons or to appear more environmentally conscious. Until the U.S. government sets a clear ceiling on greenhouse gases, an active market cannot emerge, he said. "With the absence of a serious U.S. program or serious commitments, there is no value in trading. The only reason some one would trade -- apart from public relations value -- is if they were facing

an obligation to make reductions, and felt they could buy someone else's emissions cuts at a lower cost."

Furthermore, President Bush announced a global warming plan that would do nothing to address the problem. In fact, the plan uses a brazen accounting trick to mask the fact that -- even if his voluntary emissions targets are actually achieved -- heat-trapping carbon dioxide pollution would keep increasing at almost exactly the same rate it has for the past 10 years. Based on the president's own projections, emissions would increase 14 percent over the next ten years. In a press release, the NRDC calls the administration's efforts a "costlier, slower, and dirtier" plan, which clearly will not sustain the nation's energy needs.

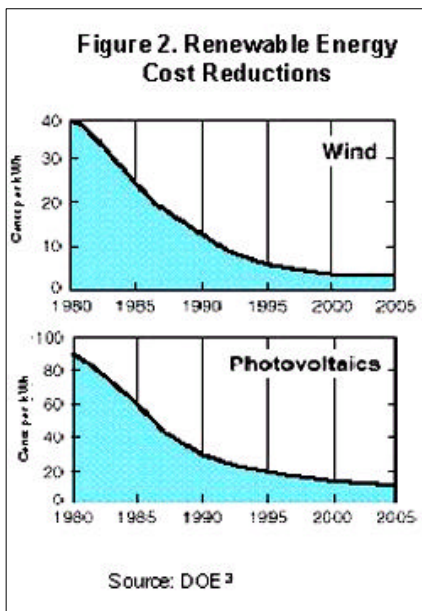
Will the NEP Achieve Renewable Energy Production?



The simple answer to this question is NO. Renewable energy is the least interesting to the NEP, as noted above, with the Bush-Cheney team believing it will take years to implement and years of R & D to discover. The interesting rebellion within the ranks is the surprising Department of Energy revelation that a 20% Renewable Portfolio Standard (RPS) will cost the U.S. no more than business as usual. They also compared it with a 10% RPS and found the same information. This directly contradicts the NEP where no RPS goals are set for implementation. As a result, the House passed a

measure with no RPS and the Senate is only voting for a 10% RPS. Therefore, the renewable energy production we desperately need will only be implemented by market demand and competitive pricing. Further evidence showing the reasoning and inner

workings of the administration's work to implement the NEP is now examined. This will help explain why renewable energy is being excluded and sidelined.



Critics have long suspected that the Bush administration's energy policy was the result of very cozy relations with corporations, with eighteen of the energy industry's top 25 financial contributors to the Republican Party advising Vice President Dick Cheney's energy task force, according to the *New York Times* (2-27-02). The White House refused to release the names of consultants to the energy policy, which calls for nearly \$34 billion in tax subsidies to polluting energy industries. On February 21, 2002, a federal judge ordered the Energy Department to turn over 7,500 pages of related documents, after the National Resources Defense Council (NRDC) filed a lawsuit under the Freedom of Information Act. "The Bush

administration's secret task force proposed a policy that would benefit big energy companies while doing nothing to promote true energy independence," said Sharon Buccino, a senior attorney with NRDC. "Now the White House's insider-trading scheme on energy policy is collapsing like a house of cards."

The Bush-Cheney energy plan, which the administration released in May, 2001, is the culmination of a process that hinged on cozy business connections, secret deals and industry campaign contributions, without the interference of the DOE. There were many points of convergence. Both President Bush and Vice President Cheney worked in the energy industry. They appointed pro-industry people to their transition teams and to key administration posts overseeing federal energy and environmental policies. They received generous campaign contributions from energy companies, which enjoyed easy access to the Cheney energy task force. The result? An energy plan that promotes industry-favored measures, including opening protected lands to oil and gas drilling, building more than 1,300 electric power plants, and weakening environmental standards.

Many of the connections between the Bush administration and the energy industry have been reported by the news media. But no news organization has had the opportunity to connect all the dots to show just how tightly the administration is tied to the energy industry. At best, the energy industry has undue influence on major governmental decisions that will affect all Americans. At worst, the energy industry, which is enjoying record profits, has hijacked our government and now has the power to seriously weaken environmental safeguards, threaten public health, and gouge consumers. "Not since the rise of the railroads more than a century ago has a single industry [energy] placed so many foot soldiers at the top of a new administration" (*Newsweek*, 5/14/01). The Bush administration's pro-industry energy agenda may be explained in part by the fact that the president, vice president, national security adviser, two cabinet secretaries and at least six top officials came from the ranks of the energy industry. In addition, we have an energy secretary and White House chief of staff who have close ties to the auto industry.

"When money determines who has access, it can determine whose interests are nourished," (*Houston Chronicle* editorial on the Bush-Cheney energy plan, 5/28/01). The energy industry contributed tens of millions of dollars to federal candidates in the last election cycle. Roughly 75 percent of that money - more than \$48.3 million - went to Republicans, according to the Center for Responsive Politics. Nearly \$3 million went to Bush, who was the top energy industry recipient in last year's election and the top recipient over the last decade.

Where the George H.W. Bush administration developed a national energy policy with DOE open proceedings and held 18 public hearings across the country, George W. Bush's administration conducted its three months of work behind closed doors, without the DOE. Vice President Cheney declined to meet with environmentalists because he said he did not have the time. However, he did find the time to meet with energy company executives at various stages in the process, and reportedly encouraged them to submit ideas for the task force's consideration. Industry access helped shape the task force's final report. "The energy [plan] was so favorable it almost seemed like power companies got everything they . . . asked for," says economic analyst Barry Abramson in "Power company stocks fall," *Associated Press*, 5/31/01.

Industry trade groups are now lining up to support the Bush-Cheney energy plan. More than 400 groups have joined the Alliance for Energy and Economic Growth, a coalition formed by energy companies to lobby for the administration's plan. The coalition - spearheaded by the American Petroleum Institute, the American Gas Association, the

Edison Electric Institute, the National Mining Association and the Nuclear Energy Institute - has the blessing of the White House, which is counting on unified corporate support to gain congressional approval of the plan. The new coalition has already raised more than \$1 million to support its lobbying efforts. The cost for trade groups joining the coalition is \$5,000, "a very low price," according to Republican lobbyist Wayne Valis, who stated in a memo that those joining "must agree to support the Bush energy proposal in its entirety and not lobby for changes to the bill." The price for disloyalty, he says, is expulsion from the coalition and possible reprisal by the administration. "I have been advised that this White House 'will have a long memory'," he warns prospective members, ("Trade Groups in Lock Step Behind Bush Energy Policy," *Washington Post*, 5/30/01).

The administration hopes to gain support for its own energy priorities, which include expanding refinery capacity, opening more public lands to oil drilling, and providing federal subsidies for fossil fuel technology. By repeatedly insisting that the problems facing consumers are the result of an "energy crisis," it may be easier to sell the administration's plan to relax environmental laws and dramatically increase fossil fuel energy production.

Sustainable, Futuristic National Energy Plan

If we make the right energy choices today, Americans can have cleaner air, less global warming pollution, vibrant public lands and reasonably priced power far into the future. Unfortunately, the Bush-Cheney NEP plan will not accomplish these goals. His plan focuses on the wrong choices - to produce more coal, oil, gas and nuclear power - with insufficient emphasis on energy efficiency and cleaner alternatives.

We need an honest, balanced energy plan that gives us quicker, cleaner, cheaper and safer energy solutions. We can have clean energy and a healthy environment. Increasing energy efficiency technology and fuel efficiency will decrease our energy use and help relieve summer shortages immediately. In addition, wind turbines can be installed in six months and new, combined-cycle natural gas plants can begin saving energy and reducing pollution from old, dirty and inefficient plants by next year. By choosing energy options such as solar, wind and energy-efficient technologies, we can protect our clean air, clean water and climate. Not only do we save energy by using more efficient appliances and technologies, such as compact fluorescent lightbulbs, but we save billions of dollars, too. Raising fuel economy standards for cars, SUVs and other light trucks will save consumers \$45 billion a year at the gas pump. An energy plan that provides a strong balance of efficiency, renewable energy and cleaner natural gas production is safer for our public health and environment.

Without bias and favoritism, what three things does a really sustainable, future-friendly energy plan include for example?

1) A sustainable energy plan has to include efficiency measures like raising miles per gallon standards to 40 mpg for cars and light trucks would cut carbon dioxide pollution by 600 million metric tons, save consumers at least \$45 billion each year at the gas pump, and save three million barrels of oil per day. This is more oil than we get from Persian Gulf imports, the Arctic wildlife refuge and California offshore oil drilling combined.

The Pacific Northwest National Laboratory estimates federal agencies would save \$1 billion annually if they installed currently available, energy-efficient technologies, such as compact fluorescent lightbulbs and efficient appliances. Further, according to the DOE, if

Americans bought only Energy Star appliances, such as refrigerators and washing machines, we would shrink our energy bills by more than \$100 billion. Offering tax credits for the use of efficient equipment and building designs would bring immediate results. These credits would cut our demand for electricity and natural gas faster than new plants, transmission lines, and pipelines can be built. Introducing new standards for residential and commercial heating equipment, commercial air conditioners and electrical transformers would result in huge energy savings. Simply obeying the law that the DOE is supposed to implement regarding commercial air conditioner standards will also save money.

2) A sustainable energy plan includes renewable energy. When appropriately sited, wind generation can provide massive amounts of clean energy. It is estimated that the states of South Dakota, North Dakota and Texas have enough wind to provide electricity for the entire United States. This form of power is quickly becoming competitive with other forms of energy - by the end of 2001, the U.S. Department of Energy expects an additional 4,600 megawatts of wind power generation to be in place, enough to provide for 1.7 million more households. More must be done - North Dakota is ranked No. 1 in the nation in wind resources but has no wind farm of its own, nor transmission lines to move power to where it is needed.

Solar energy is so abundant that the sunlight the Earth receives in 30 minutes is equivalent to all the power used by humankind in one year. When appropriately sited, solar energy creates no pollution and is the most environmentally friendly source of power currently available. It is already used by 200,000 homes in the United States. One system that converts solar energy into heat - and is used to heat the buildings of Ford, General Motors and Federal Express - is already saving about \$400,000 per year in avoided fuel costs, and reducing annual carbon dioxide emissions by 10 million pounds.

When geothermal energy is captured, it can provide us with a large supply of energy. Careful assessments can enable us to access this type of energy without harming our public lands. The United States has an installed geothermal generating capacity of about 2,700 megawatts — the equivalent of about 58 million barrels of oil — and provides enough electricity for 3.7 million people.

By 2010, biomass power (converting carbon from organic matter into energy) could provide an additional 3,000 megawatts of electric capacity in the U.S. — enough electricity for more than 13 million people. Biomass production does not need to and should not involve the destruction of existing forests, including national or native forests as well as remaining old-growth or roadless areas.

3) A sustainable energy plan includes cleaner and more efficient electricity production, like replacing old coal power plants with efficient plants to start. New, high efficiency combined-cycle gas-fired power plants are twice as efficient and can be 10 times cleaner than old gas plants, but they must be sited appropriately. An estimated 35 trillion cubic feet of natural gas reserves is located in Prudhoe Bay, Alaska. Research is needed on how to transport this gas to the Lower 48 states in the most environmentally sensitive way. The Department of Energy estimates that we could recover an additional one million barrels of oil per day, and up to 6 trillion cubic feet of natural gas by using advanced technology in existing wells.

We have more energy than we can transport because of insufficient transmission lines. By upgrading transmission lines from traditional energy sources and improving transmission to new sources of renewable energy, we could increase the capacity and efficiency of transporting energy from one location to another in existing transmission

line corridors. For example, one company has developed a new high capacity transmission line for existing towers that can carry up to three times as much electricity as an old transmission line and can even be installed on existing towers.

Environmental Group Energy Policy Suggestions

As we look at some of the suggestions from environmental groups, a few energy plans stick out as remarkably reassuring rather than falsely complacent as the NEP.

Rocky Mountain Institute's National Energy Policy Institute

The Rocky Mountain Institute (RMI), for example, conducted their own National Energy Policy Institute think tank and established a website just for that purpose. A national energy policy isn't simple they say. But if you buy the vision and goals that are articulated below, then you can come up with 4 simple things that, if passed by Congress today, can have dramatic impact on our future:

- Accelerate putting hydrogen-powered fuel-cell vehicles on the road using incentives and requirements to ramp up production to 100,000 vehicles by 2010 and 2.5 million by 2020. These vehicles would use one-third the energy of today's cars (none of it from oil) and produce near-zero pollution. For example, you could create a \$1B reward pool, like a Systems Benefit Fund. Pay it out in 2007 based on the percentage of highway capable H2 powered vehicles (HPVs) sold by each American manufacturer. So if Ford sells half the American produced HPVs in 2007, they will get \$500M. There would be a minimum threshold of 10,000 vehicles to qualify to participate in sharing the pool and only pure H2 fueled vehicles would qualify (so it will provide the decision the industry needs in trying to decide whether to use on-board reformers or direct H2 fuel). Create a second \$1B reward pool for 2012. That way, we create healthy market competition. And instead of incentivizing an industry where half our money goes overseas, we create new American jobs, new American industries, and leverage 100% American energy sources.
- Incentivize the hydrogen fueling infrastructure. Provide a \$10B pool to reimburse people for 80% of the cost of home-installed electrolyzers and natural gas reformers installed at service stations. This breaks the chicken-egg infrastructure problem quickly. And it's still a lot cheaper than sending \$50B overseas every year! Require new gas pipelines to be capable of carrying hydrogen.
- Only allow clean power plants to be built. Clean plants produce power at roughly the same cost as dirty plants, so why should we continue to permit dirty plants? After 2010, only issue permits for electricity generation plants that are zero emissions or environmentally neutral: biomass, geothermal, solar, wind, hydro, are the best, but we could also permit Coal IGCC (integrated gasifier combined cycle with underground carbon sequestration) plants and NGCC (natural gas combined cycle) plants. Provide generous tax credits for erecting large wind turbine farms. Beef up the existing federal interstate electrical grid infrastructure where required to accommodate new wind power sources. By tapping into the wind energy in a few states, we can accommodate all our new electrical requirements both cheaply and cleanly.
- Improve the fuel economy of new vehicles powered by gasoline-engine technology. Congress should steadily increase standards for the combined fleet of cars and light trucks to 40 mpg by 2012 and 55 mpg by 2020. The NAS study shows that CAFE standards can be raised substantially without reducing vehicle weight and therefore

without affecting safety, regardless of what you believe about the relationship between weight and safety.

RMI Energy Policy Implementation Milestones

2005: New permits will only be issued for plants that are as clean as today's natural gas plants.

2005: Achieve 35mpg average fuel economy

2005: Tighten standards to reduce particulate emissions from new diesel vehicles by a factor of four from 2000 levels (soot is a major contributor to global warming)

2006: Each major car manufacturer would be required to produce 5,000 or more HPVs per year.

2007: CO2 emissions from US power plants will be reduced to 1990 levels

2010: New permits will only be allowed for plants that are zero emissions or environmentally neutral: biomass, geothermal, solar, wind, hydro.

2010: Tougher new emissions standards for all power plants will encourage retirement of older, more polluting plants, e.g., conversion of existing steam-electric plants into coal gasification plants

2010: HPVs are produced in high volume (hundreds of thousands per manufacturer per year)

2010: Achieve 40mpg average fuel economy (for fossil fueled vehicles). This is achievable through technology improvements and HPV adoption.

2020: All new passenger cars are HPVs

2020: Consume <10M (million) barrels of oil/day (we are consuming 20M barrels/day today). This is achievable with aggressive penetration of HPVs plus scrappage credits.

2025: Achieve 10% worldwide market penetration for HPVs. This is important to reduce emissions worldwide.

Require that all new plants permitted after 2005 pollute at levels less than today's natural gas plants and tighten these standards every year as technology improves. After 2010, only permit zero emission plants.

The cheapest way to add new energy capacity is to tap into the wind power potential of the Great Plains states and other states with abundant wind power. This will require enhancing our existing national electrical grid to move this power (as electricity) along the highest demand pathways and transmitting baseload wind power, which means load leveling by coupling the wind power to a Compressed Air Energy Storage (CAES) unit or other means. This can be done efficiently and cheaply. Provide tax credits for erecting large wind turbine farms with CAES units. Incentivize through a Renewable Portfolio Standard (RPS) and reverse auctions

Residential rooftop Photovoltaic (PV) systems (incentivize through requiring net metering, tax credits, reverse auctions, and RPS mandates). With such support mechanisms, markets would be sufficiently large that manufacturers could profitably build and operate 100 MWp/year PV module factories, and electricity costs for residential rooftop PV systems would compare favorably with residential electricity prices in certain areas (e.g., California and the greater New York region in the U.S.). With public policies that reflect the distributed and environmental benefits offered by PV—and

that can sustain domestic PV market demand growth at three times the historical growth rate for a period of the order of two decades—PV could provide 3% of total U.S. electricity supply by 2025.

Government intervention is required to achieve these goals. They will not happen on their own with normal market forces. The methods available for government to do this include: Incentivize advanced ice/electric hybrid and compressed natural gas vehicles by instituting a revenue-neutral feebate system providing large dollar incentives (\$5,000 or more) for clean vehicles (proportional to their environmental cost) with comparatively minor (\$375) assessments for purchasers of traditional gas vehicles. (ref. www.rmi.org)

Union of Concerned Scientists Energy Plan

The Union of Concerned Scientists, with assistance from American Council for an Energy-Efficient Economy and Tellus Institute, investigated the costs and benefits of a Clean Energy Blueprint to promote diversity in production and energy conservation. They also examine a subset of Clean Energy Blueprint policies included in the Renewable Energy and Energy Efficiency Investment Act of 2001 (S. 1333). They compare their figures with the business-as-usual forecast of the US Energy Information Administration (DOE-EIA). That forecast underlies the administration's National Energy Policy call to develop 1,300 to 1,900 new power plants by 2020.

The Union of Concerned Scientists find that the United States can:

- meet at least 20 percent of its electricity needs by renewable energy sources-wind, biomass, geothermal, and solar-by 2020.
- save consumers a total of \$440 billion by 2020, with annual savings reaching \$105 billion per year or \$350 per typical family.
- reduce our use of natural gas by 31 percent and coal by nearly 60 percent compared to business-as-usual by 2020, and save more oil in 18 years than can be economically recovered from the Arctic National Wildlife Refuge in 60 years.
- avoid the need for 975 new power plants @ 300 megawatts (MW) each, retire 180 old coal plants (500 MW each), retire 14 existing nuclear plants (1000 MW each), and reduce the need for hundreds of thousands of miles of new gas pipelines and electricity transmission lines.
- reduce carbon dioxide emissions by two-thirds from business-as-usual by 2020, while also reducing harmful air emissions of sulfur dioxide and nitrogen oxides by 55 percent.

Their suggestion concludes by referring to implementing a subset of the “Blueprint policies” included in the Renewable Energy and Energy Efficiency Investment Act of 2001 (Senate bill S. 1333) would save consumers over \$70 billion and reduce carbon dioxide emissions from power plants by nearly one third over the next 20 years. With 20 percent higher natural gas prices, consumers would save an additional \$60 billion under either the Clean Energy Blueprint or S. 1333 (ref. www.ocsusa.org).

World Wildlife Fund

A simple, powerful message, containing some of the recurring themes that many opponents of the NEP reiterate, the World Wildlife Fund asks support for our country's transition to a sustainable energy future and the reduction of carbon dioxide pollution that causes global warming.

Specifically, the World Wildlife Fund emphasizes:

- keeping the Arctic National Wildlife Refuge safe from oil drilling
- the strongest possible increase in fuel economy standards for new cars, SUVs, and other light trucks
- requiring that, by the year 2020, 20 percent of energy come from clean, renewable energy sources
- increasing efficiency standards for new central air conditioners and heat pumps by 30 percent above the current standard by 2006. Doing so would eliminate the need for nearly 150 power plants, save consumers \$12.6 billion, and reduce carbon emissions by 63.8 million metric tons.

As a nation, we hold only 3 percent of the world's reserves of oil, yet we consume almost 25 percent of the world's daily production. As long as this is the case, we will remain dependent on world oil markets, and we will pay the world price for oil, whether it is produced domestically or abroad. The safest and fastest way to increase our energy security is to improve the energy efficiency of our cars, trucks, homes, factories, and offices, and to increase the role of renewable non-petroleum sources of energy in our economy. Simply increasing production, at the expense of the wilderness areas and wildlife we all cherish, will not buy America energy security -- in either the short or the long run. America needs an energy policy that will do more than just give us directions to the next filling station. We need a roadmap that takes us forward, into the twenty-first century, not backwards to the 1950s.

Coalition on the Environment and Jewish Life

With a more political message, this organization still reaches similar conclusions as the other environmental organizations. However, we see less specific goals and dollar amounts than in other studies of the NEP.

The COEJL says that there are two ways to reduce oil dependence: increase domestic supply, and decrease demand. Because of very limited domestic reserves - the US has only 3% of proven world oil reserves - the only effective option is to reduce demand and therefore dependence on oil from all sources.

Therefore, energy conservation and the development of new fuels and technologies must now rise to the highest level of priority for the US Congress and Administration and the American people. Both the government and every citizen can and should take action to help conserve energy and reduce our reliance on oil, according to COEJL.

Energy policy has far-reaching impacts. Therefore, it must be developed through a deliberative process and not as a rushed reaction to the events of September 11. We call on Congress to adopt an energy security plan with the following core elements:

- a significant increase in vehicle fuel economy standards for all vehicles
- an expansion of the Strategic Petroleum Reserve to two billion barrels
- increasing funding for inter-city rail and metropolitan mass transit
- aggressive support for the development and production of alternative fuel vehicles, including hybrid-electric and fuel cell vehicles

- aggressive support for the development and incentives for the use of non-nuclear, clean, and decentralized sources of electricity

A plan should not include opening up the Arctic National Wildlife Refuge or other environmentally sensitive areas to oil or gas exploration or drilling. Such drilling will not provide oil for at least seven years, and even then would provide a tiny fraction of the oil that could be saved through conservation.

Industry has a vital role to play as well. We call on the automobile industry to work to bring super-efficient and alternative fuel vehicles to market as quickly as possible, and actively promote such vehicles for purchase by the American public. Given our national security needs, the automobile and petroleum industries should work with Congress to develop policies that will lead to a rapid and successful transition to more fuel efficient vehicles.

Finally, we call on each and every person and institution to help by: taking and promoting mass transit and carpooling; keeping the tires of all vehicles fully inflated; driving the speed limit; buying the most fuel efficient vehicles that meet their needs; and conserving electricity.

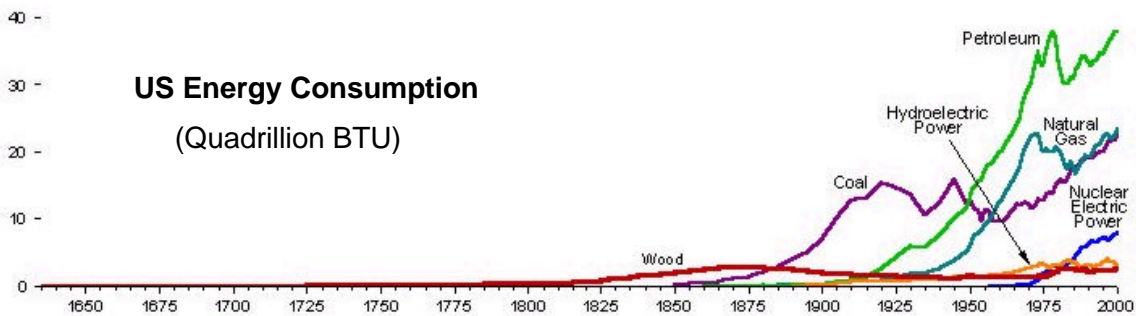
Together, we the American people can wean ourselves of dependence on Middle Eastern oil - and dramatically reduce our use of oil in general - through practical actions by industry, individuals, and institutions. We call on the leadership of our nation to move thoughtfully and swiftly to develop and implement an effective and environmentally sustainable energy security policy. (ref. www.coejl.org)

III. Analysis of the United States Department of Energy

Introduction

In 1970, electricity accounted for 8 percent of total U.S. energy use. In 2000, electricity accounted for 16 percent of total U.S. energy use. Yet, in the past thirty years, the DOE has slowly eroded an original Nixon-era optimistic concept of “energy self-sufficiency by 1980” into a policy of sponsoring the implementation of more studies, while the nation has become more deeply dependent on foreign oil (from 40% in 1970 to 55% in 2000) and its antiquated electricity transmission grid has become totally congested.

The United States spent over \$600 billion on energy last year, with U.S. oil imports climbing to approximately \$120 billion - nearly \$440 of imported oil for every American. These amounts would have been even higher if not for past investments in energy efficiency R&D and deployment programs. Continued progress is critical for sustaining and increasing these benefits.



An assessment of the United States Department of Energy (DOE) and its responsibility toward implementation of the Bush-Cheney Energy Plan is a complicated story of evasion, deceit and special interests. Analyzing the DOE is an historical task and an examination of US Code (USC) is also helpful to gain an insight into what is required by law. With the convening of the White House Energy Task Force to its final release of the National Energy Policy (NEP), the procedure has been a turn-about for the DOE. For decades, the DOE has managed the public input and generation of the energy policy plan. With the Bush-Cheney administration, this traditional power was usurped and only one DOE figurehead, Mr. Lundquist, was appointed as an executor along with the heads of all of the departments of government. Therefore, the DOE has had an inadequate game plan for implementation of the imported energy policy. As the record clearly shows, Vice President Cheney decided to spearhead the whole NEP himself, behind closed doors. Hence his own title, “Cheney Task Force Report.” The problems with the NEP started when Cheney largely ignored the DOE, its manpower, most of its renewables research, and specifically, Federal law 42 USC 7321 Sec. 801 (a)(2). There were no “public hearings in cities and rural communities” until after they were finished with the document, which ensured no changes would be made to the NEP, in direct violation of the law. Furthermore, the “views and proposals of all segments of the economy” were not “taken into account in the formulation and review of such proposed Plan.” It has therefore required legal retribution by the Government Accounting Office, and other groups, to subpoena relevant documents, as revealed in Section IV of this study. We can gain some perspective of the DOE and its struggle to work with an

overbearing Bush Administration on this vital process for our nation's energy security by first looking back at the DOE's formation and mandate.

Overview of DOE Roots: Energy Research and Development Administration

We start with a document subtitled "Institutional Origins of the Department of Energy" (DOE/OSE-0003, 1978) which has the official title of "Office of Military Application" by Roger Anders. It shows how the DOE was an outgrowth of the Atomic Energy Commission (AEC) and its Division of Military Application. During the 1960s this Division of Military Application developed a few new programs that were not defense related. Originating at the Livermore Laboratory in 1957 was Project Plowshare. The objective of Plowshare was to use nuclear explosions for peaceful purposes, some possible applications of which were thought to be large-scale excavation projects, power production, isotope production, and the recovery of oil from shale, tar sands, or depleted wells. In 1961, to emphasize the peaceful nature of Plowshare research, the AEC transferred Plowshare activities to an independent headquarters, the Division of Peaceful Nuclear Explosives (US AEC, "24th Semiannual Report", p.13). With laser fusion research investigating the ability of high-energy lasers to induce thermonuclear reactions in small deuterium-tritium pellets, it was obvious by 1969 the concept merited increasing levels of funding and industrial emphasis so the Division of Laser Fusion was established (US AEC, "Annual Report to Congress," 1972). Then in 1974, President Gerald Ford signed the *Energy Reorganization Act*, which abolished the AEC and assigned its operational functions to the newly created US Energy Research and Development Administration (ERDA). This specifically transferred the Division of Military Application and its functions to ERDA. Yet, it was not certain whether the weapons program and the division would remain part of ERDA. Because Los Alamos and Livermore Laboratory was able to perform nonnuclear energy research, the entire nuclear weapon manufacturing system and the division was kept as part of ERDA for a few more years. On August 4, 1977, President Jimmy Carter signed the *Department of Energy Organization Act* that abolished ERDA and transferred its functions to the newly created Department of Energy. The Division of Military Application was renamed the Office of Military Application and still managed the weapons production system and its other related duties. An Office of the Assistant Secretary for Defense Programs was created within the US DOE to manage Offices of Policy Analysis, Institutional Liaison, and Resources Management, International Security, Classification, Safeguards and Security, Laser Fusion, Albuquerque and Nevada Operations, and most noticeably, Military Applications. The "Office of Military Applications" document demonstrates the central role played by the Office of Military Applications within the DOE, even to this day.

Unraveling the foundation of the DOE in even more detail is the 1982 "History of the Energy Research and Development Administration" by Alice Buck (DOE/ES-0001). It reveals that President Nixon is credited with calling for a cabinet-level Department of Energy and Natural Resources in 1973 but also an Energy Research and Development Administration "to provide a balanced energy program for the future." When the Arab oil embargo hit in October of 1973, Nixon asked for Congress to give priority to his request for ERDA. There was an already existing Special Energy Committee and the National Energy Office, which then evolved into the Federal Energy Office established in the Executive Office of the President with control over fuel allocation, rationing, and prices. The Federal Energy Office advised the President on energy policy issues and assumed responsibility for implementing a futuristic "Project Independence." Project Independence was Nixon's plan for achieving national energy self-sufficiency by 1980.

With Ford replacing Nixon in August, 1974 due to Watergate, the *Energy Reorganization Act* became the new legislation to abolish the AEC and establish ERDA, the Nuclear Regulatory Commission, and the Energy Resources Council. ERDA “brought together for the first time the major programs of research and development for all forms of energy.” In fact, ERDA was an archetypal organization, one that even to this day inspires respect for its visionary breath and scope. For example, six assistant administrators worked directly under the Administrator of ERDA. Each of them headed the major programs for:

- 1) Fossil fuel energy,
- 2) Nuclear energy,
- 3) Solar energy,
- 4) Geothermal and advanced energy systems,
- 5) Conservation,
- 6) Environment and safety, and
- 7) National security.

The six assistant administrators were all presidential appointments which was regarded as the desire of Congress to establish an adequate balance among the different energy systems. The fuel programs, fossil, nuclear, solar, and geothermal, received the major portion of the estimated \$3.6 billion budget, with lesser amounts allocated to energy conservation. However, as noted in Section II of this report, conservation (now labeled “energy efficiency”) is still the number two “source” of energy today but was added in 1974 almost as an afterthought. With five percent of the world’s population using thirty percent of the available energy resources, Congress recognized that the future held enormous problems unless the nation developed a strategy for conservation. Still the congressional mandate split ERDA with its predecessor’s priority: the custody of the weapons program inherited from the AEC versus a national plan for energy research, development, and demonstration.

ERDA’s First National Energy Plan

In 1975, the head of ERDA, Robert Seamans, submitted the first national energy plan, “Creating Energy Choices for the Future” to the President and Congress (ERDA-48, V.1, 6-28-75). Developed in consultation with other government agencies and representatives of the private sector, the two-volume report outlined short-term (up to 1985), mid-term (1985-2000), and long-term (after 2000) programs for developing energy resources. The plan had received a final review earlier when Seamans presented it to the Energy Resources Council, through a series of weekly meetings. Citing the fact that oil and gas imports totaled twenty percent of the total US domestic energy consumption in 1974, the plan called for a shift to new primary forms of energy, and outlined five changes “that should be made rapidly and simultaneously in the nature and scope of energy research, development and demonstration programs” (DOE/ES-0001).

To provide new energy choices for the future, it would be necessary:

- To overcome the technical problems (primarily operational reliability and environmental impact) preventing an expansion of current major energy sources such as coal plants and nuclear reactors;

- To emphasize energy conservation in automotive transportation, buildings and industrial processes;
- To accelerate the capability to extract gaseous and liquid fuels from coal and shale;
- To include electricity generated by solar power as a high priority development, along with fusion and the breeder reactor; and
- To concentrate on under utilized technologies capable of being rapidly developed for the mid-term and beyond, such as solar heating and cooling and the use of geothermal power.

In summary, ERDA's first national energy plan called for an early demonstration of the technical feasibility of new energy systems with built-in environmental and safety controls. The Federal Government should provide overall leadership and undertake only those efforts that industry could not initiate. As a technology approached the stage of commercialization, industry would assume the initiative.

A sense of urgency ran through the Seamans report:

- ✓ the effort was formidable;
- ✓ the margin for failure was small;
- ✓ the risks for the Nation were great;
- ✓ the schedule would have to be adhered to if results were to be achieved and overall goals fulfilled.

The near-term results would require an immediate expansion of existing energy resources and the implementation of conservation technologies, while mid-term results would require the establishment of a synthetic fuels industry and continued growth in electrification. Long-term results would require the development of technologies to "*unlock the potential of essentially inexhaustible sources of energy*" such as breeder reactors, fusion and solar electric (wind, thermal, photovoltaics and ocean thermal).

Seamans also pursued a Field and Laboratory Utilization Study (FLU) in 1975 since he hoped that a number of field offices could be set up around the country so that certain projects could be handled locally rather than through headquarters. After several months of meetings and visits to field offices, the group concluded that the operations offices should not only procure, but also manage projects in the engineering development and demonstration categories, while the laboratories and energy research centers should perform work in the research and technology development categories in assigned areas of responsibility. After initial planning with headquarters, the laboratories and energy centers should be given considerable freedom to carry out their missions. In addition, the study group proposed that ERDA centers be set up in appropriate regional cities with headquarters at existing operations offices, and satellite offices established as needed.

Seamans had little success in implementing recommendations for establishing field offices in major cities, however. Perhaps the reluctance of the Office of Management and Budget to increase the size of the ERDA field operations was related to the serious consideration being given at the time to the creation of a Department of Energy.

New Energy Technologies a Priority

Seamans believed that a sixty-year lead time was no longer possible as in past energy transitions, and that in the current situation *a transition to new forms of energy* would have to be made in half the time and in a far more complex world. The title of the 1975

energy plan, 'Creating Energy Choices for the Future,' reflected Seaman's determination to commit the Energy Research and Development Administration to an experimental approach. Rather than follow a rigid plan that excluded options, he preferred a policy of exploring all energy options that offered potential in order to have choices for the future. According to the ERDA Administrator, the current energy crisis was a direct result of having no good choices. Following the publication of the 1975 energy plan, ERDA sponsored a series of public meetings in major cities across the country to encourage public discussion and increase understanding of both national and regional energy issues. Many misconceptions about the energy crisis were brought to light and clarified through these meetings. Expectant mothers worried about the fate of their unborn children if they walked near nuclear reactor plants. Other citizens voiced their fears that huge oil companies might be holding up foreign oil supplies in order to raise prices, while still others expressed concern over the unnecessary development of high energy technology.

Taking all of these suggestions into account, Seamans submitted a revised edition of the national energy plan, "Creating Energy Choices for the Future," on April 15, 1976. While the basic goals and strategy remained much the same, conservation, or energy efficiency, was singled out for increased attention and ranked with several supply technologies as being of the highest national priority. The increased emphasis on conservation would help provide *time to develop new energy sources* to replace dwindling supplies of oil and gas. The 1976 plan also gave additional emphasis to the role of industry in the development of new energy technologies, and added a short-term planning category which focused attention on opportunities for technology development having effect within five years. "Federal programs to assist industry in accelerating the commercialization of near-term technologies were a key element in the plan" (DOE/ES-0001).

Conservation was considered to be one of the most significant of the near-term solutions to the energy problems of the nation. In its early months the Energy Research and Development Administration began working on a two-part strategy for informing the American public of ways to conserve energy and for encouraging industry to develop greater efficiency in heating and cooling systems, and in machinery, home appliances, and automotive transportation. Among the early programs sponsored by ERDA were those to improve energy storage systems and to develop batteries for electric automobiles. Two years later, as his last official act as Administrator, Seamans rode in an ERDA electric car in President Carter's inaugural parade.

Although conservation was obviously one of the most immediate options to pursue, far more popular was the idea of using the sun to solve all energy problems. Public enthusiasm for solar energy as a potential solution to the energy crisis was reflected in the fact that three of the five major bills passed by the 93rd Congress in 1974 were concerned with solar and geothermal energy and by the fact that, for the first time, a major government agency had a separate division for solar energy. Solar energy was by no means a new technology in the United States.

More than 100,000 solar hot water heaters had been installed in homes in California and Florida in the early part of the century. The market began to decline in the 1940s, however, because of the competition of low-cost systems using fossil fuels. Then the 1970s brought rising fuel prices and a renewed interest in solar energy. It soon emerged as one of the leading candidates for solving the energy crisis. In addition to the yearly energy research, development and demonstration plan presented to the President and the Congress, the ERDA Administrator was required to submit a detailed report defining

the agency's overall solar program. Assistant Administrator for Solar, Geothermal and Advanced Energy Systems John Teem explained to the House Committee on Science and Technology that ERDA's goal was to develop and demonstrate commercially attractive and environmentally acceptable applications of solar energy at the earliest feasible time.

His office would propose four major program units to achieve this goal:

- (1) direct thermal applications,
- (2) solar electric applications,
- (3) fuels from biomass, and
- (4) technology support and utilization.

Pilot scale facilities and demonstration projects would provide a basis for commercialization decisions. By the year 2020, Teem *believed solar energy could supply as much as twenty-five percent of the nation's energy needs* from domestic resources if costs of collecting and utilizing solar energy could be reduced substantially. In his July 16, 1975, presentation to the House committee, Teem also said that he believed ERDA was launching an aggressive solar program but instant results would be very difficult to achieve. The critical phase would occur in the next few years as the data and judgment were developed to establish credible priorities.

The ERDA National Program for Solar Heating and Cooling was published the following October. It called for the demonstration of solar heating by the end of 1977 and combined heating and cooling by the end of 1979. The Government's role would be to stimulate industry and potential users of equipment and to assist industry with development and demonstration programs that hopefully would lead to the widespread use of solar energy. During the first year of operation, the Energy Research and Development Administration designated approximately four million dollars for commercial projects demonstrating solar water and space heating in various regions of the country. On April 5, 1976 Robert L. Hirsh, who replaced Teem, announced that buildings in twenty-two states and the Virgin Islands had been selected for the installation of solar heating and cooling systems to demonstrate that solar energy was practical for heating and cooling buildings such as schools, hotels, fire stations, factories and offices. Six months later a second phase of the demonstration program detailed plans to provide government support for thirty-five to fifty new solar heating and cooling systems in commercial buildings on a cost-shared basis. Technical management support would be provided by the NASA Marshall Space Flight Center in Alabama.

Construction began in early 1976 on a five-megawatt thermal solar test facility at ERDA's Sandia Laboratories in Albuquerque, New Mexico. Even before completion, the facility became the largest operational solar installation in the world, and in the next few years was able to assist in resolving many of the technical problems involved in the design and development of an even larger pilot plant constructed in the Mojave Desert near Barstow, California. The ten-megawatt Barstow plant, scheduled to be in operation in the 1980s, represented a first step toward the potential development of power plants in the 100-megawatt range, which could supplement the use of fossil and nuclear fuels in utility systems. From there, the Solar Energy Research Institute, NASA wind turbines, and geothermal cooperative projects were spawned.

Commercialization

In January 1976, so that ERDA might assist more effectively in the process of moving new energy technologies into the marketplace, Seamans established the Office of Commercialization. As outlined in the annual ERDA energy plans, industry was expected to take the initiative in the commercialization process while the Federal Government played a supportive role by identifying major problems and implementing steps to overcome them. The most significant task given the Office of Commercialization, however, was that of coordinating the planning for a synthetic fuels commercial demonstration program that would produce oil and gas from coal, oil shale and solid wastes. William T. McCormick, who had been in charge of the synfuels program for ERDA since November, continued to direct the program as head of the new Office of Commercialization. McCormick had already spent many months working in the area of synthetic fuels. In spring and summer 1975, while chief of the Science and Energy Technology Board in the Office of Management and Budget, he had been head of a presidential task force charged with preparing a detailed strategy for producing a million barrels of synthetic fuel a day within ten years. The final report, "Recommendations for a Synthetic Fuels Commercialization Program," contained a two-phase proposal for producing a million barrels of synthetic fuel a day by 1985, and incorporated federal incentives such as loan guarantees, price supports, and construction grants. The initial phase would include two shale oil plants, three high-BTU gas plants, and five waste conversion plants. The task force report, which formed the basis for President Ford's synfuels legislative proposals, contained a recommendation that the Energy Research and Development Administration carry out the proposed program. In spite of the support of the Ford administration, however, Congress deleted a \$6 billion synthetic fuels loan guarantee provision in the ERDA authorization bill for 1976. As a result the Office of Commercialization had a very short life. In November 1976, part of the staff was reassigned to the Office of the Assistant Administrator for Fossil Energy to assist with demonstration programs in fossil fuel, while other staff members went to the Office of Planning, Analysis and Evaluation. "Evaluation" had been added to the "Planning and Analysis" functions the previous July when the office had been given the additional responsibility of evaluating the success of various energy programs.

One demonstration program that had come to ERDA with the Office of Coal Research was the "Coalcon" (Clean Boiler Fuel Demonstration Plant Project) project to demonstrate the commercial feasibility of converting high sulfur coal into liquid and gaseous fuels by a process called hydra-carbonization. On November 19, 1975, Seamans announced that a 2000-acre site in southwestern Illinois had been selected from among sixteen possible locations for the plant scheduled for completion in 1980. Other organizational changes took place in July 1976. Eric Willis, who had been serving as director of the Division of Geothermal Energy, became the agency's eleventh assistant administrator when several offices were combined to form the Office of Institutional Relations. In addition, the Office of Programs Integration was established under David Israel, Seamans's technical assistant. Through these two new offices Seamans sought a more effective relationship with institutions involved in research and development programs and with prospective commercial users or producers of new technology.

Nuclear Energy

Nuclear energy was a program area that confronted the ERDA administrator with a disproportionate share of problems during the first year of the agency's existence. This was not totally unexpected since the larger portion of ERDA programs, personnel, and

budget had come from the Atomic Energy Commission. Four issues requiring early decisions were the custody of the nuclear weapon program, use of the national laboratories, future of the liquid metal fast breeder reactor, and handling and storage of nuclear wastes. Seamans organized special groups to study the possible course of action to be taken in each area.

Seamans tried to retain the nuclear weapons program within ERDA as well as nonweapon defense-related programs. The Breeder Reactor Program was stalled because of a Federal Court of Appeals Calvert Cliffs decision of 7-23-71 that required an environmental study before work could be done on the project which was performed by AEC and passed onto ERDA. Work was then scheduled to begin in 1978 with a startup in 1984.

A five-volume study was performed in 1976 on the technical alternatives available in the nuclear waste disposal program. The ERDA budget for 1977 reflected a large increase in funds for the program and plans were made for pursuing a variety of technological solutions to waste disposal. Robert Fri took over in 1977 as Acting Administrator and President Ford urged Congress to provide authority to ERDA to enter into cooperative agreements with US firms wishing to build and own uranium enrichment plants. Ford also included a four-fold increase in his 1977 budget for nuclear waste management. However, ERDA plans had to be cancelled following an announcement in April, 1977 by President Carter that the US would defer indefinitely all reprocessing and recycling of spent fuel from civilian power reactors and the liquid metal fast breeder reactor project. Alternate fuel cycles and processes would be evaluated. Apparently, Carter's decision was based on a desire to reduce the proliferation of nuclear weapons, representing a major shift in US nuclear energy policy. ERDA therefore had little else to do but begin the extensive reorganization of the waste disposal program required by the new policy.

ERDA's 1977 National Energy Plan

Acting Administrator Robert Fri, who had assumed the ERDA helm when Seamans resigned in January 1977, presented the agency's third and final energy research, development and demonstration plan, ERDA-77-1, on June 23. Fri informed the President that the ERDA plan was in accord with the President's National Energy Plan submitted to Congress on April 20, and would provide the basis for the technological changes needed to weather the difficult period of transition from dependence on limited oil and natural gas to inexhaustible or renewable sources of energy. Conservation, or increasing the efficiency of energy use, was again stressed as having the greatest immediate impact on the Nation's energy system between 1977 and the year 2000. A successful conservation program would require voluntary participation by the public, economic incentives, regulatory actions and the development of more efficient technologies to use and produce energy.

There may be some significance to the fact that Fri dropped Seaman's title, "Creating Energy Choices for the Future." Overall, ERDA-77-1 sounded a somewhat more somber note than the two preceding reports. The urgency and expectancy of the earlier reports "were replaced by a *resigned recognition*" that despite positive efforts by the Federal Government and by state governments, industry, and the American public to conserve energy and to increase domestic energy supplies, the Nation was more reliant than ever on the least plentiful domestic energy resources, petroleum and natural gas. The Fri report concluded, somewhat more optimistically, that the research and development activities of the Energy Research and Development Administration, if combined with the

efforts of other federal agencies, *“could provide the basis for the technology changes needed to meet the energy needs of the future”*.

The creation of the Energy Research and Development Administration in January 1975 represented an important step by the Ford Administration in a reorganization trend that began with the establishment of the Federal Energy Office by President Nixon in 1973 and climaxed with the creation of a cabinet-level Department of Energy in fall 1977 by President Carter. The first two agencies, the FEO and its successor the Federal Energy Administration, were given responsibility for both the administration and the regulation of energy. ERDA's mandate on the other hand clearly excluded regulation, and called for a concentration on the research and development of new energy technologies which might lead to commercialization. The functions of the three agencies found a merging point in the Department of Energy. Federal energy policy and programs, and the vast number of significant energy projects and technologies originated and coordinated by the Energy Research and Development Administration, would now be conducted in a single agency and in an arena of highest national priority. The final ERDA national energy plan, in consonance with the President's overall energy plan, called for a strong basis from which to *“weather the transition from limited supplies to renewable or inexhaustible sources of energy.”* The hope of the Carter Administration was that the larger arena of a cabinet-level department would provide that needed basis (DOE/ES-0001).

DOE Organization Act is Written into Law

With the new energy technology work started by ERDA, it was easy to see how the new executive department of the government would function. In fact, the DOE had very similar goals as ERDA, which made the transition fairly smooth in many respects. In 1977, Congress initiated the DOE Organization Act, now part of 42 USC 7321, with the main concern over (1) an increasing shortage of nonrenewable energy resources; and (2) our increasing dependence on foreign energy supplies that present a serious threat to the national security of the United States and to the health, safety and welfare of its citizens. The DOE Organization Act called for a strong national energy program to meet the present and future energy needs of the nation. Therefore, it integrated major Federal energy functions into a single department in the executive branch (Pub. L. 95-91, title I, Sec. 101, Aug. 4, 1977, 91 Stat. 567). Note that the specific mandate of relieving the increasing energy shortage and increasing dependence on foreign oil was built into the structure of the DOE from the beginning and written into the law the DOE is to abide by.

What is interesting in this area, is that the Congressional declaration of purpose mandates the DOE, among other planning, coordination, and dissemination duties, to

- (1) promote maximum possible energy conservation measures;
- (2) create and implement a comprehensive energy conservation strategy that will receive the highest priority in the national energy program;
- (3) undertake programs for the optimal development of the various forms of energy production and conservation; and
- (4) place major emphasis on the development and commercial use of solar, geothermal, recycling and other technologies utilizing renewable energy resources (42 USC Sec. 7112)

Thus, we would expect such a DOE mandate to be carried over into any NEP that the DOE would generate. *However, the Bush-Cheney NEP was not generated by the DOE.*

Perhaps this is how the Bush administration hoped to abrogate the responsibilities listed above, as was seen in Section II.

National Energy Policy Plan Requirements for the DOE

Regarding the 42 USC 7321 Sec. 801 (a)(2), this law requires that a “National Energy Policy Plan” be regularly submitted to Congress on a biennial basis, which then is reviewed by committees for the appropriate legislation that it may require. However, it also requires

- (1) that public hearings are to be held to insure that the views and proposals of all segments of the economy are taken into account in the formulation of the proposed NEP;
- (2) that the NEP satisfy the projected energy needs of the US for the periods of five and ten years;
- (3) a summary of R & D efforts to forestall energy shortages, to reduce waste, to foster recycling, to encourage conservation practices, to protect environmental quality, and recommend developing technologies to accomplish such purposes.

Lastly, 42 USC 7321 requires that “the President shall insure that consumers, small businesses, and a wide range of other interests, including those of individual citizens who have no financial interest in the energy industry, are consulted in the development of the Plan” (Pub. L. 95-91, title VIII, Sec. 801, Aug. 4, 1977, 91 Stat. 610). However, as we saw in Section II, Bush and Cheney decided to purposely circumvent this part of the law with little or no input from the public in general. For example, the most damning evidence was revealed when in March and April 2002, under order from a federal judge, the U.S. Department of Energy released to NRDC roughly 12,000 pages relating to previously secret proceedings of the Bush-Cheney energy task force. Even though the government heavily censored the documents before supplying them to NRDC, they reveal that Bush administration officials sought extensive advice from utility companies and the oil, gas, coal, and nuclear energy industries, and incorporated their recommendations, often word for word, into the energy plan (more details in Section IV).



As these above-mentioned requirements were written into law, the DOE appears to have acknowledged the responsibility of generating a national energy policy plan once in a while but not on a biennial basis. However, without another oil embargo, the DOE interest in solving the nation’s oil dependency waned. A decade-long trend followed a gradual DOE decline from promoting renewable energy primarily to mentioning it only within a chapter, as one out of several other programs.

However, Congress again upgraded the law with the Energy Policy Act of 1992 (EPAct) with the goals of enhancing our nation's energy security and improving the environment. Officially known as Public Law 102-486, EPAct includes provisions on all aspects of energy supply and demand, including energy efficiency, alternative fuels, and renewable energy, as well as more traditional forms of energy such as coal, oil, and nuclear power. The Energy Policy Act of 1992 requires the Administration to prepare, as part of the national energy policy plan, a least-cost energy strategy designed to achieve:

- 1) the energy production, utilization and energy conservation goals prioritized by the EAct;
- 2) the stabilization and eventual reduction in the generation of greenhouse gases;
- 3) an increase in the efficiency of the nation's total energy use by 30% over 1988 levels by the year 2010;
- 4) an increase in the percentage of energy derived for renewable resources by 75 percent over 1988 levels by the year 2005; and
- 5) a reduction in the nation's oil consumption from the 1990 level of approximately 40 percent of the total energy use to 35 percent by the year 2005.

Congress clearly linked the preparation of a least-cost energy strategy with the development and issuance of the Energy Plan. The EAct emphasizes the need for public participation as well:

"The Secretary (of Energy) shall provide for a period of public review and comment of the least-cost energy strategy, for a period of at least 30 days, to be completed at least 60 days before the issuance of such strategy. The Secretary shall also provide for public review and comment before the issuance of any update to the least-cost energy strategy required under this section" (42 USC 13382 (g)). Executive Order (E.O.) 13149, *Greening the Government through Federal Fleet and Transportation Efficiency*, was signed by the President on April 21, 2000, just to ensure DOE compliance with EAct as it applies to the DOE fleet of vehicles. The order requires Federal agencies to reduce their vehicle petroleum consumption by 20 percent, relative to their FY 1999 baseline, through the use of alternative fuel in alternative fuel vehicles and improvements in fleet fuel efficiency. Title V, Sec. 501 of EAct also applies to alternative fueled, light duty private motor vehicles, with a compliance scale based on the year. This is another example of a previous administration's work that will impact the NEP implementation, making the Bush administration look good.

In July 1995, a *National Energy Policy Plan* (NEPP) was generated by the DOE and included a chapters such as "Increase the Efficiency of Energy Use," "Develop a Balanced Domestic Energy Resource Portfolio," "Invest in Science and Technology Advances," and short chapters on "Reinvent Environmental Protection," and "Engage the International Market." The chapter on the domestic energy portfolio had only a short section on "Renewable Energy: Increasing Long-Term Investments" along with five other sections on coal, nuclear, gas, oil, and electricity. In all, the 1995 DOE NEPP showed a less responsible attitude toward affecting change in the energy landscape than when the DOE was formed. Most noticeably, it ignored the placement of major emphasis on the development and commercial use of solar, geothermal, recycling and other technologies utilizing renewable energy resources, as required by the Congressional Statement of Purpose for the DOE (42 USC Sec. 7112). The NEPP also seemed to circumvent the 1992 EAct by not preparing as part of the energy plan, the strategy to increase the renewable resource energy production by 75 percent over 1988 levels by the year 2005, nor the strategy to reduce the nation's oil consumption by 5 percent to 35 percent by the year 2005.

In 1997, Secretary Pena conducted a series public hearings throughout the country to collect opinions on the DOE energy policies. Showing the acknowledgment of the content of the public contribution, the DOE summarized most of them in the Appendix of

the energy plan publication. In 1998, the DOE produced an ambitious and progressive, 63-page *Comprehensive National Energy Strategy* (CNES), which only achieved 35% of its goals, as analyzed by Integrity Research Institute (*Energy Crisis*, IRI, 2000) but at *least cited specific goals*. Each chapter, for example, was labeled as a Goal:

- I. Improve the efficiency of the energy system
- II. Ensure against energy disruptions
- III. Promote energy production and use in ways that respect health and environmental values
- IV. Expand future energy choices
- V. Cooperate internationally on global issues

Within each chapter devoted to the above Goals, one or two specific Objectives were used as section headings, such as, “Significantly increase energy efficiency in the transportation, industrial, and building sectors by 2010.” Finally, under each boldface Objective, four or five Strategies were cited and discussed in detail, such as, “Design a domestic greenhouse gas emission trading system that will help meet binding emission targets in the most cost-effective way” (with an Appendix discussing the Kyoto Protocol) and “Improve the efficiency of energy use in Federal buildings” (with an Executive Order 12902 already issued for 30 percent reduction by 2005). It can be suggested that the Clinton administration may have been the most determined to work with the DOE to effect change in national energy consumption since the formation of the DOE. However, the Secretary Pena only lasted one year before Secretary O’Leary replaced him. His attitude regarding Section 801 of the law, in 1998, apparently was not overly concerned even though the DOE Energy Information Administration (EIA) had projected diverging demand and supply curves for oil into the next two decades:

“The President, the Department, the Congress, and the American people have all found this regular planning process useful, not only when energy prices have sky-rocketed, as was the case when the first policy plan was due in 1979, but also in times like today, when energy supplies are abundant and affordable. Although there appears to be no energy crisis now, serious energy issues remain to be addressed...” (*Comprehensive National Energy Strategy*, April, 1998, www.hr.doe.gov/nesp/cnes.html).

The DOE Organization Act provisions, spawned from the inroads accomplished by courageous ERDA, give the American public an important stake in the energy planning process at a time when energy should become a top national priority. The American people have a right to participate in the adoption of a national energy policy. However, by electing officials to head our government who are not concerned with the letter of the law, the public interest is often compromised. For example, it is well-known that G. W. Bush, while governor of Texas, regularly violated EPA standards within his state and that he responded to government warnings by requesting that the EPA change its statutes! Today, examples of President Bush’s illegal trend continue with his calling for the abrogation of the ABM treaty, the roll-back of the minimum required energy efficiency standards of central air conditioners now required by law, and his refusal to comply with GAO demands for the Energy Task Force documents, *until forced to by court order*.

DOE Deceives the Public with Meetings Too Late for the NEP

The Bush-Cheney Energy Task Group also violated the law by refusing to conduct any public hearings prior to the formation of the National Energy Policy (NEP) publication.

The NEP recommended a review of current funding and historic performance of the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) programs and so, to avoid public outcry and facilitate this review, Department of Energy senior officials received public comments on the programs in seven regional meetings during the month of June 2001, *a month after the NEP was finished and not subject to change*. The opinions therefore, would never reach the House or Senate committees where legislation is drafted. However, the DOE officials cleverly misled the public by posting their website, a press release of the meeting notice as,

“DOE to Hold Public Meetings Regarding the National Energy Policy

June 5, 2001

U.S. Department of Energy Announcement of Public Meetings”

However, when the meeting finally took place, it was clear that only the small DOE Office of Energy Efficiency and Renewable Energy, with its limited budget, was being addressed, as suggested by the already finished NEP, to implement one of the 105 NEP suggestions. Note the subtle change in the meeting title for one of the presentations:

“UNITED STATES

DEPARTMENT OF ENERGY

PUBLIC HEARINGS

NATIONAL ENERGY POLICY REVIEW OF DEPARTMENT OF ENERGY'S OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY PROGRAMS”

Still, many public officials participated in the meetings, such as the New Jersey Office of Ratepayer Advocate, who recommended changes to the NEP like a “Renewable Portfolio Standard for electric suppliers” that New Jersey already has statewide and “drastically increased funding for solar energy or photovoltaics.” Both of these suggestions were, of course, too late to have any effect on the NEP or Congressional legislation.

The EERE funds research, development, demonstration and deployment (RDD&D) of affordable, advanced energy technologies and practices. This effort was organized around five energy sectors—(1) buildings, (2) industry, (3) transportation, (4) power generation and delivery, and (5) Federal government facilities and are incorporated into 31 programs. Comments addressed: (1) the objectives of the current energy efficiency and renewable energy research, development, demonstration and deployment programs, (2) suggested potential objectives for future programs, (3) implementation of current and future programs, and (4) whether these Federal programs are achieving intended objectives (ref. DOE-EIA Press Release, <http://www.eia.doe.gov>).

Implementation of National Energy Policy Begins with a Strategic Review of Energy Efficiency R&D Programs

Secretary of Energy Spencer Abraham made a quick start of DOE implementation of the President's National Energy Policy by directing the Office of Energy Efficiency and Renewable Energy to undertake a strategic review of its energy efficiency research and development programs. This is the first recommendation of the National Energy Policy to be implemented since it was announced.

“The President offered the American people a balanced and comprehensive plan to address our nation's energy challenges,” Secretary Abraham said. “With energy demand outpacing supply, it's also clear that the National Energy Policy is urgently needed.

That's why we are moving swiftly at the Department of Energy to implement key recommendations contained in the plan. Today we are announcing a program review that highlights the balance in the President's policy. The Energy Department researches and develops energy-saving technologies for energy-efficient lighting, windows and more fuel-efficient cars and trucks," said Secretary Abraham. "This review will identify ways to improve the lives of Americans through energy efficiency while streamlining our



programs and saving taxpayer dollars. I welcome the public's input in this comprehensive review."

The President's energy policy recommended a review of current funding and historic performance of DOE's energy efficiency research and development programs.

Secretary Abraham will propose appropriate funding of those research and development programs that are found to be performance-based and are modeled as public-private

partnerships. The review will evaluate past performance and identify ideas for future public-private partnerships. This review will complement a current National Academy of Sciences (NAS) study. (DOE-EIA)

USEA - Conference on Implementing the NEP

In December 2001, more than 100 people attended an all-day conference in Washington, where they discussed how some of those NEP challenges—changed risk profiles, technical and craft labor shortages, and project financing and siting constraints—are limiting the industry's ability to develop and deliver the energy critical to this country's security and economic growth. The conference, called "Implementing a National Energy Strategy: Breaking Down the Barriers," was sponsored by the American Council of Engineering Companies, The McGraw-Hill Companies, the American Society of Mechanical Engineers (ASME), and the United States Energy Association (USEA).

The goals of all four conference sessions were the same: to underscore and investigate the policy and structural issues that present undue burden and cost to the advancements that U.S. energy infrastructure desperately needs. Panelists included a congressional aide, leaders and executives of architect/engineering firms, electric utilities and energy retailers, industry associations, financial institutions, and equipment suppliers. This author was in attendance at the USEA NEP Implementation Conference, which was the only national meeting to address the problems of the NEP.

Although there was not always unanimous agreement, a majority of participants voiced concern that despite the importance of energy to America's economic security, the prospects are quite poor for a comprehensive implementation of a nationwide solution to the growing energy crisis any time soon. A more likely outcome, said most panelists, is a hodgepodge of narrowly focused bills, rather than broadly based policy planning and legislation. For example, it was mentioned at the conference that the US regulatory system does not presently reward improved efficiency. A bill could address this oversight. The British system looks at the price charged for the electricity generated and encourages improvements to efficiency. With deregulation, a speaker emphasized, today's utilities have no incentive to invest in transmission lines. Therefore, the DOE is intending to make the nation's transmission infrastructure a top priority.

Llewelyn King, Publisher of *Energy Daily* newsletter, pointed out that the Hoover Dam is an impossible project with today's regulations. He says it is a rich country problem. Siting any big project, it was pointed out, gives way to the small, vocal minority who may be affected even though the majority support it. He gave examples where one single complaint sent in by an irate taxpayer stopped an entire project from going forth. Energy policy in such a high risk environment is more like politics. Capitol cost recovery, we were told, is a problem in all countries but in the US it is one of the worst if compared internationally (12th out of 14). A 1% increase in the GNP for comparison, represents a 0.6% increase in the cost of energy. Without central control for the Federal Energy Regulatory Commission (FERC), a 5000 MW transmission line into NY can easily put an on-site 5 gigawatt power NYC plant out of business. However, distributed generation (on-site) relieves the need for transmission line cost.

We were told that energy is a product that is vilified and equated to something called "juice" in street language. One contractor complained that he expected \$500/kW as his installed cost for a electricity generating power plant but instead, when the project was completed, found his installed cost was \$1500/kW which was over-budget. Engineering efforts represent 6% of the total installed cost of a power project, in general, according to the contractors, but usually can be 1/3 of the time. Construction costs are very competitive and often below cost, just in order to "get a share of the market." The contractors complained that prototypical equipment causes liability and requires efficacy insurance to be acquired. One example of the time required to built is the 500 MW combined cycle power plant, which takes, on the average, more than two years to complete. Often, we were told, they cannot force the utility to show up on time for the permit and the transmission interconnect. Even before construction begins, there may be a dozen plants presently under siting procedures and one receives the permit to get sited. An example is NY City where there are only temporary Certificate of Operations that are available, since the siting procedure is three years behind schedule. Often the contractor does not even receive a signed contract before they start, only after they are finished, to reduce liability for the investor.

Another issue that was raised concerned how climate change has affected coal as a fuel the most. A study that was done by panelist, Dan Arvizu, Senior Vice President of the consulting firm, CH2M Hill, found that out of eleven western states, only one spot in the northern Nevada and southern Utah area was available for siting a coal-burning power plant. Ironically, however, older coal-burning power plants still sell electricity today at the same price as clean ones.

Today, panelists explained, 90% of new power plants are using natural gas but diversity is suffering. This could be an important factor for the future, not to mention the climate impact. Concerning diversity, nuclear power plants have increased their total output by 23 GW since their inception, however, there are only about ten left in the country. In the near future, Canada may sign the Kyoto Protocol which would affect their ability to export natural gas, the preferred fuel for electricity generation, to the US. The price will be more volatile as a result. Getting rid of volatility will involve more cost. As a comparison, natural gas surprisingly sells on the wholesale market for only \$2 per million Btu.

The inability of Congress to address some of the long-term energy challenges facing this country is not being duplicated by energy industry professionals. However, the legislation that is currently in place, for example, prevents the FERC from gaining a right-of-way (ROW) for a transmission line through a state without their permission. What is worse, as the state is asked to give up thousands of acres of land, there is no present

mechanism in place to compensate them for the ROW service. Transmission is a big issue, the panelists emphasized. David Owens, Executive Vice President of Edison Electric Institute, said that FERC controls certificates and pipelines but not transmission lines.

Today, everyone wants the electricity transmission grid to be a superhighway that everyone can use but they are not designed that way. States say that there is no local benefit for granting an ROW to a new transmission line. FERC presently cannot overcome the states' opposition and has no eminent domain authority. Even with enhancements to the existing transmission lines, new lines are needed. David said that he wants to see transmission enhancement expedited, along with FERC certification. An example of solving the human impact and state objections came from France, where local residents receive free electricity for allowing the construction of a power plant in their area.

People in this country, we were told, take electricity for granted, just like air. However, only one third of the needed power plants are being built. Many other legal bottlenecks were explored at the conference that prohibit a fantasy like Cheney's "two power plants per week" from ever being implemented. David Owens, Executive Vice President of Edison Electric Institute, on the last panel discussion, "Siting Energy Production and Delivery Facilities," addressed my pressing question of why the NEP was not discussed all day at the conference. He replied to the effect that "the NEP is dead." This was understood to mean that the aggressive power plant installation schedule, for the next twenty years, was impossible with today's regulations. With problems of siting, transmission, certification, regulations, etc. the old idea of centralized power is strangulated. Llewelyn King said we are using 19th century technology for transmission. He said a paradigm shift is needed for new technology. "Greater acceleration in research and development is needed." However, with a sluggish economy, money for R & D will be down. There are "monster infrastructure problems" within the US versus developing countries.

DOE Implements NEP Electricity Transmission Infrastructure Study

President George W. Bush unveiled his National Energy Policy (NEP) on May 17, 2001. Included in the NEP were 105 recommendations to produce more reliable, affordable and environmentally clean energy. One of the recommendations directed the Secretary of Energy to examine the benefits of establishing a national electrical grid, identifying major transmission bottlenecks and remedies to remove them. From our research and phone calls to many departments of the DOE, it appears that this study is the only ongoing response to the NEP that the DOE is presently engaged in. Probably because of the reasons cited in Section II, there is the lack of urgency evident throughout the NEP, and no multi-directional DOE approach, so prominent in the Clinton administration.

The National Transmission Grid Study (NTGS 2001) is designed to identify the major transmission bottlenecks across the U.S. It examines both the technical and economic issues resulting from these transmission constraints and provide innovative solutions to reverse these trends. A 21st century transmission super highway that utilizes new technology to ensure reliability will be the driver that will serve the growing needs of our economy. A vibrant and reliable transmission system is essential to lowering the cost of electricity for customers all across the country. The NTGS 2001 will recommend regulatory and market based approaches that will stimulate new investment in our interstate bulk power transmission system. The NTGS 2001 team works with our nation's Governors to ensure that State's views are heard in the process of developing this study.

Background

Competition in the wholesale electricity market has changed the way the Nation's electric grids are being utilized. Transmission systems that were historically designed to move power within small utility service territories are now frequently stressed to their limits by the movement on a regional basis of large blocks of power. These transfers occur and vary daily and respond to price fluctuations, weather patterns and profitable trading opportunities. These new patterns of power flow, continued electricity demand growth, and the lack of investment in transmission facilities have resulted in major transmission congestion across the country. Removing major transmission bottlenecks will help unleash the economic benefits that are achieved through efficient and competitive electricity markets. A vibrant wholesale market that will allow electricity to flow freely to multiple load centers will reduce costs to consumers and invite more investment in transmission.

Unfortunately, investments in the transmission grid have diminished significantly in recent years. Investment barriers include lack of regional integrated planning, difficulty in siting, and uncertainty regarding investment risks and returns. Recently the Federal Energy Regulatory Commission (FERC) called for the development of five Regional Transmission Organizations (RTO's). These RTO's, once completed, will formalize the regional planning process and efficiently manage the growth of the transmission system. In order to determine where investment is needed, the NTGS 2001, will model major transmission paths and identify the constraints that lead to high electric costs. These transmission bottlenecks can then be eliminated in a collaborative fashion between the states, regions and the federal government.

These upgrades will, in the end, benefit the public by allowing suppliers to compete for markets, thus leading to lower prices. Additional investments in transmission facilities and technology will increase the reliability of our electric system while ensuring that we are developing the electric superhighway needed in the 21st Century. Transmission investments go far beyond acquiring rights-of-way and building new power lines. State-of-the-art metering and telemetry, upgrading the control centers computing capabilities and installing new technology will also be necessary if consumers are to fully realize the efficiency gains from competitive wholesale electric markets.

Task Force on National Electricity Infrastructure

With one more task force, Governors and Bush Administration are partnering to revitalize the ailing electricity grid across the country. Secretary of Energy Spencer Abraham and Michigan Governor John Engler established a blue-ribbon Task Force on Electricity Infrastructure that focused on state policies and regional issues that impact the nation's energy sector. The Task Force was identified as a high priority for Governor Engler, who is the new Chairman of the National Governors Association (NGA). The Task Force is sponsored jointly by the Department of Energy (DOE) and the NGA, through its Center for Best Practices, and examined current state and federal policies and concentrating on three key areas:

- Identification of opportunities to streamline generation siting policies and processes, consistent with sound environmental policy, to ensure that generation capacity is in place to facilitate competitive markets;
- Identification of regulatory and institutional barriers to the siting of new transmission infrastructure, and development of a series of recommendations to help states break the siting logjam; and

- Identification of policies and practices that are necessary to support regional electricity markets, and outline principles and parameters for multi-state collaborative approaches to address regional infrastructure issues.

Secretary Abraham has indicated that the Task Force was a key initiative aimed at continuing the implementation of President Bush's National Energy Policy. "This effort is evidence of our recognition of the unique energy concerns facing different regions of the United States. By working with the National Governors Association, we hope to determine how to better serve the needs of diverse areas of the country." Secretary Abraham added that this effort complements other significant activities already underway within that Department of Energy, such as the recent announcement on California's Path 15, that also is aimed at implementing the recommendations of the President's energy plan on electricity restructuring.

Governor Engler stated that the Task Force would be a valuable resource for state officials dealing with energy issues. "This Task Force will provide Governors as well as other state energy policymakers with specific recommendations, 'best practices' information, and other assistance designed to facilitate our states' contribution to a robust national electricity infrastructure." The Task Force is developing research papers, conducting executive policy forums, providing targeted assistance to individual states, and preparing interim and final reports throughout the project. The Task Force includes policy advisors, state utility commissioners, and directors of state energy offices and other state officials, and is supported by staff from the NGA's Center for Best Practices. Representatives from the Department of Energy and other federal agencies, industry, academia, and non-governmental organizations are contributing additional expertise through participation on Advisory Committees.

Secretary of Energy Spencer Abraham has recommended ways to facilitate investment in the Nation's transmission infrastructure to improve reliability and reduce electricity costs to consumers. The completed recommendations contained in [the National Transmission Grid Study](#) were developed in response to the President's National Energy Policy directive to Secretary Abraham to study the Nation's transmission system, identify transmission bottlenecks and identify measures to eliminate those bottlenecks. "Our objective is simple: to provide our citizens with a reliable supply of electricity at the lowest possible cost," Secretary Abraham said in remarks before a Secretary of Energy Advisory Board (SEAB) public meeting. "We will work to unleash innovation and strengthen our markets to allow entrepreneurs to develop a more advanced and robust transmission system that meets growing energy demand in the years ahead."

Over the past 10 years, competition has been introduced into wholesale electricity markets with the goal of reducing costs to consumers. Today, wholesale electricity sales are supposed to save consumers nearly \$13 billion annually. However, the Nation's outdated transmission system was not designed to support today's regional, competitive electricity markets. Investment in the transmission system has not kept pace with the growth in generation and the increasing demand for electricity. Transmission bottlenecks threaten reliability and cost consumers hundreds of millions of dollars each year.

Executive Summary Of National Transmission Grid Study Report

The U.S. electricity transmission system is an extensive, interconnected network of high-voltage power lines that transport electricity from generators to consumers. The transmission system must be flexible enough, every second of every day, to accommodate the nation's growing demand for reliable and affordable electricity. The transmission system was built over the past 100 years by vertically integrated utilities

that produced and transmitted electricity locally. Small interconnections between neighboring utilities existed, but they were created to increase reliability and share excess generation.

Over the past 10 years, we have introduced competition into wholesale electricity markets to lower costs to consumers by spurring needed investments in generation and increasing the efficiency of operations. Today, our transmission system acts as an interstate highway system for wholesale electricity commerce. There is growing evidence that the U.S. transmission system is in urgent need of modernization. The system has become congested because growth in electricity demand and investment in new generation facilities have not been matched by investment in new transmission facilities.

Transmission problems have been compounded by the incomplete transition to fair and efficient competitive wholesale electricity markets. Because the existing transmission system was not designed to meet present demand, daily transmission constraints or “bottlenecks” increase electricity costs to consumers and increase the risk of blackouts. Eliminating transmission constraints or bottlenecks is essential to ensuring reliable and affordable electricity now and in the future. The Department of Energy (DOE) conducted an independent assessment of the U.S. electricity transmission system and found that:

- Our U.S. transmission system facilitates wholesale electricity markets that lower consumers’ electricity bills by nearly \$13 billion annually.
- Despite these overall savings, interregional transmission congestion costs consumers hundreds of millions of dollars annually. Relieving bottlenecks in four U.S. regions (California, PJM, New York, and New England) alone could save consumers about \$500 million annually. Savings could be even greater because DOE’s analysis does not capture all of the factors, such as impacts on reliability, that result from bottlenecks.
- Introducing advanced transmission technologies and improved operating practices, siting generation closer to areas where electricity is needed, and reducing electricity use through targeted energy efficiency and distributed generation could all help reduce transmission congestion.
- Better utilizing existing facilities can help delay the need for new transmission facilities, but it cannot avoid construction of new transmission facilities entirely.

Much work is needed to address transmission bottlenecks and modernize our nation’s transmission systems. As a percentage of total energy use, electricity use is growing. This reflects the transformation of our economy to an increasingly sophisticated, information-based economy, one that relies on electricity. Electricity, though, is not a commodity that can be stored easily. Our transmission infrastructure is at the heart of our economic well-being.

Imagine an interstate highway system without storage depots or warehouses, where traffic congestion would mean not just a loss of time in delivering a commodity, but a loss of the commodity itself. This is the nature of the transmission infrastructure. That is why bottlenecks are so important to remove and why an efficient transmission infrastructure is so important to maintain and develop.

Transmission Study Recommendations

The National Transmission Grid Study report outlines 51 recommendations that will help ensure a robust and reliable transmission grid for the 21st century. The following are six general recommendations:

_ First, we must increase regulatory certainty by completing the transition to competitive regional wholesale markets.

_ Second, we need to develop a process for identifying and addressing national-interest transmission bottlenecks.

_ Third, we can avoid or delay the need for new transmission facilities by improving trans-mission system operations and fully utilizing our existing facilities. Regional planning processes must consider transmission and non-transmission alternatives when trying to eliminate bottlenecks.

_ Fourth, opportunities for customers to reduce their electricity demands voluntarily, and targeted energy-efficiency and distributed generation, should be coordinated within regional markets.

_ Fifth, ensuring mandatory compliance with reliability rules must include enforceable penalties for non-compliance that are commensurate with the risks that the violations create.

_ Sixth, DOE will take an increased leadership role in transmission R&D and policy by creating a new Office of Electricity Transmission and Distribution.

Action is needed now to put this study's recommendations in place. Private industry and federal, state, and local governments must work together to ensure that our electricity transmission system will meet the nation's needs for reliable and affordable electricity in the 21st century. Some of the most important specific recommendations (out of the 51) include:

1. In an open public process, DOE will assess the nation's electricity system every two years to identify national-interest transmission bottlenecks.
2. Regional Transmission Organizations (RTOs) should be responsible for maintaining the reliability of the grid and ensuring that transmission bottlenecks are addressed.
3. DOE will work with the Federal Energy Regulatory Commission (FERC) and stakeholders to develop objective standards for evaluating the performance of RTOs and will collect the information necessary for this assessment.
4. DOE will work with National Governors Association (NGA), regional governors' associations, National Association of Regulatory Utility Commissioners (NARUC), and other appropriate state-based organizations to promote innovative methods for recovering the costs of new transmission-related investments. These methods should consider situations where rate freezes are in effect and also examine incentive regulation approaches that reward transmission investments in proportion to the improvements they provide to the system.
5. Entrepreneurial efforts to build merchant transmission lines that pose no financial risk to ratepayers and that provide overall system benefits should be encouraged.
6. DOE, working with FERC, will continue to research and test market-based approaches for transmission operations, including congestion management and pricing of transmission losses and other transmission services.

7. DOE will continue to work with NGA, regional governors' associations, and NARUC to remove regulatory barriers to voluntary customer load-reduction programs, and targeted energy-efficiency and distributed-generation programs that address transmission bottlenecks and lower costs to consumers.
8. Federal legislation should make compliance with reliability standards mandatory.
9. Penalties for noncompliance with reliability rules should be commensurate with the costs and risks imposed on the transmission system, generators, and end users by noncompliance. Penalties collected should be used to reduce rates for consumers.
10. DOE will work with FERC, state Public Utility Commission (PUC), and industry to ensure the routine collection of consistent data on the frequency, duration, extent (number of customers and amount of load affected), and costs of reliability and power quality events, to better assess the value of reliability to the nation's consumers.
11. FERC and DOE should work with states, pertinent federal agencies, and Native American tribes to form cooperative regional transmission siting forums to develop regional siting protocols.
12. DOE will work with NGA, regional governors' associations, NARUC, and other appropriate state-based organizations to develop a list of "best practices" for transmission siting.
13. All federal agencies with land management responsibilities or responsibilities for oversight of non-federal lands should assist FERC-approved RTOs in the development of transmission plans.
14. Congress should grant FERC limited federal siting authority that could only be used when national-interest transmission bottlenecks are in jeopardy of not being addressed and where regional bodies have determined that a transmission facility is preferred among all possible alternatives.
15. DOE will work with industry to develop innovative programs that fund transmission-related research and development, with special attention to technologies that are critical to addressing transmission bottlenecks.
16. DOE and the national laboratories will continue to develop cost-effective technologies that improve the security of, protect against, mitigate the impacts of, and improve the ability to recover from disruptive incidents within the energy infrastructure.
17. DOE will continue to provide training in critical infrastructure protection matters and energy emergency operations to state government agencies and private industry.
18. DOE will create an Office of Electric Transmission and Distribution.

(Ref: The National Transmission Grid Study Report and Issue Papers (Release No. PR-02-080) <http://www.ntgs.doe.gov> and <http://www.energy.gov/NTGS/reports.html>).

DOE Vision 21 Power Plant of the Future

Another one of the 105 recommendations of the NEP is, as seen in Section II, to enact "multi-pollutant" legislation to...reduce emissions of sulfur dioxide, nitrogen oxides, and mercury from electric power generators. The ongoing DOE "Vision 21" power plant of the future, a throw-over from the Clinton administration, is a prime example of a DOE project designed to exceed the NEP recommendation.

Under development by the Department of Energy's Office of Fossil Energy, the concept envisions a virtually pollution-free energy plant. Unlike today's single purpose power plants that produce only electricity, a Vision 21 plant would produce multiple products - perhaps electricity in combination with liquid fuels and chemicals or hydrogen or industrial process heat. It also would not be restricted to a single fuel type; instead, it could process a wide variety of fuels such as coal, natural gas, biomass, petroleum coke (from oil refineries), and municipal waste. It would generate electricity at unprecedented efficiencies, and coupled with carbon sequestration technologies, it would emit little if any greenhouse gases into the atmosphere.

Revolutionize the Power and Fuels Industry

Vision 21, if successful, could revolutionize the power and fuels industry within the next 15 years. The approach is to develop a suite of technology modules that can be interconnected in different configurations to produce selected products. These modular facilities will be capable of using a multiplicity of fuels to competitively produce a number of commodities at efficiencies greater than 60 percent for coal-based systems and 75 percent for natural gas-based systems with near-zero emissions.

Vision 21 builds on a portfolio of technologies already being developed, including low-polluting combustion, gasification, high efficiency furnaces and heat exchangers, advanced gas turbines, fuel cells, and fuels synthesis, and adds other critical technologies and system integration techniques. When coupled with CO₂ capture and recycling or sequestration, Vision 21 systems would release no net CO₂ emissions and have no adverse environmental impacts.

Many of the Vision 21 activities complement and extend focused activities to achieve 2nd generation pressurized fluidized bed combustion and integrated gasification combined cycle. For example, hot gas particulate filtration, hot gas sulfur/alkali control, and air separation are critical elements to one or both. Vision 21 addresses gas separation and cleanup, but extends the development effort to:

- increasingly efficient and cost-effective measures for particulate and sulfur/alkali control and air separation; and
- measures dealing with a broader range of gases, such as hydrogen and CO₂.

Advanced gas separation and cleanup are critical to achieving hybrid systems, fuel and product flexibility, and carbon sequestration. Hybrids and fuel and product flexibility offer the potential for major improvements in cost and performance. And effective CO₂ capture is a prerequisite to carbon sequestration.

Hybrid System

A hybrid system showing great promise is integration of gasification with a fuel cell. Fuel cells offer very high efficiencies, with emerging fuel cells having 60 percent efficiency. These emerging fuel cells also produce very high-temperature exhaust gases that can either be used directly in combined-cycle or used to drive a gas turbine. IGFC (fuel cell) hybrids have the potential to achieve up to 60 percent efficiency and near-zero emissions. Moreover, the concentration of CO₂ lends itself to removal by separation or other capture means. Such systems require that the syngas derived from gasification be free of contaminants for use in the fuel cell, or that the hydrogen be separated from the syngas (hydrogen is the fuel element for the fuel cell).

Fuel flexibility enables the use of low-cost indigenous fuels, renewables, and waste materials. Use of renewables and wastes contributes to solving environmental problems

as well as reducing operating costs. The challenge is in developing effective feed mechanisms for these alternative fuels, establishing effective operating parameters, and providing the means to achieve the operating parameters and to control any new pollutants that might be formed. For advanced, high-performance gas turbines, and hybrids incorporating advanced turbines/fuel cells, fuel flexibility requires research to address combustion of low-Btu gases and maintaining low-NO_x emissions at increasingly higher temperatures.

Product flexibility allows power suppliers to supplement revenues by designing plants to site- or region-specific markets for high-value by-products. Many chemical and fuel processes, however, require nearly contaminant-free syngas and warrant improvements to enhance product quality.

Carbon Sequestration

Carbon sequestration is the ultimate solution to stabilizing global carbon emissions. A prerequisite to carbon sequestration is carbon capture, which for power systems is CO₂ capture. Power system developments are moving toward higher efficiency to lower CO₂ emissions on a per-Btu basis and toward more concentrated CO₂ emission streams through oxygen-rather than air-based gasification and combustion. Air separation efforts support the move to oxygen-based systems. Ultimately, CO₂ must be captured either through chemical or physical separation methods.

Vision 21 is addressing the challenges outlined above through a cooperative effort involving industry, universities, and National Laboratories. It includes fundamental research in materials science, novel concept evaluation at bench-scale, and process verification at pilot-scale. Facilities such as the GPDUnit at the National Energy Technology Laboratory and the Power System Development Facility at Wilsonville, Alabama, along with industry/National Laboratory/university facilities, are being enlisted to address these challenges. (ref: www.fe.doe.gov/coal_power/vision21)

DOE Energy Efficiency R&D Programs

DOE's Energy Efficiency ongoing programs continue to make important contributions toward increasing the efficiency of buildings, appliances, vehicles and industries across the United States.

- DOE recently documented that twenty of its most successful energy efficiency projects have, over the past twenty years, saved the nation 5.5 quadrillion BTUs¹ of energy, worth about \$30 billion in avoided energy costs.² The cost to taxpayers for those activities over the past decade was \$712 million, less than three percent of the savings, and the savings are increasing every year.
- The DOE's Building America and Industries of the Future programs have successfully introduced modern efficiency technologies to the building industry and manufacturing sectors where the pace of innovation has been historically slow.
- Last year, U.S. automakers participating in the Partnership for a New Generation of Vehicles unveiled three prototype full-size passenger cars that achieved 70 to 80 miles per gallon. The incremental cost of producing high-mileage alternatives has been dramatically reduced, prompting U.S. automakers to announce that fuel-efficient hybrid electric vehicles will soon be available in showrooms.
- In 1999, DOE's industry programs were instrumental in achieving energy cost savings of 189 trillion BTUs and \$820 million. Cumulative energy savings of more

than 140 completed and tracked projects and programs is approximately 1.6 quadrillion BTUs of energy, representing production cost savings of \$6.5 billion.

- DOE building code development, adoption, and support activities saved about 0.5 quadrillion BTUs of energy or \$3.5 billion in energy costs through 2000.

These ongoing DOE programs, all started before the present administration took hold, show the significant progress that goal-oriented research and development can be. They deserve greater acknowledgment from the Bush administration, since many of them help NEP implementation. (Ref: The Energy Foundation, www.ef.org/national).

President Bush's FY2003 Budget

An important issue in the NEP implementation is the Bush administration's 2003 annual budget, which sets monetary guidelines for Congress to work with. It is regarded as an important yardstick to judge the seriousness of any NEP provisions. We saw in Section II the comparison of the House and Senate bills for an energy legislation package (See also the commentary on Senate bill below). In the administration's budget for Fiscal Year 2003 (FY2003), energy efficiency research, development, and deployment programs (RD&D) at DOE will decline modestly (1 percent) from current levels in the upcoming year. However, within this overall context, the DOE budget includes significant increases for two programs and cuts in many other programs.

The Bush Administration has avoided a repeat of last year's request to cut nearly 30 percent from DOE's RD&D programs in 2002, a request that was largely ignored by Congress. While the President's support for maintaining efficiency programs is welcome, the cuts in many of the non-weatherization programs are troubling. Furthermore, the *2003 budget fails to keep pace with the increases in efficiency investment recommended by the President's Committee of Advisors on Science and Technology (PCAST) in 1997. This doesn't make sense* because PCAST made it clear that they recommended a doubling of the program budgets between FY1998 and FY2003. Furthermore, PCAST conservative estimate of the payback for this investment was a 40 to 1 return for the nation! (ref. *Fed. Energy R & D for the Challenges of the 21st Century*, PCAST, Executive Office of the President, Nov., 1997) The only rationalization for ignoring such a huge payback is that, if accurately projected, such a 40 to 1 decrease in fossil fuel use would impact the heavily-favored petroleum industry, which probably created disfavor with the Bush-Cheney Task Force.

The big winner in the President's budget is the low-income weatherization program. This program increased from \$153 million in 2001 to \$230 million in 2002. The President is proposing a further 20 percent increase (\$43 million) in 2003. Another significant winner is the Federal Energy Management Program (FEMP), which funds efficiency improvements in federal facilities. This program is slated to go up by \$6.2 million (25 percent).

In the 2003 budget, DOE's buildings programs receive \$409 million. However, \$277 million of this total go toward weatherization assistance for low-income residences, leaving 12.4 percent less for other programs than they received in 2002. Funding is up substantially for DOE's portion of ENERGY STAR®, work on advanced lighting systems, and work on "road maps" (program plans). Funding also will be up modestly for work on energy efficiency standards, Building America, and commercial building integration. State energy programs will decline, receiving \$39 million, which will bring them back to 2001 levels and eliminate a \$7.3 million increase these programs received in 2002. Outside of lighting, most RD&D programs are cut, including appliances, space

conditioning and refrigeration, and building envelope research (e.g., windows and insulation). Grants to states for updating and implementing state building codes were cut 57 percent from 2001 to 2002; the 2003 budget proposes to let these cuts stand.

With regard to vehicles research, the Bush administration has refashioned the DOE previous “Partnership for a new Generation of Vehicles” into a new partnership known as FreedomCAR. While the program is intended to develop technologies that will ultimately result in vehicles requiring no petroleum and emitting no harmful pollutants or greenhouse gases (most notably, fuel cells), the program cuts back on support for technologies that can improve fuel economy in the near term. In the 2003 budget, materials technology research take a major cut; advanced combustion technologies (aimed at reducing emissions from diesel engines), hybrid systems, and Clean Cities (a program that promotes use of clean, efficient vehicles) will also be reduced. These cuts affect both light- and heavy-duty vehicle efficiency programs. Hydrogen research, housed in the Power Technologies Program, receive a substantial increase, some of which will support FreedomCAR. However, Industrial Technologies largely are maintained, but with significant reductions in three areas. One specific “Industries of the Future” program—the Petroleum Industry—will be eliminated, while two cross-cutting industrial programs—Combustion and Inventions and Innovations—will be significantly reduced.

U.S. Environmental Protection Agency (EPA)

At EPA, funding for energy efficiency programs administered through the Office of Atmospheric Pollution Prevention are proposed to be largely flat for the coming year. The EPA portion of ENERGY STAR, though cited in the NEP, will be maintained at approximately current levels. Due to Congressional “earmarks,” the program received a modest cut (\$2.4 million, or 4.6 percent) in 2002. If the earmarks are ended in 2003, the Administration proposal will result in a modest (3 percent) funding increase from 2002 levels. If the earmarks are continued, the program could fall modestly, as the Administration’s request for 2003 is 2 percent lower than their request for 2002.

However, this budget is disappointing in light of all the attention given to the ENERGY STAR program in the President’s National Energy Policy. ENERGY STAR is a key plank in the President’s policy, but this plank is not backed up by any significant increase in funding. Therefore, we see a key problem with the Bush administration implementation of the NEP: the tax cut was clearly more important, which has forced Budget 2003 back into deficit spending.

Tax Incentives

On the revenue side of the President's budget, tax incentives for energy efficiency that were originally announced in the Bush-Cheney National Energy Plan were submitted to Congress once again. These consist primarily of investment credits for the purchase of hybrid and fuel cell vehicles and for investments in certain combined heat and power systems. Other energy efficiency tax credits included in the House-passed energy bill (e.g., for new and existing homes, stationary fuel cells, and real-time metering systems) are not included in the budget.

Conclusion

On balance, the Administration has maintained a diverse portfolio of energy efficiency research and deployment programs with its Budget for Fiscal Year 2003, although some promising programs are underfunded relative to the 2002 year’s budget. Furthermore, substantial opportunities for stepping up the most promising programs have been

missed. The level-funding approach to energy efficiency RD&D fails to account for the increasingly obvious hazardous implications for national security that result from the "business as usual" patterns of energy consumption in the United States. (ref: American Council for an Energy-Efficient Economy, www.aceee.org)

House and Senate Nearly Fail on Energy Issues

A major aspect of "implementing the NEP" is whether Congress will look beyond the lack of commitment on the part of the Bush-Cheney Energy Task Force with their voluntary, "faith-based" improvements in all of the major areas of energy use. The House bill (HR 4), for example, offers many of the same tax credits for new homes and existing homes that the Senate bill (S. 517) does, in spite of the fact that the Bush-Cheney NEP never bothered to include these important issues (see Table by ASE in Section II). The House bill also includes the same deduction for a 50% reduction in energy costs for commercial buildings and the same credit for highly efficient appliances that the Senate bill does (see Table by ASE in Section II), though the NEP completely leaves out any recommendations for these issues. The House bill also exceeds the total estimated revenue effect that the Senate bill has, while the NEP brings up a very poor third place (see Table by ASE in Section II). So the House and Senate bill exceed the expectations of the NEP in at least five major areas. The Senate bill added a mandate for 10% of the nation's electricity to come from renewable energy by 2020. Neither the House bill nor the NEP contain such a provision.

However, the Alliance to Save Energy, for example, gave the U.S Senate a "D+" for making a "pitiful showing" on energy efficiency in its major energy bill (S. 517). This evaluation may also approximately apply to the House bill as well. By a vote of 52-47, the Senate adopted an amendment offered by Sen. Tom Harkin (D-IA) which significantly weakened the bill's efficiency standards for central air conditioners.



"By voting for the Harkin amendment, the Senate voted for more power plants, more pollution, and more money out of consumers' pockets," said Alliance to Save Energy President David M. Nemptzow. "It's a sorry day when the Senate votes down such a common-sense provision." The Senate also rejected, 57-42, an amendment by Senators Tom Carper (D-DE) and Arlen Specter (R-PA) which would have required the Department of Transportation to reduce gasoline consumption by one million barrels of oil a day by 2015. "These two provisions would have protected the nation's economic security, bolstered the reliability of the electric system, saved consumers billions of dollars, and significantly reduced pollution," Nemptzow said.

"The Senate has failed on fuel economy, missing an important opportunity to save more oil than the U.S. currently imports from Iraq and Kuwait combined," Nemptzow continued. "The amendment was no substitute for the fuel economy provision stripped from the original energy bill. But in failing to rise to the challenge of our severe vulnerability to oil supply disruption, the Senate has failed the American people. "On energy efficiency, the Senate energy bill is redeemed only by its \$3 billion tax package, an increased authorization for energy efficiency programs, and new, tough energy efficiency requirements for federal buildings and facilities," Nemptzow said. The tax package includes tax credits for energy-efficient homes, washers, refrigerators, heating and

cooling systems, windows, and insulation, and a tax deduction for investment in efficient commercial buildings. The Senate joined the House in failing to provide a Public Benefits Fund that would have attacked energy waste in the electricity sector and reduced the need for construction of hundreds new power plants in the next 20 years. (Ref: www.ase.org/media/newsrel).

The Sierra Club has also noted that the Carper-Specter amendment to the Senate energy bill is a very important improvement. People expect at least the Senate to be more environmentally conscious and produce energy legislation to reduce America's oil consumption, besides promoting renewable energy. The Carper-Specter amendment would save 1 million barrels of oil per day by 2015, which is significant.

Key Long-Term Energy Issues for the DOE and the NEP to 2020

When looking at the DOE, Congress, and the NEP as three different leaders going in different directions, we can lose sight of the main ball game. The DOE continues to provide an invaluable service with the DOE Annual Energy Outlook 2002 (AEO2002). This annual publication provides an educated viewpoint of what the energy landscape will look like under a business-as-usual scenario. Over the past year, energy markets have been extremely volatile, with high prices for oil and natural gas and concerns for energy shortages earlier in the year giving way to an economic slowdown and lower prices following the September, 2001 terrorist attacks in the United States. Those events are incorporated in the short-term projections for the AEO2002 but long-term volatility in energy markets is not expected to result from their impacts or from the impacts of such future events as supply disruptions or severe weather. AEO2002 focuses on long-term events, including the supplies and prices of fossil fuels, the development of U.S. electricity markets, technology improvement, and the impact of economic growth on projected energy demand and carbon dioxide emissions through 2020. In the beginning of this Section III, we noted that the DOE predecessor, ERDA, began the first national energy plan with the same valuable perspective. By seriously taking the following data into consideration, better decisions can be made, knowing that the DOE AEO2002 represents the best anticipation of a business-as-usual outcome, unless changes are made.

The DOE AEO2002 projections assume a transition to full competitive pricing of electricity in States with specific deregulation plans. Other States are assumed to continue cost-of-service pricing. The projections include recent delays in restructuring plans in several States. Problems in California have slowed the trend to restructuring, and retail access in the State has been suspended. The projections include the contracts entered into by California to guarantee electricity supplies in the State, leading to higher electricity prices than in the Annual Energy Outlook 2001 (AEO2001). Increased competition in electricity markets is also represented through changes in the financial structure of the industry and efficiency and operating improvements.

World oil prices remained relatively high through most of 2001, largely due to actions by the Organization of Petroleum Exporting Countries (OPEC) and some non-OPEC countries to restrain oil production. U.S. natural gas prices achieved record levels in 2001 due to a cold winter and tight supplies caused by reduced drilling in response to low prices in 1998 and 1999. Electricity prices also reached record levels in California, as a result of restructuring difficulties, tight natural gas markets, low hydroelectric generation levels, and other generation problems. Energy prices began to decline later in 2001, however, in response to the slowing economy and more normal supply markets for natural gas and electricity.

Economic Growth

Although there was an economic slowdown in the United States in 2001, in the long term the U.S. economy, as measured by gross domestic product (GDP), is projected to grow at an average annual rate of 3.0 percent from 2000 to 2020, similar to the rate of 2.9 percent projected in AEO2001 for the same period. Most of the determinants of economic growth are similar to those projected in AEO2001, but there are some differences. For example, commercial floorspace is expected to increase at an average annual rate of 1.7 percent through 2020, as compared with 1.2 percent in AEO2001. The AEO2002 projection has a significant impact on energy demand in the forecast for that sector and is more consistent with recent historical trends.

Energy Prices

The average world oil price is projected to decline from \$27.72 per barrel in 2000 (2000 dollars) to \$22.48 per barrel in 2001, before beginning a gradual increase after 2002. In 2020, the projected price reaches \$24.68 per barrel as compared with \$22.92 per barrel projected in AEO2001, largely due to higher projected world oil demand. Because of the effectiveness of OPEC in managing oil production and the generally slow response of non-OPEC supply to higher world oil prices, projected prices in the years following 2002 remain higher than in AEO2001.

World oil demand is projected to increase from 76.0 million barrels per day in 2000 to 118.9 million barrels per day in 2020, higher than the AEO2001 projection of 117.4 million barrels per day, due to higher projected demand in the United States and developing countries, including the Pacific Rim and Central and South America. Growth in oil production in both OPEC and non-OPEC nations leads to the relatively slow growth of prices through 2020. OPEC oil production, according to the EIA, is expected to reach 57.5 million barrels per day in 2020, nearly double the 30.9 million barrels per day produced in 2000, “assuming sufficient capital to expand production capacity” and sufficient motivation to change their production schedule. However, this is probably the *most controversial, unfounded, and deceptive* prediction of the DOE AEO, designed to quell public anxiety. There are other experts, such as Dr. Dermot Gately, from NY University, who believe that since OPEC has not changed their oil production rate for the past three decades, they will not in the future. Dr. Gately presented his findings at the 2001 DOE Annual Energy Outlook Conference in Washington, DC. His position is that, since the revenue per barrel will not increase, there is “too little incentive for them to increase their output so rapidly.” His revealing “price per output” charts, at the end of Section III, contradicts the DOE and the International Energy Association misinterpretation of OPEC intentions. (ref: Mary Hutzler, DOE-EIA-AEO)

Non-OPEC oil production is expected to increase from 45.7 to 61.1 million barrels per day between 2000 and 2020, 1.7 million barrels per day higher than projected in AEO2001, due to higher projected production in the Caspian Basin, offshore West Africa, and Brazil. Production from the Caspian Basin is expected to exceed 6.5 million barrels per day by 2020. By 2010, projected production in Brazil reaches nearly 2 million barrels per day and in the offshore regions of West Africa exceeds 2 million barrels per day. North Sea production is expected to peak in the middle of the current decade, reaching 7.5 million barrels per day, with a slower decline rate than earlier expected. By 2010, oil production in Mexico is expected to increase by 30 percent above current levels.

The average wellhead price of natural gas is projected to increase from \$3.60 per thousand cubic feet in 2000 to nearly \$4 per thousand cubic feet in 2001, then decline sharply in 2002. The price is expected to reach \$3.26 per thousand cubic feet in 2020,

slightly higher than the projection of \$3.20 per thousand cubic feet in AEO2001. Although projected natural gas demand in 2020 is 1.0 trillion cubic feet lower than was projected in AEO2001, the price is expected to be higher due to a less optimistic assessment of natural gas reserves discovered by exploratory drilling. As the expected demand for natural gas increases over time, price increases are slowed by technological improvements in natural gas exploration and production. The transmission and distribution margins to electricity generators are projected to be higher than in AEO2001, under the assumption that generators will pay higher rates to guarantee pipeline capacity, particularly as natural gas is expected to be used more for baseload and intermediate-load generation.

In AEO2002, the average minemouth price of coal is projected to decline from \$16.45 per ton in 2000 to \$12.79 per ton in 2020, slightly lower than the price of \$12.99 per ton projected in AEO2001. Higher projected demand in AEO2002 is met by increased production from lower cost western mines. Through 2020, the price is expected to decline with increasing productivity in mining, a shift to western production, and competitive pressures on labor costs.

Average electricity prices are projected to decline from 6.9 cents per kilowatthour in 2000 to 6.5 cents per kilowatthour in 2020, higher than the 6.1 cents per kilowatthour projected for 2020 in AEO2001, due to higher projections for natural gas prices, electricity demand, particularly in the commercial sector, and natural gas margins to electricity generators. Electricity industry restructuring contributes to declining projected prices through reductions in operating and maintenance costs, administrative costs, and other costs. Electricity prices are projected to decline to 6.3 cents per kilowatthour by 2006 then rise in the last 5 years of the forecast as natural gas prices rise. Federal Energy Regulatory Commission actions on open access and other changes for competitive markets enacted by some State public utility commissions are included in the projections, but because not all States have deregulated their electricity markets, the projections do not represent a fully restructured electricity market.

Energy Consumption

Total energy consumption is projected to increase from 99.3 to 130.9 quadrillion British thermal units (Btu) between 2000 and 2020, an average annual increase of 1.4 percent. In 2020, this forecast is nearly 4 quadrillion Btu higher than in AEO2001, primarily due to higher projected energy demand in the commercial and transportation sectors. The projections incorporate efficiency standards for new energy-using equipment in buildings and for motors mandated through 1994 by the National Appliance Energy Conservation Act of 1987 and the Energy Policy Act of 1992, including the new residential and commercial equipment standards.

Residential energy consumption is projected to grow at an average rate of 1.0 percent per year, with the most rapid growth for computers, electronic equipment, and appliances. In 2020, the projected residential demand is 24.3 quadrillion Btu, slightly lower than projected in AEO2001. Lower projected energy demand, particularly for natural gas, results from 2-percent lower housing starts in 2020, higher projected natural gas prices, and the new equipment efficiency standards announced in January 2001, as revised by the Bush Administration.

Commercial energy demand is projected to grow at an average annual rate of 1.7 percent, reaching 23.2 quadrillion Btu in 2020, 2.4 quadrillion Btu higher than in AEO2001. Commercial floorspace is projected to grow by an average of 1.7 percent per year, as compared with 1.2 percent per year in AEO2001, raising the demand for energy

for many end uses in the commercial sector. The January 2001 equipment standards have a smaller impact in the commercial sector than in the residential sector. The most rapid increases in demand are projected for computers, office equipment, and telecommunications and other equipment.

Industrial energy demand is projected to increase at an average rate of 1.1 percent per year, reaching 43.8 quadrillion Btu in 2020, slightly higher than in the AEO2001 forecast. Industrial gross output is projected to grow at an average annual rate of 2.6 percent; however, the growth is partially offset by an average projected decline in industrial energy intensity of 1.5 percent per year. Contributing to this decline is a continuing projected shift to less energy-intensive industries. The average annual growth in non-energy-intensive manufacturing is expected to be 3.3 percent, compared with 1.2 percent for energy-intensive manufacturing.

Transportation energy demand is projected to grow at an average annual rate of 1.9 percent, to 39.6 quadrillion Btu in 2020, 1.1 quadrillion Btu higher than in AEO2001. The projected energy demand for light-duty vehicles and heavy trucks is higher in AEO2002, because a reevaluation of recent trends in both travel and efficiency indicates more rapid growth in travel and slower growth in efficiency. In 2020, projected efficiency for new cars, new light trucks, and heavy trucks is lower by 0.8, 0.9, and 0.6 miles per gallon, respectively, than in AEO2001.

Electricity demand is projected to grow by 1.8 percent per year from 2000 through 2020, the same rate as in AEO2001; however, demand is 2 percent higher in 2020. The most rapid growth is expected for computers, office equipment, and a variety of residential and commercial appliances and equipment.

Demand for natural gas increases at an average annual rate of 2.0 percent, from 22.8 to 33.8 trillion cubic feet between 2000 and 2020, primarily due to rapid growth in demand for electricity generation. Total natural gas demand is projected to be 1.0 trillion cubic feet lower than in AEO2001, due to lower projected residential and electricity generation demand, offset in part by higher projected commercial demand.

In AEO2002, total coal consumption is projected to increase from 1,081 to 1,365 million tons between 2000 and 2020, an average increase of 1.2 percent per year. This projection is 68 million tons higher than the AEO2001 projection due to higher projected demand for electricity generation, which constitutes about 90 percent of the domestic demand for coal.

Petroleum demand is projected to grow at an average annual rate of 1.5 percent through 2020, led by growth in the transportation sector, which is expected to account for more than 70 percent of petroleum demand in 2020. Projected demand in 2020 is higher than in AEO2001 by 830 thousand barrels per day due to higher transportation demand.

Renewable fuel consumption, including ethanol for gasoline blending, is projected to grow at an average rate of 1.7 percent per year through 2020, primarily due to State mandates. Nearly 55 percent of the projected demand for renewables in 2020 is for electricity generation and the rest for dispersed heating and cooling, industrial uses, including cogeneration, and fuel blending. The projected demand for renewable fuels in 2020 is 0.7 quadrillion Btu higher than in AEO2001, mainly due to higher use of biomass for industrial cogeneration and increased generation from geothermal and wind energy.

Energy Intensity

Between 1970 and 1986, energy intensity, measured as energy use per dollar of GDP, declined at an average annual rate of 2.3 percent as the economy shifted to less energy-intensive industries and more efficient technologies in light of energy price increases. With slower price increases and growth of more energy-intensive industries, intensity declines moderated to an average of 1.5 percent per year between 1986 and 2000. Energy intensity is projected to continue to decline at an average annual rate of 1.5 percent through 2020, as continuing efficiency gains and structural shifts in the economy offset growth in demand for energy services.

Energy use per person generally declined from 1970 through the mid-1980s, increasing when energy prices declined. Per capita energy use increases slightly in the forecast, with efficiency gains only partially offsetting higher demand for energy services.

Electricity Generation

Generation from natural gas, coal, and renewable fuels is projected to increase through 2020 to meet growing demand for electricity and offset the projected retirement of some existing fossil-fuel-fired and nuclear units. The projected levels of generation from power plants using coal, nuclear, and renewable fuels are higher than in AEO2001 due to higher projected electricity demand, assumed improvements in the operating costs and performance of nuclear plants, and higher natural gas prices, which reduce natural-gas-fired generation relative to AEO2001. The share of generation from natural gas is projected to increase from 16 percent in 2000 to 32 percent in 2020, and the share from coal is projected to decline from 52 percent to 46 percent as a more competitive electricity industry invests in the less capital-intensive and more efficient natural gas generation technologies.

Nuclear generating capacity is projected to decline from 2000 to 2020, but a reevaluation of the aging related costs for nuclear plants and the expectation of higher natural gas prices lead to a higher projection than in AEO2001. Nuclear plant retirements in the forecast are based on the cost of maintaining operation compared with the cost of new capacity. Of the 98 gigawatts of nuclear capacity available in 2000, 10 gigawatts are projected to be retired by 2020, as compared with 26 gigawatts of retirements in AEO2001. No new nuclear plants are expected to be constructed by 2020 in the reference case, based on the relative economics of alternative technologies.

Renewable technologies are projected to grow slowly because of the relatively low costs of fossil-fired generation and because competitive electricity markets favor less capital-intensive natural gas technologies over coal and baseload renewables. Where enacted, State renewable portfolio standards, which specify a minimum share of generation or sales from renewable sources, contribute to the growth of renewables. With higher expected levels of industrial cogeneration and wind and geothermal generation, total renewable generation, including cogenerators, is projected to increase by 1.3 percent per year to a 2020 level that is slightly higher than in AEO2001.

Energy Production and Imports

Total energy consumption is expected to increase more rapidly than domestic energy production through 2020. As a result, net imports of energy are projected to meet a growing share of energy demand. Projected U.S. crude oil production declines at an average annual rate of 0.2 percent from 2000 to 2020, to 5.6 million barrels per day. Production is projected to increase in the latter half of the forecast and is 0.6 million barrels per day higher in 2020 than in AEO2001, due to production from more fields in

the National Petroleum Reserve- Alaska, which is expected to begin in 2010. As a result of projected increases in natural gas plant liquids production, total petroleum production is expected to increase through 2020. Increasing demand for petroleum is projected to raise the share of demand met by net imports from 53 percent in 2000 to 62 percent in 2020 (lower than the 64-percent share in AEO2001, due to higher domestic production).

As demand for natural gas increases in the forecast, production is expected to increase from 19.1 to 28.5 trillion cubic feet between 2000 and 2020, an average annual rate of 2.0 percent. Projected production in 2020 is 0.6 trillion cubic feet lower than in AEO2001, because the projected rate of growth in demand is lower in AEO2002. Net imports, primarily from Canada, are projected to increase from 3.5 to 5.5 trillion cubic feet between 2000 and 2020. Net imports of liquefied natural gas (LNG) are projected to increase to 0.8 trillion cubic feet by 2020. The remaining two of the four existing U.S. LNG import facilities have announced plans to reopen, and three of the four have announced capacity expansion plans.

U.S. coal production is projected to increase at an average annual rate of 1.3 percent, from 1,084 million tons in 2000 to 1,397 million tons in 2020, as domestic demand grows. Projected production in 2020 is 66 million tons higher than in AEO2001. Coal exports are projected to decline slightly through 2020, as European demand for imports declines as a result of environmental concerns and competition from other producers.

Renewable energy production is projected to increase from 6.5 to 8.9 quadrillion Btu between 2000 and 2020, with growth in industrial biomass, ethanol, and all sources of renewable electricity generation, with the exception of solar. Renewable energy production in 2020 is 0.6 quadrillion Btu higher than projected in AEO2001, due to higher expected levels of industrial cogeneration, generation from geothermal and wind energy.

Carbon Dioxide Emissions

Carbon dioxide emissions from energy use are projected to increase at an average rate of 1.5 percent per year, from 1,562 million metric tons carbon equivalent in 2000 to 2,088 million in 2020. Projected emissions in 2020 are higher by 47 million metric tons carbon equivalent than in AEO2001, due to higher projected energy demand in the commercial and transportation sectors and more coal-fired electricity generation than in AEO2001. The higher projection for nuclear generation in AEO2002 offsets some of the increase that would be expected to result from these trends, but carbon dioxide emissions still are expected to increase more rapidly than total energy consumption, as a result of increasing use of fossil fuels, a slight decline in nuclear generation, and slow growth in renewable generation.

The projections do not include future actions that might be taken to reduce carbon dioxide emissions but do include voluntary actions to reduce energy demand and emissions.

Conclusion

Strangely, no one at the DOE is willing to talk about the NEP, whereas a few years ago, we found that everyone at the DOE would talk about the CNES (produced by the Clinton administration DOE). Even the media contacts and Public Affairs officials at the DOE were unwilling to comment on the NEP. The evidence includes a conversation with the DOE Public Affairs Office where a Mr. Chaney suggested that the DOE may produce their own NEP in a couple of years. It indicates to this writer that there is something quite different about this NEP versus previous national energy plans produced by the DOE.

More importantly, as seen in the section on "Key Long-Term Energy Issues," the EIA has intentionally and artificially inflated the OPEC oil production schedule for the next 20 years, for no apparently justifiable reason. These are unrealistic projections regarding foreign oil production in Director Mary Hutzler's AEO 2002 (speech transcript on the EIA website, www.eia.doe.gov):

"OPEC oil production is expected to reach 57.5 million barrels per day in 2020, nearly double the 30.9 million barrels per day produced in 2000, assuming sufficient capital to expand production capacity..."

Here we should also add, "sufficient political might to force OPEC to change their production schedule." We would like to believe, as it is stated on the EIA website that, "EIA is an independent statistical agency." However, being inside the DOE, with its present oil baron executive administration, apparently has warped the EIA sense of honesty, ethics and realism. Apparently, no one at EIA or DOE has reviewed the news from OPEC in the past two years (www.opec.com)? It is a rude awakening. In 2000, the following OPEC news was created, (Washington Post, 9-29-00 article, excerpt attached): "Saudi Arabia is the only OPEC nation with the capability to boost oil production significantly, a move that would harm the finances of other member nations..." Therefore, it is more reasonable and prudent to prepare for a flat or declining production schedule and warn the public that CONSERVATION is necessary. ("Conservation" is a word that Europe is using extensively now and the US DOE is supposed to be using by law.) The Congressional declaration of purpose for the DOE indicates that, among other duties, the DOE is to "promote maximum possible energy conservation measures" (42 USC Sec. 7112) but little is being done to promote conservation publicly with the awareness of oil shortages ahead. On June 26, 2002, OPEC created the following news update (which is the same as the old news):

OPEC to leave oil production and exports unchanged

July 4, 2002 6:50am

06/27/2002

OPEC is to leave its oil production and exports unchanged after its meeting in Vienna, Austria, which was held on 26 Jun 2002. OPEC's oil production and exports will stay on the lowest level over the past 10 years also in 3Q 2002 consequent on low demand. This is supposed to keep oil prices at least on the level of USD 25/barrel. OPEC introduced limits for its total oil deliveries at the beginning of 2002. Then the countries lowered oil production by 1.9 M/d barrels to 21.7 M/d barrels. At the beginning of 2002 OPEC non-members, namely Russia, Norway and Mexico, expressed their loyalty too by planning to lower their oil production to raise world prices. Financial Times Information Limited - Asia Africa Intelligence Wire

We also read in this chapter that Dr. Dermot Gately, from NY University, emphasizes that since OPEC has not changed their oil production rate for the past three decades, they will not in the future. His revealing "price per output" dual charts presented at the end of this chapter directly contradict the DOE and the EIA misrepresentation of OPEC intentions. The charts clearly show that production activity for OPEC in thirty years has never exceeded 30 mbd. In fact, after reaching such a schedule in 1973, OPEC vacillated for a while and then slowly cut back to 20 mbd in 1985 before gradually increasing again. Today, the above-mentioned news indicates OPEC is back down toward the comfort zone of 20 mbd. Such oscillation in a chaotic system such as OPEC

will probably continue. Therefore, we are more likely due for another, more severe cutback from OPEC. It would actually be the best thing to happen for the US, the only country in the world who does not conserve oil or gasoline, to help wean us off of the present addiction to the millions of barrels per day of black, liquid death from fossils.

EIA also has side-stepped and essentially avoided the tendency for OPEC to maintain a reduced production schedule, especially since the experts indicate many problems with the "tight" system it represents (with no excess available to take up any slack). In 2000, all the Secretary of Energy Richardson could say was **"We were caught napping... We did not think that the 11 members of OPEC could close ranks enough to limit supplies"** (*Wash Post*, 2-27-00). How the DOE could sound so stupid then and still deceive the public today (two years later) is incomprehensible.

It seems more likely that the DOE is welcoming another crisis when OPEC offers another cut in production. The EIA Assumptions to the AEO 2002 on the web also are surreptitiously deceiving the public about the danger and severity of its over-optimism. Besides oil price guesses, the only indication that an extraordinary leap in imagination for 2020 has been made by EIA about OPEC is the cryptic comment in the World Oil Markets section, "...and thus full market consequences, such as the consumption or price impacts, are not captured." The public has apparently been forewarned, even though Hutzler above wants to make the completely different assumption that "sufficient capital to expand production capability" is all that is necessary to double OPEC output. OPEC already has sufficient capital but still has decided to maximize profits. Doesn't the DOE and EIA know this?

Lastly, as this author indicated when he was interviewed on *CNN Moneyline*, June 25, 2002, *Hubbert's Peak* (see Chapter II) should be a warning and a wake-up call to people in the DOE and EIA who are not aware of the 2010 peak in world oil production. Linda Bluestein, in charge of Fleet Management at the DOE, said she was not informed about the book though it directly impacts her job. Hubbert was right on the money 15 years before the US production curve peaked. Can he be very wrong about the world oil production peak? Oil experts in Europe and American think not. **The oil peak is the maximum production that the curve reaches before it descends, never to return.**

This is a huge oversight by the DOE and EIA, which implies they are napping again.

A22 FRIDAY, SEPTEMBER 29, 2000 S DM VA

WORLD NEWS

OPEC Blames Taxes For High Oil Prices

Summit Urges Rich Nations to Help Poor

By SCOTT WILSON
Washington Post Foreign Service

CARACAS, Venezuela, Sept. 28—Concluding its first summit conference since 1975, the Organization of Petroleum Exporting Countries declared today that rich countries complaining about high oil prices should instead cut their gasoline taxes and help the devel-

reached post-Persian Gulf War peaks of above \$35 earlier this month. But OPEC leaders, who control two-thirds of world oil exports, adjourned after making only a general commitment to "providing adequate, timely and secure supplies of oil to consumers at fair and stable prices."

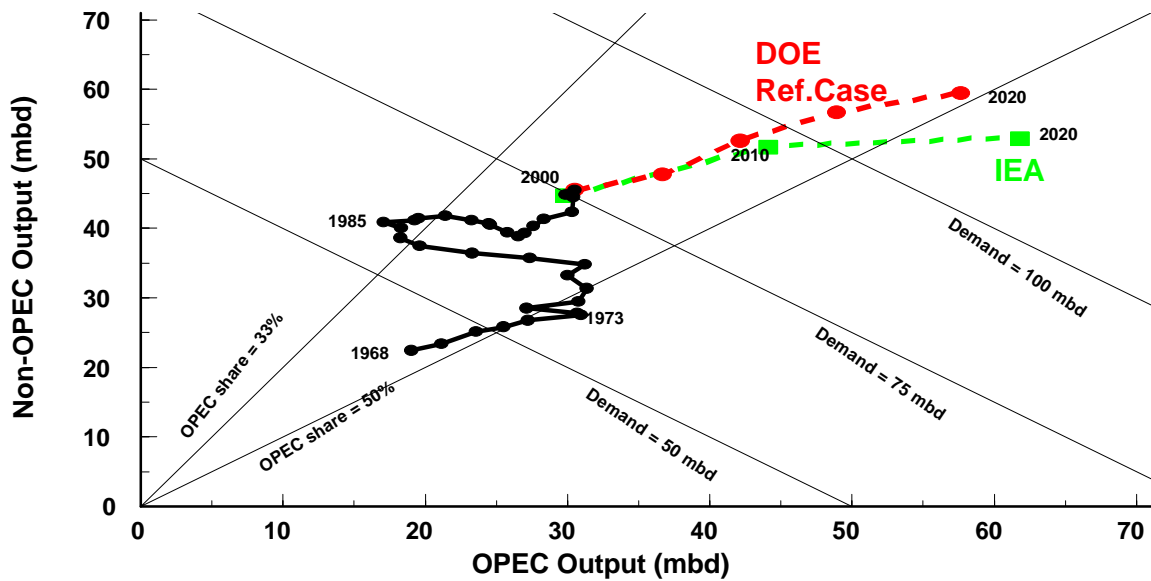
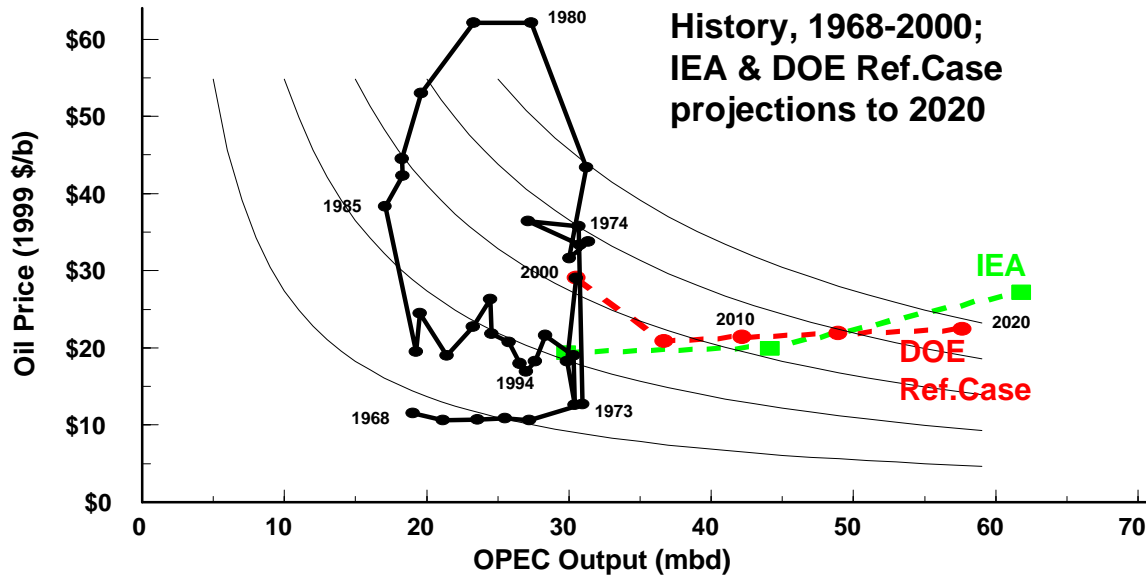
More explicitly, the declaration and subsequent comments by



President Chavez, facing away, chats with United Arab Emirates' official Hamad bin Mohammad Sharqi, left, and Saudi Crown Prince Abdullah.

BY GREGORY BULL—ASSOCIATED PRESS

OPEC PROJECTIONS: EIA & DOE Reference Case



Gately graphs showing OPEC and non-OPEC historical trends that also anticipate the future.

“Both DOE and IEA projections require huge increases in OPEC output.”
 Dr. Dermot Gately, NY University

(mbd = million barrels per day)

IV. Who is Responsible and Who Benefits

Introduction

Today, there seems to be a general complacency in the US regarding energy security and the NEP. Everyone, including those in turbulent California, have become unresponsive to the threats of future energy price wars and shortages due to world oil reserve depletion. Even Ken Deffeyes of *Hubbert's Peak: The Impending World Oil Shortage* admits that estimates of the peak of oil production were widely circulated in major magazines with almost no response. With that introduction, the dirty story of profiteering and payoffs needs to be told, especially with regard to the Bush-Cheney big business manifesto, otherwise entitled, the National Energy Policy.

Energy Industry's Recommendations to Bush Became National Policy

As the Bush administration released thousands of documents on its energy task force, in the Spring of 2002, the evidence mounted that industry groups provided substantial input in drafting the president's energy plan. A review of documents released under court order by the Department of Energy showed that several recommendations from energy industry representatives were written into the White House's national energy report and into an executive order signed by President Bush. In putting out 11,000 pages of documents before court-imposed deadline, the Energy Department gave new ammunition to critics of the administration's energy policy, who say it is tilted in favor of the coal, gas, oil and nuclear industries. The documents show, for example, that Energy Secretary Spencer Abraham met with more than 30 industry representatives at eight sessions from Feb. 14 to April 26, 2001. The Nuclear Energy Institute, the Independent Petroleum Assn. of America and the American Coal Co. were among the business groups invited to those sessions. No representatives of environmental or consumer groups were listed as meeting with Abraham. The industries responsible for and benefiting from the NEP are thus becoming apparent with this documentation. It is equally apparent that the main beneficiaries of the NEP were intended to be industries and not the environment nor the public.

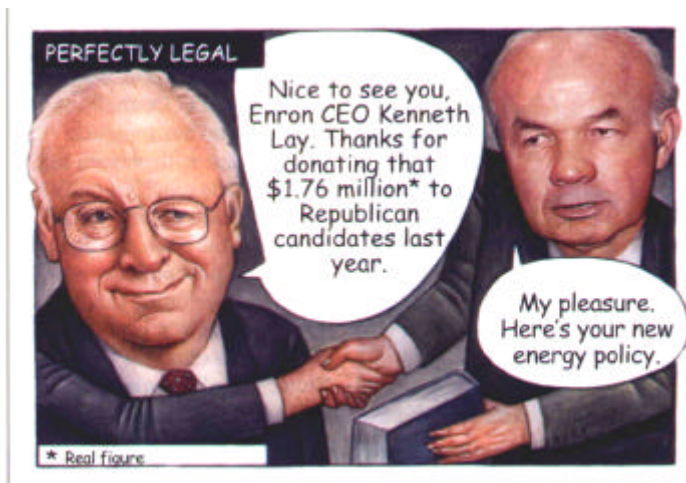
In a statement, Abraham said the documents show that the energy plan was "balanced" and that the Energy Department "not only sought but included all viewpoints." Officials from the DOE claim they sought input from environmentalists but were often rebuffed. Environmental groups however, made it clear that their calls to administration officials weren't even returned. The documents released did little to quell a legal and political controversy over the dealings of the energy task force, established by President Bush only days after he took office. Bush, a former oilman, named Vice President Dick Cheney, who had led an energy services company, to head the task force.

The administration's refusal to provide details of the task force's meetings led the General Accounting Office, the investigative arm of Congress, to file its first-ever lawsuit Feb. 22, 2002 against the executive branch. That lawsuit has not been resolved. Separately, the Natural Resources Defense Council, an environmental organization, and Judicial Watch, a conservative watchdog group, successfully brought court cases forcing the Energy Department and other federal agencies that participated in the task force to make their records available. Those two organizations had sought documents under the Freedom of Information Act and sued when it appeared that the government was

dragging its feet on those requests. The two judges in these lawsuits set a deadline to begin releasing the documents.

Among the documents released were e-mails between energy officials, detailed schedules for the secretary's chief of staff and other key officials, e-mails from citizens praising the plan or suggesting various technologies that would help solve the country's energy woes. Some of the e-mails from industry lobbyists and representatives to key members of the administration's energy task force suggested that there was significant give-and-take in the development of the plan. For instance, the National Petrochemical and Refiners Assn. and the Nuclear Energy Institute supplied recommended paragraphs to drop into specific sections of the plan.

The EPA, Department of Agriculture, and the Office of Management and Budget also released documents related to the NEP at the same time. The EPA documents included



appeals by the oil industry for reducing the number of gasoline formulas used across the country and by the auto industry for reevaluating the government's fuel-economy standards. The administration's plan called for studying both issues. Democratic lawmakers contend that the energy industry, including scandal-plagued Enron Corp., heavily influenced shaping of a production-tilted energy policy that favors the oil, gas, coal and nuclear industries. Indeed, the

administration has acknowledged that Enron officials met six times with task force officials, including once with Cheney himself, as here a cartoon from *Time* magazine graphically illustrates. Enron Ken Lay also gave an award to President Bush (see p. 74).

The Republican-controlled House approved an energy plan that included a number of the administration's initiatives, including opening up the Arctic National Wildlife Refuge to oil and gas drilling. The Democratic-controlled Senate want a far different energy bill that would stress conservation over production. The GAO is continuing to wage its legal battle to secure additional information, including White House records. Administration officials have said they may claim executive privilege--a doctrine that presidents from George Washington onward have used to withhold information from Congress or the judiciary--to maintain the confidentiality of Cheney's records. On May 27, 2002, Cheney was quoted on CNBC as saying that "public advice to the energy task group shouldn't be made public." However, the courts disagree with Cheney.

At a news conference, lawyers for the Natural Resources Defense Council, said they had found industry's recommendations among thousands of heavily edited documents released by the Energy Department. In one example cited by the NRDC, the American Petroleum Institute, a trade group that represents the country's largest oil companies, submitted a proposed draft executive order on energy policy to the Energy Department on March 20, 2001. White House officials said the energy report was the product of a balanced process that heard advice from a wide array of interests. "As we have said before, we received input and ideas from a variety of sources, whether it be an industry

group or an environmental group, an individual citizen or a member of Congress," said Anne Womack, a White House spokeswoman. "Of course, those ideas and suggestions were reviewed and those that were meritorious were discussed by the energy working group. If they were consistent with the goals of the group to provide more energy to the American people in a cleaner, safer way, then we incorporated those ideas into the final product."

The Natural Resources Defense Council, who spearheaded the legal effort for disclosure of energy records, is a national, non-profit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 500,000 members nationwide, served from offices in New York, Washington, Los Angeles and San Francisco (www.nrdc.org).

Presidential Order Followed Draft by Oil Lobbyists

President Bush in 2001 issued a presidential order on energy policy that closely followed a proposed draft given to the administration two months earlier by oil lobbyists, according to documents released by the Energy Department under a court order. Two months later, Mr. Bush signed an executive order that the NRDC lawyers said was nearly identical in structure and language to the trade group's proposal. The executive order concerned government regulations that affect energy supply and distribution. "Big energy companies all but held the pencil for the White House task force as government officials wrote a plan calling for billions of dollars in corporate subsidies, and the wholesale elimination of key health and environmental safeguards," John H. Adams, the president of the council, said at a news conference (Ref: www.nrdc.org).

White House spokeswoman Womack said she did not know whether the American Petroleum Institute's suggested executive order was used to draft Mr. Bush's May 18, 2001 executive order. The national energy policy, was made public last May was then used for an energy bill passed by the House of Representatives. Mr. Cheney has refused to release a list of industry executives who advised the administration, and the General Accounting Office, an investigative arm of Congress, was forced to file a lawsuit against the vice president to gain access to the list. A picture of the task force's work has begun to emerge. The documents show that some senior administration officials, including the energy secretary, Spencer Abraham, heard advice exclusively from executives and lobbyists from large energy corporations. A review by *The New York Times* of thousands of pages of documents released to the council and other groups found a stream of policy papers and e-mail messages to the Energy Department from the American Petroleum Institute (API), the leading lobbyist for the domestic oil industry.

Regarding the petroleum institute actions, their suggested executive order from the president was intended to highlight a law that the industry group said was already on the books but was not being enforced. The institute's top lobbyist, Jim Ford, sent an e-mail message dated March 20, 2001, to Joseph Kelliher, who was the policy adviser at the Energy Department. The message included a draft executive order. API called it "a suggested executive order to ensure that energy implications are considered and acted on in rulemakings and other executive actions." Mr. Ford wrote that it was imperative that agencies consider the energy implications of environmental and other regulatory actions. On May 18, the day after the release of the energy policy, Mr. Bush signed an order calling for just that. One passage that defines what regulatory action is needed at other federal agencies reads very similarly to a passage in the draft order the petroleum institute submitted. The API recommended an order requiring agencies to consider whether environmental or regulatory actions would cause "inordinate complications in

energy production and supply." Bush, on May 18, issued Executive Order 13211, directed agencies to prepare a "Statement of Energy Effects" relating to "any adverse effects on energy supply, distribution or use."

The petroleum institute's president, Red Cavaney, said that his organization had been calling for such an executive order since Spring, 2000. Mr. Cavaney said that his group thought an executive order would highlight part of a law, the Environmental Policy Act, that called for federal agencies to analyze the impact of regulations and laws on energy supplies and prices. The institute had submitted draft executive orders on other issues to the Clinton administration in the late 1990's, but they were ignored, Mr. Cavaney said. This admission apparently shows less corruptibility by the previous administration, normally expected from the executive branch of the government. He pointed out that the Bush executive order on a topic important to the institute and the similarity of some of the language used may be coincidental. "What we gave them was our best view of what we thought would make this system most efficient," Mr. Cavaney said. "What we got in and didn't, only the administration can answer that since they had the deliberative process." The organizations and companies whose influence the resources council cited maintained that they were pushing for their best interests, an approach the council conceded was to be expected. The industry groups said it was up to the administration to determine whose opinions would get the most consideration.

The API recommendation defines the order to apply to "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." The Bush order says it applies to "any action by an agency. . . .that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking." The similarity was identified by NRDC who said the order's wording was far more expansive than is customary. "The oil companies seem to be putting words in our president's mouth," Sharon Buccino, an NRDC lawyer, said at a press conference. A spokeswoman for the administration was examining NRDC's charges. The environmental group, in Spring, 2002 also filed a motion in U.S. District Court in Washington seeking to hold the Energy Department in contempt of court for providing incomplete information under court order and once again had to ask a federal judge to compel the administration to immediately turn over 15,000 pages not released by the Energy Department (Ref: *Washington Post*, March 27, 2002).

Department of Energy has More Important Responsibilities

Looking for specific responsibility underlying the NEP, most often, one need look no further than the DOE. In a larger sense, the DOE is mandated by law to fulfill certain responsibilities regarding a national energy plan. As reviewed in Chapter III, it is legally the responsibility of the President through the agency of the DOE to produce the NEP only after conducting public meetings. The DOE is compelled by US Code (USC) to:

"seek the active participation by regional, State, and local agencies and instrumentalities and the private sector through public hearings in cities and rural communities and other appropriate means to insure that the views and proposals of all segments of the economy are taken into account in the formulation and review of such proposed Plan." (42 USC 7321 Sec. 801 (a)(2))

In Section 801 (d), the DOE Organizational Act (1977) also expressly provides that the President,

“shall insure that consumers, small businesses, and a wide range of other interests, including those of individual citizens who have no financial interest in the energy industry, are consulted in the development of the Plan.” (42 USC 7321 Sec. 801 (d))

Clearly, the Bush-Cheney energy task force chose to intentionally and covertly violate this law. The DOE apparently does have something to hide as it participated in the cover-up during 2001-2002 by working hard to hide the details of its energy task force actions. The DOE even filed a motion in federal court, arguing that it has satisfied all of its obligations to disclose documents related to Vice President Cheney's secret energy task force, while the NRDC set the record straight by filing an opposition debunking DOE's dubious claims. The NRDC identified numerous inadequacies with the agency's search for materials and its unlawful withholding of public documents. For example:

1. *DOE says that it conducted a complete search and production of all of its documents related to the energy task force.*

In fact, DOE has not searched for, let alone produced records generated or reviewed (including calendars and meeting notes) by the task force's executive director, Andrew Lundquist, and other key task force staff - all of whom were agency employees!

2. *DOE says that it was justified withholding or redacting documents because they represented pre-decisional, internal deliberations.*

In fact, this privilege applies only to inter- and intra-agency documents. DOE has all along insisted that the task force was not a federal agency. Therefore, documents sent to, received from or generated by the task force legally cannot be withheld. Furthermore, DOE has withheld numerous documents created after the date of the task force's report (May 17, 2001). These documents are not pre-decisional in any way.

3. *DOE claims to have released all materials received from or sent to third parties.*

In fact, NRDC has identified several examples of documents shared with or produced by third parties that DOE did not provide. For example, e-mails from outside parties like the American Petroleum Institute indicate that attachments were included, but DOE did not release those attachments.

4. *DOE claims that it released any information that it was able to separate from documents that contained properly withheld information.*

In fact, numerous documents that DOE has redacted the entire content on their face appear to contain factual material. For example, one document redacted entirely refers to "descriptive information about the CCTP." (Clean Coal Technology Program.)

Uncharacteristically, the Energy Department continues to stonewall these lawful efforts by the NRDC, even though in other areas it seems to abide by the law and also educate the public about its practices. From the past three chapters of this *Bush-Cheney Energy Plan* report, the DOE seems to have a hidden agenda, sometimes manipulating the facts, deceiving the public on critical issues, and directly assist in the suppression of vital energy information.

“Office of Military Allegiance” at the DOE

The perplexing behavior of the DOE reviewed above, sometimes helping the public and sometimes thwarting it, is more understandable from the extensive military involvement of the DOE, which continues to this day. Its allegiance began with the Atomic Energy Commission formed in 1947 and its Division of Military Application. By 1949 a “full-scale weapon program” was underway and assumed a new importance when the first Russian

detonation was detected. At the direction of President Truman, the Commission began to develop thermonuclear weapons on a priority basis. By the mid-1950's the thermonuclear emergency, plus the divisional efforts begun in the late 1940's, resulted in the erection of an extensive industrial system for weapon research and development. Weapon research labs were established at Livermore and Sandia, with manufacturing plants at almost a dozen places throughout the US by the end of the 1950's. As more weapons were produced and tested, the nation's nuclear stockpile grew. Control of the growing stockpile was gradually transferred from the Atomic Energy Commission and the Division of Military Application to the Department of Defense with an agreement signed in 1953. During the 1960's the Division of Military Application developed several other new major programs. As reviewed in Chapter III, Project Plowshare was one of them. By the 1970's, when ERDA was formed, replacing the AEC, the Division of Military Applications continued unabated with the same priority. It wasn't until 1977, when the DOE replaced ERDA that the modern Office of Military Applications also replaced the Division, with a similar agenda (Ref: DOE/OSE-0003).

As released by the DOE in May, 2001, we find that in 1989, the DOE Office of Military Applications, with its own budget, funds research programs, conducts security evaluations, and participates in inspections, as reported by the DOE Office of Scientific and Technical Information (OSTI) (Ref: <http://www.osti.gov/energycitations/>). For example, these three revealing reports are available through OSTI:

- Report #SAND-89-0773: Author, S.K. Lyo. The Center for Compound Semiconductor Technology (CCST) was formed within the Solid-State Sciences Directorate at Sandia National Laboratories in 1988, as the culmination of a long-term thrust into compound semiconductor research and technology that began about ten years ago. At that time, it was realized that electronic and optoelectronic devices based on compound semiconductors would be necessary for photonic applications, and that they could provide greater radiation hardness, higher speed, and higher operating temperatures than comparable silicon devices and circuits. It was also realized that a successful program would require the development and integration of materials growth and processing capability, solid-state physics research, and device engineering. The program at Sandia grew steadily from the purchase of the first Molecular beam Epitaxy (MBE) system in 1981, and the discovery of strained-layer superlattices in 1982, to the completion of the Compound Semiconductor Research Laboratory in 1989. To more formally organize this effort, Sandia established the CCST in 1988, aided by \$10M of funding from DARPA. The CCST comprises most of the compound semiconductor research and development activities in the Solid-State Sciences Directorate. Ongoing programs are funded by the DOE Office of Military Applications, DOE Basic Energy Sciences, DOE Conservation and Renewable Energy, and the Department of Defense.
- Codename JNMME, ISSN0893-6188, OSTI ID 5623529: Author, J. L. Torres, Office of Military Applications. The fundamental role of Office of Security Evaluations (OSE) is to assess the effectiveness of Safeguards and Security (S and S) policies and programs in the U.S. Department of Energy (DOE). To achieve this objective, OSE conducts a management-oriented Inspection and Evaluation (I and E) program which is one of the three levels of S and S oversight in the DOE; i.e., (1) operating contractor self-audit; (2) field office survey of contractor; and (3) Headquarters I and E. The I and E management-oriented and independent oversight program reports to the Secretary through the Assistant Secretary for Defense Programs. The I and E effort involves an evaluation of field office and contractor management of the S and

S program. The inspection (I) activity is a vertical assessment of a particular field office over the spectrum of up to eight topics. The Evaluation (E) activity reviews specific elements or topics across the DOE; hence these are described as horizontal assessments. These I and E activities include both compliance and performance tests - the latter includes such topics as response forces, nuclear material control capabilities, and computer security, etc. The I and Es are performed on 59 key facilities on an 18-month cycle. This paper describes the background leading to the current OSE, the basic organizational structure, the accomplishments achieved in 1986-88 the directions of the program up to the end of June 1988, and new avenues to enhance the effectiveness and credibility of the program.

- Report #LA-UR-94-2236; SAND-94-0572C; CONF-940748-4: Author, J. F. Metzler, USDOE, Office of Military Applications. Initiatives by the President and the Secretary of available national excess special nuclear for third party inspection and verification required special design requirements to be considered for the reconfigured weapons complex storage facilities. The approach that will be taken in the design and operation will permit controlled access to all nuclear materials and related information that would not disclose or lead to disclosure of classified or proprietary information not obligated by treaty or other agreements. This approach would provide the third party inspectors with the information and capability to access designated materials while minimizing impact upon facility operations. These considerations would also give the federal government the flexibility to add new materials to the excess materials category list in the future. This paper will discuss the safeguards and security design impacts and features that are being anticipated for the storage facilities, both for possible new construction and upgrading existing facilities.

The Extent of Classified Military Weapons Programs at the DOE

The programs reprinted above suggest how much the Office of Military Applications is developed within the DOE. Today the DOE is even more differentiated with regards to classified, military projects. The Office of Military Applications is very busy. To get some idea of the amazing scope of energy-related, military programs the public never sees, Science Applications International Corporation (SAIC) is a good porthole through which to view the activity at the DOE, since they are a prime contractor. For example, there are intelligence-gathering and secure vault DOE jobs, in a "national security environment," requiring DOE Q, DOE L, secret, top-secret, and sensitive compartmented information (SCI) clearance, offered by SAIC for the DOE. Many of the jobs are at the Forrestal Building, which is the DOE main headquarters. To conserve space, only the first two listings are complete. The rest are abbreviated. All of them serve to illustrate the extent of military weapon and advanced energy system service that the DOE is engaged in, all under the cloak of secrecy (Ref: <http://jobs.saic.com>).

- Program Analyst. Job Description: Performs programmatic analysis of functions related to the Department of Energy (DOE) Office of Intelligence (DOE IN-1). Collects and analyzes Headquarters DOE and field operations elements' intelligence data associated with periodic reports and specialized one-time requirements, including security investigative data and unique specialized requirements in response to DOE-HQ senior management inquiries. Establishes and modifies database architecture of associated DOE IN-1 functional activities and prepares periodic and specialized reports, analyses and recommendations associated with field and HQ input. Develops consolidated reports involving compartmented personnel security actions, compartmented intelligence information and personnel

and prepares associated reports, including preliminary recommendations based on analysis. Coordinates periodic reinvestigation activities for compartmented cleared personnel. Collects, analyzes and prepares preliminary statistical reports for submission to higher level DOE organizations, subject to DOE supervisory approval. Develops periodic and specialized presentations, including statistical charts and supporting data for DOE management review. Writes and coordinates correspondence associated with DOE IN-activities for DOE supervisory approval and signature, as required. Salary range is \$36-42K depending on experience. Education: Associates or Bachelor's Degree preferred. Required Skills: Position requires a DOE Q and SCI clearance. Duties will be at DOE HQ, Forrestal Building in Washington, DC. Minimum of 5 years of administrative experience required. Previous clearance must be within 5 year window.

- Administration/Operation Assistant. Job Description: Work will be in a secure vault environment and in a dynamic, interesting and highly sensitive setting involving Intelligence activities and related duties., Perform all aspects of an administrative/operational position .e: typing, composing, reviewing, proofreading, formatting according to DOE orders and policies, analyzing data, finalizing correspondence, escorting senior visitors, document control, inventory activities, classified document processing, performing travel scheduling IAW GSA Fed Travel Guidelines and accomplishing travel authorization and vouchers, operating STU III and other classified equipment. Accomplish classification markings and operate with security classification issues. Document management and accountability., Coordinate, research, drafting, data gathering, developing, preparing reports, distribution support, correspondence, setting up large meetings/conferences, coordinating activities, maintaining training schedule, processing requests, filing records. Also perform reviews, input/checking data, drafts, filing, report assisting, tracking, and accessing classified databases, utilizing production databases, maintaining current schedule for Office Director, fill in as Directors secretary/receptionist as required, be flexible, work as a team member, be serious, reliable, truthful, punctual, responsible, adaptable, people and mission oriented, and professional as expected in a sensitive National Security environment. Education: AA/BA desired or certificates of accomplishment, training, or certification of skills. Required Skills: Position requires a DOE Q clearance. A current DOD Top Secret clearance can be transferred. Position also requires a SCI clearance. Duty location will be at DOE Headquarters, Forrestal Building, Washington, DC. Minimum of 5 years working experience required. Three recommendations required. Previous clearances must have been granted within 5-year window. Desired Skills: Experience working for DOE is desired. Knowledge of DOE's policy and procedures. Job Category: General Office; Ref. No: KDM045389; Location: Washington D.C. US
- National Security Analyst. Job Description: Serve on or lead project teams to develop plans for Federal, state, and local government or private sector clients to respond to threats, intentional acts, or accidents involving chemical, biological, radiological, nuclear or high yield explosive (CBRNE) materials, as well as catastrophic natural phenomena or accidents. Be part of SAIC project team developing, conducting, controlling, and evaluating an on-going series of exercises for DoD and DOE clients to validate plans, procedures, and training for responding to and managing the consequences of an accident or incident involving a nuclear weapon in DoD or DOE custody. DOE Q Clearance required.

- Electrical Engineer. Job Description: Support tasks related to research development, testing, and analysis of weapons components and subassemblies. Troubleshoot electrical/mechanical controls. Develop/review documentation (i.e., schematics, drawings, procedures, and maintenance manuals). Team successfully with engineers and technicians from other disciplines. Performance of job responsibilities will involve exposure to hazards that include radioactive and other hazardous materials. DOE Q clearance required.
- Nuclear Weapons Engineer. Job Description: This position provides for technical support to the Nuclear Weapons Research and Development Program within the National Nuclear Security Administration (NNSA) Office of Defense Programs. The candidate will provide technical evaluations and analyses of issues related to nuclear weapons research and development activities; assist in preparing briefing materials for federal managers; provide program/project management support for various weapon systems; and assist with the preparation of draft budget documentation. This position is located in Washington, D.C. This position requires a DOE Q or DoD TS clearance and between 4 and 10 years of experience. The candidate must have direct nuclear weapons experience, such as nuclear weapons research and development, logistics, maintenance and operations. Knowledge of various weapon components and subsystems is required. Experience with the NNSA nuclear weapons program, including experience at the national weapons laboratories, and/or military experience is also required. The candidate for this position must be highly motivated individual with the ability to complete short turnaround assignments. Top secret clearance required.
- Junior Policy Analyst, Nuclear Operational Issues. Job Description: Support to Pentagon Air Staff organization working full spectrum of Air Force nuclear issues. Force structure, modernization, personnel, operational policy and guidance documents, readiness/sustainability, security, and stockpile management are a few of the broad areas needing support. Development of senior level conferences, outreach (newsletter, web site) products. Internship with DOE, DOD. Secret clearance required.
- Senior Homeland Security Analyst. Job Description: Independently or as project leader, employee will conduct research on and analysis of Public Law, Executive Orders, and Federal regulations, plans, and guidance related to critical infrastructure protection, national homeland security, emergency preparedness, continuity of operations planning, and US military assistance to US and foreign governments in managing consequences of CBRNE events. Serve on or lead project teams to develop strategies and plans for DoD and other Federal government clients to respond to threats, intentional acts, or accidents involving chemical, biological, radiological, nuclear or high yield explosive (CBRNE) materials, as well as catastrophic natural phenomena or accidents. Top Secret clearance required.
- Mechanical Engineer. Job Description: Serve as an integral member of high precision dimensional inspection team supporting tasks related to research, development, testing, and analysis of weapons components and subassemblies. Responsible for mechanical/electrical design and installation of inspection equipment upgrades, tooling, fixturing, and mechanical/electrical design of development activities associated with research and development of new inspection techniques, methods, processes, and equipment. Diagnose and correct mechanical/electrical problems in existing and developmental inspection systems. Performance of job

responsibilities will entail exposure to hazards that include radioactive and other hazardous materials. DOE Q clearance required.

- Inspection Technician. Job Description: Serve as an integral member of high precision dimensional inspection team performing dimensional inspections at areas supporting tasks related to research, development, testing, and analysis of weapons components and subassemblies. Performance of job responsibilities will entail exposure to hazards that include radioactive and other hazardous materials. DOE Q clearance required.

If this sample of almost a hundred job openings for the DOE is any indication, classified programs at the DOE deal with more than just nuclear reactors. To the uninformed and naïve public, like most of us, the job listings for the DOE are overstepping its bounds, besides violating 42 USC Sec 7112 of the Congressional declaration of purpose for the DOE by supporting the military effort and weapon development so heavily. The DOE meanwhile is openly suppressing new energy technologies that could relieve the US dependence on oil and coal. For example, it has refused to support cold fusion research, even rescinding a \$100,000 NERI grant to Dr. George Miley in 2000, when it was learned through the intervention of Bob Park of the American Physical Society, that his U. of Illinois laboratory experiment for remediation of radioactive waste involved cold fusion. The DOE upper management has never needed security clearances to have full knowledge of the DARPA-funded ORNL decade-long project on sonoluminescence (bubbled fusion), recently published in *Science* (8 March 2002, V. 295, 0. 1868), "Evidence for Nuclear Emissions During Acoustic Cavitation" (Ref: <http://www.sciencemag.org/feature/data/hottopics/bubble/index.shtml>) and the Naval Research Lab (NRL) decade-long program researching cold fusion which found complete reproducibility with a palladium-boron system. The NRL 135-page report, "Thermal and Nuclear Aspects of the Pd/D2O System, Decade of Research" Tech Report #1862, has now been published with the director of the program, Dr. Frank Gordon, stating, "It is time for government funding organizations to invest in this research" (Ref: Vol.I, 3.5 Meg, <http://www.spawar.navy.mil/sti/publications/pubs/tr/1862/tr1862-vol1.pdf>).

This DOE section suggests the extent to which the original ***Congressional declaration of purpose for the DOE*** has been diverted toward weaponry and military projects rather than energy conservation strategies for the public, optimal development of various forms of energy production, and placing ***"a major emphasis on the development and commercial use of solar, geothermal, recycling and other technologies utilizing renewable energy resources"*** (Ref: 42 USC 7112). While Congress moved forward with legislation based on the task force recommendations, and federal agencies implemented many of those recommendations, the Bush administration and the DOE actively deny the public information to which it is legally entitled about who shaped its energy plan and what really goes on in the DOE that apparently has much higher priority to its management than the NEP.

Bush's Crony Capitalism and Protectionism are Responsible

Another aspect of responsibility falls squarely on Bush for the NEP outcome. The dramatic reversals that Bush has exhibited, compared with his campaign promises, is apparently to payback certain industries for their contributions. For example, "President Bush acted in direct contravention of his alleged belief in open markets to throw American muscle around in a fashion guaranteed to produce the greatest harm for the greatest number - all in the interest of the most special of interests," states reporter,

Thomas Oliphant. Earlier in March, 2002 it was steel. Then, later in the month, Bush targeted softwood lumber products. Bush has managed to set the stage for higher car and appliance prices as well as for higher house prices in a couple of moves that promise to eliminate the effects of last year's tax cuts for many who are buying cars or new homes this year.



The first move - slapping higher duties on imported steel products - was aimed at a group of countries less developed than the United States. The latest - slapping higher duties on imported softwood lumber - is aimed at the country's largest trading partner, Canada. The moves are equally irresponsible. More expensive steel products will do little to help a drastically

shrunk steel industry back on its feet. More expensive lumber from softwood trees (like poplar) will similarly be of marginal benefit at best unless you call the ability of comparatively inefficient producers to get away with higher prices good for the country. In each case, moreover, the harm greatly outweighs the alleged benefit to the special interests that won Bush's attention. There are far more jobs involved in using or importing steel than in making it. Also, the impact of the lumber industry is minuscule compared with homebuilding, which by some calculations employs up to 30 times more people.

There are related details in the move by the Commerce Department to impose tariffs in a range of 20 to 28 percent on softwood lumber from all of Canada except the Maritimes. The decision came after repeated attempts at negotiations failed and a deadline for agreement passed. The dispute has been going on for about 20 years, though the United States and Canada have been squabbling about lumber for 200 years. This is a big deal. About one-third of all the softwood lumber used in this country comes from Canada. The trade is worth around \$6 billion annually. If the domestic home builders are correct, the \$1,000 or so the higher tariffs will add to the price of an average new home is enough to price 300,000 American families out of the mortgage market. What in the eyes of US lumber people is a subsidy by Canada to its own industry that permits "dumping" of cheaper products on the American market is in Canadian eyes nothing more than a different way of managing government-owned forests. The US response furthermore, appears to be a limit on market access of the sort forbidden under the North American Free Trade Agreement (NAFTA).

The specific dispute involves something called "stumpage" prices. The charge to Canadian lumbermen who operate on government-owned land is lower than the prices charged in this country, where there is far more commerce on privately owned land. How this difference constitutes a flagrant subsidy escapes most people outside the US lumber industry. The tariffs will not actually be collected until the US International Trade Commission rules on whether the Canadian practices are in fact subsidies conferring an unfair advantage on the Canadian industry and injuring the Americans. There is little drama regarding the outcome. Increasingly, the commission has evolved into a rubber stamp for special US pleaders, and it has a record of being deferential to political pressure. To drive home the point and make this ugly matter bipartisan, Senate Finance

Committee chairman Max Baucus, Democrat of Montana, got more than half the Senate to sign a letter leaning on the commission to adopt the US industry's position. In this atmosphere, the International Trade Commission is to open markets what the Federal Election Commission is to clean campaigns.

Bush administration officials, in effect pleading guilty to special-interest protectionism, note that the president's steel tariffs redeemed a campaign promise that helped him win office by carrying West Virginia. They also note that lumber is an especially political business, with powerful advocates like Baucus and Republican leader Trent Lott. The administration is practicing crony capitalism, according to Oliphant, more worthy of Suharto's Indonesia than the most powerful nation in the world. It is also piling hidden taxes on American consumers and jeopardizing much larger industries with presumably less effective lobbyists. (Ref: Oliphant, *Wash Post*, 3/26/2002)

Market Manipulation by Energy Traders is also to Blame

Responsibility and blame has to rest on the ease with which industry exerts undue influence on the national energy policies. Industry lobbyists have created a science out of drafting presidential orders and business-friendly paragraphs for the NEP. Even campaign finance reform will not affect the big market that industry represents to the White House. Its influence has reached epidemic proportions, with profit-taking reaches into the billions of dollars. However, new policies in the NEP were needed and now new federal intervention is needed to curb the widespread scandal that is emerging, partly because of deregulation. The extent to which the energy industry will go to abuse system loopholes became apparent with this new scandal, catching energy traders in the act of creating artificial crises, thus intentionally causing energy prices to rise. During the California rolling blackouts of 2001 a "maintenance" cycle of a few power plants caused them to be off-line. Furthermore, so blatant was the manipulation of the market by energy traders that on May 15, 2002, US Senator Dianne Feinstein released a statement regarding this abuse. She cites an Edison memo to FERC that documents market manipulation by energy traders. Below are Senator Feinstein's comments:

"I have just been given a copy of an August 17, 2000, memo from Southern California Edison provided to Federal Energy Regulatory Commission, which demonstrates that FERC was given in writing a series of observed abuses some of which were later depicted in the December 2000 Enron memos documenting market manipulation by the company.

The Edison memo demonstrates FERC knew about the gaming and manipulation of the Western energy market as early as August, 2000. This memo discusses a number of schemes, including:

- Intentional creation of congestion.
- Fictitious day-ahead schedules counterflow to congestion.
- Intrazonal congestion gaming, including:
 - INC game (Specific generation in a local area is required to increase output to resolve a local reliability problem. When the generation becomes aware it is needed, bids are increased from competitive levels to the cap. In 2000, the cost of the INC game has exceeded \$30 million.)
 - DEC game (Specific generation in a local area is required to decrease output to resolve a local reliability problem. When the generation becomes aware of the problem, it bids negative prices and forces the ISO to pay the cap to

reduce output. During the week of June 14, 1999 Duke was able to extract about \$1 million a day as a result of this game.)

- Scheduled/unscheduled maintenance of reliability must run units (The implication here is extremely important, because for the first time, it provides direct commentary about abuses involving the scheduled and unscheduled maintenance of electrical power plants and how this could lead to increased wholesale prices for the generator's other power units. This in my view is a critical item, for never before in the history of California power have as many units been down at one time.)
- Out-of-market changes in bidding behavior (again, another way to force the ISO to pay the company the cap to perform).

Additionally, there are specific sections on real-time energy market gaming; day-ahead energy market gaming, congestion gaming (including megawatt laundering) and ancillary service gaming. All of these strategies are devised to game various parts of the market to artificially inflate price. This is further corroboration through Southern California Edison that the Western marketplace was manipulated and gamed while it appeared the federal agency responsible for overseeing the marketplace and ensuring "just and reasonable prices" failed to respond.

I have the following questions for FERC: what happened to this memo; who received it; who was the highest authority who reviewed it; and what actions did FERC take as a product of the memo?

I am also sending a copy of this memo (*California Electricity Markets: Issues for Examination*, August 17, 2000) to the U.S. Attorney General. I believe it buttresses my call for a criminal investigation, not only of Enron, but all aspects of actions by energy producers and marketers during the energy crisis in California and the Western United States. "

In view of the deliberate short-sightedness and favoritism reflected in much of the NEP, this scandal uncovered by Senator Feinstein within the energy industry itself demonstrates the same selfishness and profiteering attitude that ignores the effect on the consumer. More importantly, it supports the thesis that such unethical schemes feed on crisis and promote crisis creation to maximize their intended results.

Polluting Industries and the EPA Get Cozy

Industries that pollute were also directly responsible for a drafting of the NEP that suited their lifestyle, ultimately benefiting their environmentally irresponsible business practices. The NRDC citation of a March 23, 2001 e-mail from Southern Co., which it identified as the country's second largest polluter, to DOE policy-maker Kelliher is a prime example. An attached document to the e-mail said national energy policy should include "Reform of EPA's New Source Review Program," regulations limiting emissions from expanded power plants. Southern complained that the Environmental Protection Agency's interpretation of the statute, part of the Clean Air Act, "discourages any repair or replacement project that might make an electric utility generating unit more available to operate" for longer hours. Therefore, Bush's NEP called on the EPA to review the regulations and interpretations of the Clean Air Act. The EPA recently completed that review with a decision to make the regulations more favorable to industry. What did Southern have to say about helping Bush to violate 42 USC 7321 Sec. 801 (d)? "It's very

flattering to think that one e-mail can determine energy policy," said Laura Gillig, a spokeswoman for the Southern Company.



In the meantime, the EPA continues to reverse decades of legal precedents to cater to the whims of the NEP. In 2002, the EPA proposed to let mines dump waste in major waterways, in order to be more friendly to industry. Never mind what cities downstream use the same waterway for the intake valve to their city's drinking water. The EPA rules, simply requiring approval from the White House, now provide a major boost to low-sulfur coal mining operations in West Virginia and Kentucky as well as hardrock mining in

Western states. They also undermine efforts by environmental and community groups to fight mountaintop mining operations that they say cause unacceptable damage to rivers and streams. Modern mining techniques shear off tops of mountains to reach coal veins and then bulldoze the leftover rock and dirt into nearby valleys. Prior to the EPA change of mood, federal rules and court challenges limited how much waste from these operations could be dumped in waterways. The new rules are essentially aimed at removing these impediments, in particular regulations adopted by the Army Corps of Engineers that prohibit mining companies from disposing of material considered waste, including rock and dirt, in the nearby waterways.

The Bush administration has generally supported efforts to increase production of coal and oil. It has paid special attention to the problems of the mining industry in economically troubled parts of West Virginia, a swing state in presidential elections. Administration officials described the new rules in technical terms, largely in an effort to bring the Corps rules in line with their interpretation of the Clean Water Act. The changes will "harmonize the definition the Corps has been operating under with that of the EPA" said Greg Peck, an EPA official who had been involved in the rulemaking. However, officials of the NRDC and Earthjustice described them as a major departure in policy that could significantly weaken their legal case in fighting mountaintop mining operations in West Virginia and Kentucky. "If you want to protect waters, you don't fill them with garbage and waste," said Joan Mulhern of Earthjustice. "By getting rid of the waste exclusion, all industries will now be able to apply to the Corps to put their waste in water." The new rules also drop a provision proposed during the Clinton administration that would have given the Corps more discretion in determining what fill materials are suitable for disposal in waterways. The provision was dropped from the EPA's new rule (Ref: *Washington Post*, April 26, 2002).

As a result of these repeated incidents by the Bush administration, disregarding federal laws, while he chides big corporations for doing the same, a 12-year veteran of the EPA finally quit because, he said, the White House is "determined to weaken the rules we are trying to enforce." Eric Schaeffer detailed the attempts to weaken the Clean Air Act regulations on coal-fired power plants. The Sierra Club argues that by refusing to tell the public what kind of influence energy industries had over America's national energy policy, the Cheney task force violated the Federal Advisory Committee Act (FACA). The Sierra Club is asking the court to require Vice President Cheney and other defendants to disclose to the American people what went on behind closed doors in the creation of the national energy policy. The suit has been consolidated with a similar suit filed by Judicial Watch. Of course, the U.S. government has made motions to dismiss both lawsuits.

"When the Bush Administration wrote its energy policy, big oil and energy companies were given the red-carpet treatment, but the public was shut out of the process," said Carl Pope, Executive Director of the Sierra Club. "Americans deserve to know what happened behind those closed doors, and the law requires it." The Sierra Club filed this lawsuit after the Bush Administration refused to divulge how much influence big energy companies like Enron and oil and coal producers had in writing the nation's energy policy, despite numerous requests from Congress and others. "It's extremely unfortunate that it takes a lawsuit to learn how much influence polluting companies had over a policy affecting all Americans and generations to come. If the Administration had conducted their meetings in the light of day, we wouldn't need this lawsuit," continued Pope.

The energy policy that ultimately came out the Administration relies on technologies that will pollute our air and water, destroy special places and fail to reduce our dependence on oil and coal. At the very least, the American people deserve an explanation of why the Administration chose this path rather than safer and cleaner technologies that would protect the environment and save consumers money at the same time. The Sierra Club is asking for a full accounting of what happened behind closed doors of the Cheney Energy Task Force, including: who was in the room; what proposals did the energy industry executives and lobbyists make; what documents did the energy industry submit; and what Task Force documents did they review (Ref: www.sierraclub.org).

Cheney is Responsible as the NEP Task Force Leader

Much of the responsibility for the NEP and the determination about who benefited from it has to rest on Vice President Cheney who was appointed by Bush to form the energy task force and issue the NEP. It was called the "Bush-Cheney" report for a very good reason, thus the name of this analysis report about the NEP. However, what is Cheney's past practice, how responsible is he and what are his morals regarding the country's welfare where energy is considered?

"Cheney and Bush want privacy for their conversations, but not for anyone else's" (Tony Mauro, *USA Today*, Feb. 27, 2002). Since September 11, Vice President Dick Cheney has kept a low profile. For months, he rarely appeared at all, emerging only to sell his political ideas on CNN or to dismiss allegations of corporate wrongdoing. Even now, Cheney mostly stays in a "secure location," ready to spring into action if President Bush is attacked. Unlike most politicians, Cheney actually enjoys working in the background. By his own account, he doesn't relish campaigning, and he's hardly a natural spokesman, but Cheney excels at assembling and managing teams of people to "get stuff done." It's not surprising that Cheney is avoiding the limelight: an SEC investigation is scrutinizing his accounting practices at Halliburton, the company he ran, and Congress's investigative body is still trying to determine how much of the NEP he organized was shaped by oil, coal, and nuclear energy executives and how little by the unincorporated public. Given his key role in determining the policy and practice of the Bush administration, an understanding of Cheney's history is important.

Since he and Bush arrived at the White House, Cheney has managed to accomplish quite a bit. He's met with the heads of oil, gas, and nuclear power companies, assembled their "wish lists," and turned them into a new national Energy Plan. Cheney's close relations with folks like Ken Lay of Enron have made this one of the most corporation-friendly administrations in history. When Cheney was Chief of Staff for President Gerald Ford, his code name was "Backseat." Perhaps these days President Bush's nickname suits him better: for Cheney, it's "Big Time" (Ref: <http://www.moveon.org/moveonbulletin>).

Cheney Ordered Human Rights Violations and Broke International Laws

During an address to the Export-Import Bank Conference on May 8, 1997, Dick Cheney said, "[W]hen I was Secretary of Defense, my biggest problem was with the Congress of the United States. Now that I'm chairman and CEO of a Fortune 500 company, my biggest problem is the Congress of the United States." Cheney took the helm of Halliburton in 1995. As one of the largest global providers of equipment and services to the oil industry, Halliburton needed a chief executive who could ensure that the company had the government's full support. Cheney's close connections to top government and industry decision-makers made him perfect for this role.

In the televised national debate with Vice Presidential candidate Joe Lieberman in 2000, Lieberman noted that Cheney had done well for himself as CEO of Halliburton. Cheney responded flatly, "I can tell you, Joe, the government had absolutely nothing to do with it." However, that was a good example of Cheney's boldface lies, routinely used to cover-up his past practices. During his five years as Halliburton CEO, Cheney nearly doubled the size of Halliburton's government contracts, totaling a whopping \$2.3 billion. He convinced the Export-Import Bank of the U.S. to lend Halliburton and oil companies another \$1.5 billion, backed by U.S. taxpayers. Some of these loans went to a Russian company with ties to drug dealing and organized crime (Ref: http://www.public-i.org/story_01_080200.htm).

"[S]triking another blow for freedom from government interference, Mr. Cheney led Halliburton into the top ranks of corporate welfare hogs, benefiting from almost \$2 billion in taxpayer-insured loans from the U.S. Export-Import Bank and the Overseas Private Investment Corp. In the five years before Mr. Cheney joined the company, it got a measly \$100 million in government loans" (Ref: Molly Ivins, "Cheney's Mess Worth a Close Look," <http://www.commondreams.org/views02/0610-03.htm>). Cheney also made \$36 million at Halliburton in 2000 alone as his tax returns prove: (<http://www.thesmokinggun.com/archive/dicktax1.shtml>).

The most shocking part of Cheney's rule at Halliburton, yielding an answer to the question we raise about his morals and sense of responsibility, was characterized by a ruthless geopolitical strategy that put aside political beliefs whenever they were inconvenient. In a number of cases, Halliburton and its subsidiaries supported or even ordered human rights violations and broke international laws.

Consider the following examples:

- Libyan dictator and suspected anti-U.S. terrorist Moammar Gadhafi engaged a foreign subsidiary of Halliburton company Brown & Root to perform millions of dollars worth of work. According to the Baltimore Sun, Brown & Root was fined \$3.8 million for violating Libyan sanctions. (Although Cheney wasn't leading Halliburton when these sales started, subsidiaries' sales to Libya continued throughout his tenure.)
- Cheney claimed that he supported the U.S. sanctions on Iraq, but the Financial Times of London reported that through foreign subsidiaries and affiliates, Halliburton became the biggest oil contractor for Iraq, selling more than \$73 million in goods and services to Saddam Hussein's regime (*Wash Post*, <http://gwbush.com/spots/postpage.html>).
- In Burma, Halliburton joined oil companies in working on two notorious gas pipelines, the Yadana and Yetagun. According to an Earth Rights report, "From 1992 until the present, thousands of villagers in Burma were forced to work in support of these pipelines and related infrastructure, lost their homes due to forced relocation, and

were raped, tortured and killed by soldiers hired by the companies as security guards for the pipelines. One of Halliburton's projects was undertaken during Dick Cheney's tenure as CEO." (Ref: Halliburton and Cheney's foreign policy impact report, <http://www.earthrights.org/halliburton/report.pdf>).

As revealed above, under Cheney's rule, Halliburton contracted with 2 out of the 7 official US "State Sponsors of Terror" which normally is prohibited by the US State Department for any US corporation.

Cheney's Refusal to Conserve Energy in the NEP

"Conservation may be a sign of personal virtue, but it is not a sufficient basis for a sound, comprehensive energy policy," says Dick Cheney (Toronto, Canada, May 1, 2001). The ongoing fracas over Cheney's Energy Plan ties together many of the themes of his working life: his corporate alliances, especially with energy companies; his view of oil as integral to U.S. foreign policy; and his insistence on secrecy for the activities of the Executive branch. The NEP essentially made Cheney's statement about 'personal virtue' part of national policy. It put a premium on exploring for and extracting more oil, and proposed that the Arctic National Wildlife Reserve be used for this purpose. While it paid lip service to alternative energy sources, its recommendations focused almost exclusively on the need for more "energy supply" -- more oil, more nuclear plants, more coal.

According to the Natural Resources Defense Council, "the Bush plan would provide no short-term relief for Americans struggling to pay their gasoline and electric bills this summer. Over the long-term, it would increase pollution, despoil the environment, threaten public health and accelerate global warming. Moreover, it would have no impact on energy prices, and no practical effect on U.S. dependence on foreign sources of oil. Who would benefit? The oil, coal and nuclear industries that shoveled millions of dollars into Bush campaign coffers" (Ref. www.nrdc.org).

Shortly before the Plan was revealed, controversy arose. On April 19, 2001, Representatives Henry Waxman (D-CA) and John Dingell (D-MI) wrote to the General Accounting Office (GAO), asking it to investigate the Task Force. According to the GAO, "The congressional investigation of the task force was prompted by news reports that the task force had met privately with major campaign contributors, such as Kenneth Lay, the CEO of Enron, to discuss energy policy. According to these reports, major Republican contributors attended private sessions with Vice President Cheney and the task force met secretly with other contributors in formulating the President's National Energy Policy." Since then, as the documents released (only under court-order) have revealed, all of the news reports were true. Furthermore, the NEP appears little more than a graft of industrial verbiage sent to the Cheney task force by e-mail. In late August 2001, a *Los Angeles Times* article exposed the connections between Cheney's Task Force and Bush's campaign contributors. The article described how the final report adopted verbatim a global warming policy suggested by the U.S. Energy Association (an energy industry group), how language was altered to favor Halliburton, and how a company called Peabody Coal and its affiliates gave more than \$900,000 to the Bush campaign and "gained extraordinary access" to the Task Force (Ref: <http://www.commondreams.org/headlines01/0826-02.htm>).

Cheney's Global Policy Toward Oil

Given the corporate record of violations that Cheney displayed, a Congressional panel might have easily refused to appoint him to such a task as the NEP. Furthermore, if he

had been subject to independent review before organizing the NEPD Group, it is possible that his conflicts of interest would have also prevented approval. Since both Bush and Cheney have a long history with the oil industry, it is understandable that favoritism would dominate the NEP draft. However, what seems to be emerging from studies of the Bush and Cheney activities toward energy and the NEP is a much more aggressive, comprehensive and one-sided foreign policy. "With so many new international crises erupting every day, it is hard to detect any clear forward direction to American U.S. foreign policy. At times, it appears that providing a response to the latest upheaval is about all that Washington can accomplish. But beneath the surface of day-to-day crisis management, one can see signs of an overarching plan for U.S. policy: a *strategy of global oil acquisition*" (Michael Klare, Pacific News Service, <http://www.9-11%70%65%61%63%65.org/r2.php3?r=61>).

NRDC, for example, says the Bush administration is facilitating the energy industry's plan to drill for oil and gas on public lands now that Congress appears unlikely to approve drilling in the Arctic National Wildlife Refuge. Across the West, federal agencies are rushing to lease sensitive wildlands for oil, gas and coal development in response to instructions from Bush administration officials. For example, the Bureau of Land Management (BLM) told its Utah state directors in a memo last year: "Utah needs to ensure that existing staff understand that when an oil and gas lease parcel or when an application for permission to drill comes in the door, that this work is their No. 1 priority." There are reports that the war in Afghanistan was facilitated with the federal hope of installing an oil pipeline. A war in Iraq is also an obvious war for control of Iraqi oil, similar to the senior Bush Mideast war a decade ago.

This policy is easy to accomplish for Cheney, as the *Christian Science Monitor* indicates. "Cheney's connections and influence are seen everywhere these days - giving rise to talk that he's CEO to Bush's Chairman of the Board. Most people around Cheney probably suffer from something like Rolodex-envy" (<http://www.csmonitor.com/durable/2000/12/20/fp1s2-csm.shtml>).

The White House's official page on the Vice President is posted on the White House website (<http://www.whitehouse.gov/vicepresident/>). A short, and perhaps too sweet, biography that captures the highlights of Cheney's career is found at InfoPlease (<http://www.infoplease.com/spot/cheney1.html>). A report on Cheney's management style and personality is found at PBS Newshour (<http://www.9-11%70%65%61%63%65.org/r2.php3?r=63>).

Congress is Ultimately Responsible

No matter how convincing the previous parts of this *Bush-Cheney Energy Plan* report are concerning the Cheney strong-arm tactics regarding the NEP; undue industrial favors that dominate the NEP, hurting the American public; deficient and short-sighted language regarding environmental issues; White House and DOE stonewalling; and lack of DOE initiative in addressing the impending oil shortage; we still have to place major responsibility upon the shoulders of the US Congress, who have to wrestle with the same bribery and corruption that influence American politics today. Congress and the White House express favoritism every day as industrial donations are acknowledged. This problem needs to be taken into consideration as we look at the end of the chain of implementation, the last stage in modification of the NEP, before it is "written in stone" as a law. The House and Senate obviously have a chance to significantly change the NEP as they deem necessary, reflecting concerns of their constituents, while often they diverge from the original design offered by the NEP. As one staffer remarked about the

previous administration's *Comprehensive National Energy Strategy* (CNES), "Congress just regards it as a suggestion but both the House and Senate want to draft their own versions." In 2002, the same politics of the egocentric Congress control the version of the NEP that the public will eventually be faced with, especially with the low veto rate of President Bush. In other words, the NEP that is signed into law will look quite different from the Bush-Cheney NEP, when the House and Senate finish their merging of special interests, and with this administration, the final energy bill will be primarily a Congressional product.

Senators Weaken Energy Requirement

It is well-known throughout the US that the Republican-dominated House of Representatives produced bill H.R. 4 that mirrored the NEP handed to them from the Bush-Cheney energy task force, which had very little, if any, environmental provisions (see Chapter II). The Senate, with the Democratic majority, was the last hope for saving the environment and the country's oil dependence. However, the Senate, voting for passage of a "pared-down" and "scaled-back" energy bill S-517, dismayed both the White House and the environmentalists. The Senate bill includes a provision for 10% of investor-owned utilities to come from renewable energy by 2020. The environmentalists



wanted a 20% renewable portfolio standard (RPS) by 2020, which the DOE proved would cost no more than business-as-usual (see Chapter II). The White House wanted no renewable requirement at all, even for 20 years from now.

Sen. Kyl, R-Ariz., said states should make their own decisions about the issue a position endorsed by the White House. Already, 11 states require that some power comes from

renewable sources, and 10 other states either have set goals or are considering a mandate for renewable use. An amendment that would have allowed these states to escape the national standard was turned back by a 57-39 vote as was a proposal that would have allowed governors to avoid the requirement if they deem it "adversely affects consumers."

Sen. Jeff Bingaman said the states could go beyond a national requirement, but allowing them to skirt the federal standards "totally guts the effect of the law." To gain broader support, Bingaman, D-N.M., offered to exempt municipal power companies and electric cooperatives, which together produce nearly 20 percent of the nation's electricity. Environmentalists said that because of the exemptions and other provisions, the amount of total electricity produced from renewables actually may come to less than 5 percent by 2020. That may be about what utilities might do anyway without a federal requirement, said Catherine Morrison of the U.S. Public Interest Research Group, a grass-roots environmental advocacy group. Today, less than 2 percent of electricity comes from renewable sources: solar panels, wind turbines, geothermal sources or biomass such as wood waste, grasses or agricultural residues. About 70 percent of

electricity is generated from coal or natural gas, and an additional 20 percent comes from nuclear power plants. Much of the rest is produced from hydroelectric dams, which are not considered a renewable source under the Senate legislation. "That's too much concentration. That's not smart," Bingaman said. The Senate last week rejected a more ambitious proposal that would have required one-fifth of the nation's electricity to come from renewable sources by 2020. "It's hard to understand why we would not want to have cleaner energy," said Sen. James Jeffords, I-Vt., sponsor of that proposal. Kyl said a renewable energy requirement was "basically an energy tax" because it would make electricity more expensive. Jeffords disagreed. He cited an Energy Department study that said power costs for some utilities might rise, but that they probably would not pass the increase on to customers. The House has passed a separate energy bill, which contains no renewable energy mandate (Ref: abcNews.com, March 22, 2002).

The Senate also weakened a requirement intended to get power companies to use more renewable fuels such as wind and solar power in generating electricity. Senators agreed to cut in half utilities' payments for credits that would allow them to avoid buying renewable fuels under a federal requirements already in the bill. The legislation requires generators of most of the nation's electricity to produce 10 percent of that power from renewable fuels by 2019 (10% RPS).

Sen. Don Nickles, R-Okla., sponsor of the change, said that the renewable fuels requirement would cost utilities tens of billions of dollars -- an expense customers would end up paying. "This is about an assault on ratepayers," Nickles said. For some utilities, he said, the credits would cost more than the fossil-fuel energy source they would replace. His amendment reduces the maximum price of the credits from 3 cents to 1.5 cents per kilowatt-hour. It was approved by voice vote after an attempt to kill it failed (see vote tally below).

Sen. Harry Reid said as a result of that lower price, many utilities would decide to buy credits instead of investing in renewable fuels such as wind turbines, solar panels, and agricultural and forest waste. "It is undermining what we're trying to accomplish," said Reid, D-Nev. The amendment was among a rush of last-minute issues senators debated and acted upon Wednesday as they moved closer to wrapping up the energy legislation on which the Senate has focused for nearly six weeks.

Senators approved a proposal by Sen. Tom Carper, D-Del., that promotes the use of combined heat and power facilities to produce electricity. These facilities are attractive to environmentalists because they use energy more efficiently than conventional power plants.

They rejected an amendment by Sen. Maria Cantwell, D-Wash., that would have directed stronger consumer protection measures by the Federal Energy Regulatory Commission in electricity markets. She said such measures were needed in the aftermath of market abuses by power providers in the West.

Sen. Jeff Bingaman, D-N.M., the bill's manager, said the legislation already offers adequate consumer protections "and will cure many of the problems" that surfaced in the West. The Senate also instructed federal agencies to find ways to streamline the relicensing of hydroelectric dams so it is easier to increase power generation from dams (Associated Press, April 24, 2002).

How Did Your Senators Vote?

As an example of the split in the Senate over renewable energy incentives, it is educational to see how the NEP is shaped by the responsible senators. On the motion

To Table Nickles Amdt. No. 3256, the votes were as follows. (Nay vote erodes incentives for wind and solar power.)

Nay 59

Allard (R-CO), Akaka (D-HI) , Allard (R-CO), Allen (R-VA) , Bayh (D-IN), Bennett (R-UT), Bond (R-MO), Breaux (D-LA) , Brownback (R-KS), Bunning (R-KY), Burns (R-MT), Byrd (D-WV), Campbell (R-CO), Cleland (D-GA), Cochran (R-MS), Corzine (D-NJ), Craig (R-ID), Crapo (R-ID) , DeWine (R-OH), Domenici (R-NM), Ensign (R-NV), Enzi (R-WY) , Feinstein (D-CA), Fitzgerald (R-IL), Frist (R-TN), Graham (D-FL) , Gramm (R-TX), Grassley (R-IA), Gregg (R-NH), Hagel (R-NE) , Hatch (R-UT), Hollings (D-SC) , Hutchinson (R-AR), Hutchison (R-TX), Inhofe (R-OK), Kyl (R-AZ), Landrieu (D-LA), Lincoln (D-AR), Lott (R-MS), Lugar (R-IN), McCain (R-AZ), McConnell (R-KY) , Miller (D-GA), Murkowski (R-AK) , Nelson (D-FL), Nickles (R-OK) , Roberts (R-KS), Santorum (R-PA), Schumer (D-NY), Sessions (R-AL) , Shelby (R-AL), Smith (R-NH) , Smith (R-OR), Specter (R-PA), Stevens (R-AK) , Thomas (R-WY) , Thompson (R-TN) , Thurmond (R-SC), Voinovich (R-OH) , Warner (R-VA)

Yea 38

Baucus (D-MT) , Biden (D-DE) , Bingaman (D-NM), Boxer (D-CA) , Cantwell (D-WA) , Carnahan (D-MO), Carper (D-DE) , Chafee (R-RI) , Clinton (D-NY) , Collins (R-ME) , Conrad (D-ND) , Dayton (D-MN) , Dodd (D-CT) , Dorgan (D-ND) , Durbin (D-IL) , Edwards (D-NC) , Feingold (D-WI), Harkin (D-IA) , Inouye (D-HI) , Jeffords (I-VT) , Kennedy (D-MA), Kerry (D-MA), Kohl (D-WI) , Leahy (D-VT) , Levin (D-MI) , Lieberman (D-CT) , Mikulski (D-MD), Murray (D-WA), Nelson (D-NE) , Reed (D-RI) , Reid (D-NV) , Rockefeller (D-WV) , Sarbanes (D-MD), Snowe (R-ME) , Stabenow (D-MI) , Torricelli (D-NJ) , Wellstone (D-MN) , Wyden (D-OR)

Not Voting: 3

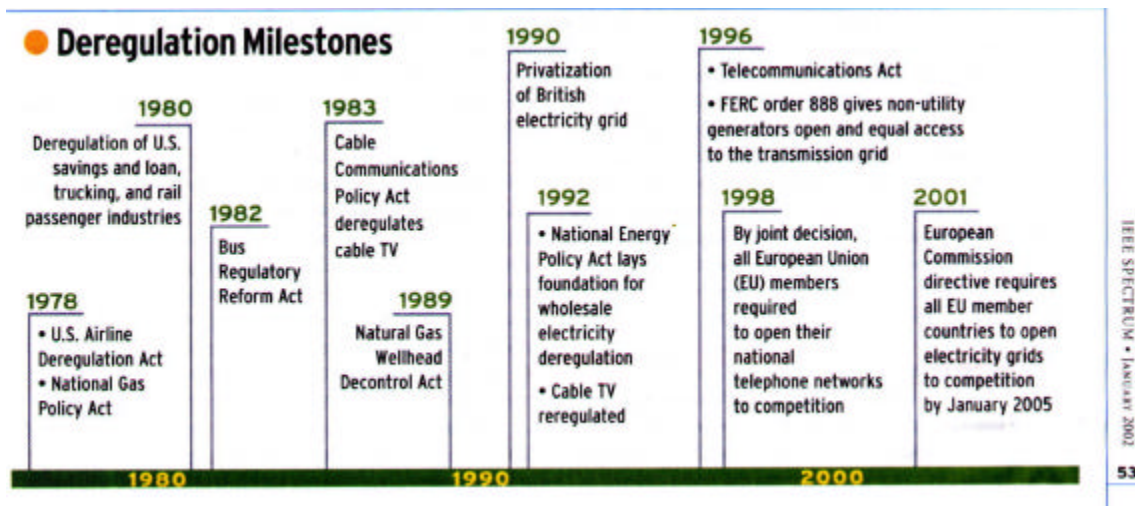
Daschle (D-SD) , Helms (R-NC) , Johnson (D-SD)

Apparently, a lot of senators believed that the Nickles Amendment, reducing the value of renewable credits, was too costly to fossil fuel users. Even the Senate demonstrates how fossil fuel industrialists dominate US energy policy. This tally above shows how easily Congress can be swayed by inflammatory language like “assault on ratepayers” which also devalues renewable energy.

Electricity Deregulation is to Blame

A major issue causing accusations of irresponsibility and energy woes, influencing the shape of the NEP, is the federal deregulation of electrical utilities. In a regulated industry, services are provided by a single of a fixed few companies, monitored by a government authority set up to protect the public interest. In exchange for its accountability, the industry is assured of a modest yet still satisfactory rate of return, often made more attractive to investors with tax breaks. The authority is supposed to have a close relationship with industry, after working closely for decades and so regulators and regulated utilities actually agreed on most issues. Removing the regulatory body and adding competition produced initial results that were impressive. However, even before California’s problems, reliability problems and price spikes were on the rise throughout the US, coinciding uncomfortably with the period in which the Federal Energy Regulatory Commission (FERC) ordered the national transmission networks to open to competition. Critics complained that infrastructure was not being maintained because newly competing companies seeking to cut costs were uncertain

how investments would be repaid in the long run. Even today, this is still an unresolved issue, with virtually no upgrade nor maintenance going on, causing the NEP to address the nation's electricity transmission grid as a high priority. Deregulation thus caused such an unexpected crisis in the maintenance of the grid, that the NEP had to make a big deal about it. As a result, the DOE made it the first order of business after the release of the NEP and produced a National Transmission Grid Study (NTGS 2001) in record time (see Chapter III). Once again, the federal government had to intervene where deregulation was failing.



Deregulation has had a rocky road in the airline industry and in the communications market. The author of *The Economics of Regulation*, Alfred Kahn, helped shape the airline deregulation but is not so optimistic about electricity deregulation. "In New York, under regulation, we required generators to maintain 18% reserve capacity. California didn't retain such a requirement, and when peak demands soared, there wasn't a guaranteed margin of surplus capacity to keep prices from exploding. And since consumers were never confronted with those price spikes—they were rolled into their monthly bills—they had no means of protecting themselves by curtailing their purchases at those particular times and places." Kahn also thinks a windfall profits tax would probably work better than creating price caps for a deregulated electrical industry (Ref: *IEEE Spectrum*, January, 2002).

With this brief introduction to the electricity deregulation nightmare, we can now survey and appreciate the Senate's attempt to deal with the problems created by deregulation. The Senate energy bill tried to balance the intent of deregulation addressed in the NEP with provisions for consumer protection with mixed results. Below is a very revealing transcript of Senator Cantwell's concerns about the major issues involved with deregulation, that was judged to be sufficiently valuable to appear in the *New York Times*:

Senator Cantwell's Statement on Consumer Protection Amendment to Energy Bill

"Mr./Mdme. President, I rise today to offer an electricity consumer protection amendment to the flawed deregulation provisions in the energy bill.

"It is not widely known that the electricity title in this bill includes new provisions to further deregulate our energy markets. Indeed, many of these provisions were included without adequate opportunity for review by this body.

"For the first time, this bill gives the Federal Energy Regulatory Commission the statutory authority to allow market-based rates, a key component of deregulation. It also lowers the standard by which mergers of utilities can take place and repeals a current law that had been a cornerstone of consumer protection. Given the sweeping changes in this bill, I think we must proceed very cautiously on this path towards further deregulation.

"After last year's energy crisis, we should be asking ourselves how better to protect consumers, not how to make it loosen the rules for how utilities must operate in the marketplace. My amendment is written to protect consumers from a repeat of last year's Western energy crisis.

"After all we have learned from the energy crisis and the collapse of Enron, it is plain to see that we need a clear set of rules to ensure fair play in deregulated energy markets. The fact is, that consumers deserve efficient electricity markets with adequate protections and effective oversight.

"As the bill now stands, we are giving the Enrons of the world more power to manipulate markets. In fact, without a consumer protection amendment, this bill sends the special interests in the energy industry a special present: virtual free reign to overcharge consumers.

"Mr./Mdme. President, these are common sense ideas. That's why this amendment has gained the support of a wide range of consumer, industry, local government, and environmental groups. They are united behind the idea that we should protect consumers from this bill's energy deregulation plan.

Support From Co-Sponsors and Groups

"I am pleased to be joined by Senators Dayton, Wellstone, Feingold, Boxer, Wyden, Murray, and Stabenow in this effort.

"Groups ranging from the American Association of Retired Persons to the American Public Power Association to the Consumers Union and the Sierra Club to the U.S. Conference of Mayors all stand behind the consumer protection measures in this amendment.

"The full list of supporting groups also includes the Air Conditioning Contractors of America, Consumer Federation of America, Consumers for Fair Competition, Electricity Consumers Resource Council, National Association of State Utility Consumer Advocates, National Environmental Trust, National League of Cities, National Rural Electric Cooperatives Association, Natural Resources Defense Council, Physicians for Social Responsibility, Public Citizen, Transmission Access Policy Study group, Union of Concern Scientists, and US Public Interest Research Group.

"Their voice is loud and clear: after last year's energy crisis, it unacceptable to launch a new round of deregulation without first putting in place adequate consumer protections.

"I'd like to read from a letter signed by the Consumers Union, Sierra Club, NRDC, Consumer Federation of America, and others:

(Letter, cont.) "This amendment would add important and much-needed protections to legislation that actually repeals already weak consumer protections in current law. S. 517 repeals most of the Public Utility Holding Company Act (PUHCA), including provisions that have been in place for over six decades, and does almost nothing to ensure that consumer protections will be maintained. Now, with the exposure of Enron's questionable trading deals, we need these protections more than ever to prevent energy

companies from manipulating prices and supply. We need to strengthen consumer protections, not weaken them.”

"Consumers for Fair Competition wrote: "In the wake of the West Coast electricity crisis and Enron collapse, Congress should only pass electricity legislation if it takes needed steps to protect consumers and prevent a repetition of these crises."

"Mr./Mdme. President, I would like to enter into the record letters of support I have received from these organizations.

Impact Of Western Energy Crisis On Consumers

"My constituents and the constituents of my colleagues from the West, particularly California, Oregon, and Idaho, have seen first hand the devastation caused by the Western energy crisis: wholesales rate spikes of more than 1,000%; aluminum workers put of out of work because electricity costs were too high for their companies to operate; and an economic slump in California, Oregon, and Washington directly related to last year's high energy prices.

"In my home state of Washington we are still paying the price for the lack of consumer protections during the energy crisis. Ratepayers in my home of Edmonds, Washington are paying 88% more than they did before the crisis, with no relief in sight. When I go home to work in the state, I find that my mom keeps the temperature set at 65 degrees because energy prices are so high. The high cost of energy is literally eating a hole in the pocket of consumers.

"Nowhere do consumers know the importance of proper safeguards more acutely than in the West. In the wake of what happened there, why would we would even consider reducing consumer protections and lowering legal standards? Why would we promote further deregulation and at the same time abandon consumer protections?

"Ask anyone from California whether they want more deregulation without consumer protection. They'll all tell you the same answer: after Enron and the western energy crisis we should strengthen consumer protection laws, not weaken them. They know that with out adequate consumer protections electricity markets may not work to protect consumers. They know it because they've seen it time after time. It's the oldest game in the book, and they hate it.

"One need look no further than a February 2001 poll in which California residents were asked if they supported the legislature's decision to deregulate the electricity market. By nearly 40%, Californians opposed the deregulation plan. A July 2001 survey by the Mellman Group revealed that North Carolinians opposed deregulation by a 14% margin and by a 40% margin thought that deregulation would cause rate increases. In March of this year, a different Mellman survey showed that 60% of Montanans thought that deregulation had caused higher electricity rates.

PUHCA and The Federal Power Act

"Mr./Mdme. President, I think it is important to review how we got to this point, beginning with the first major piece of legislation to protect ratepayers, passed during the first term of Franklin Delano Roosevelt's presidency.

"In the 1920s our system of utility regulation began to fail consumers. Complex corporate structures made it impossible to offer adequate consumers protections. By 1932, 45% of all electricity was controlled by three groups. Because of their market power and complex and misleading corporate structure, the utilities owned by these

holding companies were able to charge excessive rates which were passed directly to consumers.

"In response to this situation, this body passed into law the Public Utilities Act of 1935 to help bring the system under control and offer consumers adequate safeguards. The two key titles of the Public Utilities Act – PUHCA and the Federal Power Act – put in place important consumer protection regulations. PUHCA required utilities to either largely operate within a single state, or be subject to strict federal regulation by the SEC. The Federal Power Act created a consumer protection framework for the transmission of electricity in interstate commerce and wholesale rates for electricity.

"Today, we are faced with an energy bill that repeals key consumer protections from these pieces of legislation without offering new protections for a new environment. I do think we should update our laws regulating energy markets to reflect new technological and economic conditions. But we must do so with consumer protection in mind.

"Just think about the energy crises of the past. In the 1920s, when corporate structures got out of control and retail consumers suffered the consequences, we responded with the Public Utilities Act. During the 1970s energy crisis, we responded with the Public Utility Regulatory Policies Act.

"But today we are faced with the prospect of responding to the Western energy crisis of 2001 with more of the same medicine which helped cause the crisis in the first place. I believe the Western energy crisis was really precipitated by two factors: obviously, California adopted a restructuring plan without adequate thought and deliberation, and the fact that FERC, the Federal Energy Regulatory Commission, signed off on it. Then FERC allowed generators in the West to charge market-based rates without first ensuring that those markets were sufficient in their competition and that they were adequately monitoring those markets over time.

"The definition of insanity is watching something fail and then doing it again. And that is what we are headed towards doing. It would be insane for us to enact further flawed deregulation without at least addressing the importance of providing consumer protections.

"And consumers know that they are ultimately the ones who will get stuck holding the check. And they are right. Mr./Mdme. President, this amendment addresses the need for consumer protection from deregulation by creating safeguards from potential market failures and abuses.

"The amendment would prevent a repeat of soaring electricity rates in deregulated markets by directing FERC to establish rules and enforcement procedures for market monitoring to protect electricity consumers.

"The market rate provisions of this amendment are actually quite simple in concept. For the first time in this bill, Congress would give FERC the statutory authority to allow energy companies to charge market-based rates — a lynch-pin in the move toward deregulating our nation's energy markets.

"Mr. President, I believe that it's crucial that before we go further down that path, FERC needs statutory guidance on just what factors it should consider before it allows market-based rates to be charged. That is, before FERC opens up energy markets, it should have to ensure that those markets are going to operate efficiently and not gouge consumers.

"The bill as currently written does not offer adequate consumer protections, especially in view of the House of Representatives' own electricity bill, which reads like a wish list for big energy companies.

Problems With The Current Bill

"The bill as currently written does not offer adequate consumer protections, especially in view of the House of Representatives' own electricity bill, which reads like a wish list for big energy companies.

"The electricity provision of this bill right now actually lowers the overall merger standard, repeals PUHCA, and transfers the review from the SEC to FERC.

"The provision in our amendment would maintain current law with regard to the merger standard. This is an important point. Some will argue that maintaining current law is somehow too onerous. But I don't believe that's true at all.

"In fact, there have been 30 major utility mergers and acquisitions over the past three years alone. This is a testament to the need for laws that protect consumers from consolidation in the utility sector. It is also a powerful reminder that current law is in no way too prescriptive. And maintaining the merger standard currently on the books is all we're doing with this amendment.

"The electricity provisions in this bill also fall short on the issue of insulating consumers from the economically devastating effects of energy markets gone horribly awry. The primary difference between the Senate energy bill as it's currently written and what we're trying to accomplish with this amendment is simple. It's the difference between preventing dysfunctional markets from happening in the first place, and post hoc investigations that are unlikely to provide relief for consumers harmed by skyrocketing energy prices.

"I don't think many of my colleagues realize that this bill, for the first time, gives FERC explicit statutory authority to allow companies to charge market-based rates. Mr./Mdme. President, FERC decided administratively to start allowing market-based rates in the mid-1980s, without specific Congressional direction.

"And while the Energy Policy Act of 1992 affirmed the direction FERC was moving regarding the opening of the nation's transmission system, it did not contain this explicit authority for FERC to grant market-based rates.

"In sifting through the ashes of the California experiment, it is now obvious that FERC did not pause to consider the constraints—whether real or manipulated—on natural gas transportation into the state, which in turn drove up the price of electrical generation. FERC approved a system without assessing the market power of what became known as the "big five" energy companies in the California crisis—including the Enron.

"It is also clear that FERC approved the California proposal without assurances that the state's Independent System Operator (ISO) could effectively monitor market conditions. I have heard from numerous utilities involved in the California market that the ISO began declaring emergencies purely subjectively because its mechanisms for assessing where physical megawatts actually existed—and whether these shortages were real or imagined – were so incredibly flawed.

"In addition, it has been repeatedly alleged that the ISO declared these emergencies for political reasons—because utilities such as those in my state were obligated to sell into the California market, first under a Department of Energy order and later under an order

from FERC itself, when emergencies were declared. FERC did not have the market monitoring practices in place that it would need to assess these claims.

"In summary, the essence of our amendment is the notion that it should be FERC's job to prevent flawed deregulation if it is their job to allow market-based pricing. But with this legislation, we would explicitly permit them to authorize market-based pricing while at the same time lowering the legal standards for utility mergers and without first putting in place adequate oversight. To that end, it requires FERC to put in place rules and procedures necessary to:

- (1) maintain competitive markets;
- (2) effectively monitor markets;
- (3) prevent the abuse of market power and manipulation
- (4) and ensure the maintenance of just and reasonable rates.

"The amendment would also require utility mergers to advance the public interest and for utility books to be fully open. It would protect consumers from absorbing the costs of utility diversifications and prevent them from subsidizing unrelated affiliate ventures on the backs of consumers.

"Mr./Mdme. President, this amendment does not take away FERC's authority to allow market-based rates. It does not stop the move towards deregulation. In fact, it is entirely consistent with the concept of deregulation. It simply says that we need a roadmap for consumer protection in this new market-oriented environment.

"I am reminded by something FERC Chairman Pat Wood said on March 11. "I'm probably the world's biggest believer in markets," Wood said. "But I'm also the world's biggest believer that people will take advantage of it if they don't have a cop walking down the street."

Conclusion

"Mr./Mdme. President, this amendment provides the cop walking down the street for our electricity markets. With all that we have read and seen of what happened during the Western energy crisis and the role that Enron and other power companies played in it, how can we even consider further deregulation without putting in place real consumer protections? It is practically malpractice for us to even think about new deregulation without also thinking about how to protect consumers. We ought to beef up consumer protections, not water them down.

"This is a critical amendment for consumers. We need to show consumers that we will work to protect them from further deregulation. This amendment accomplishes that goal.

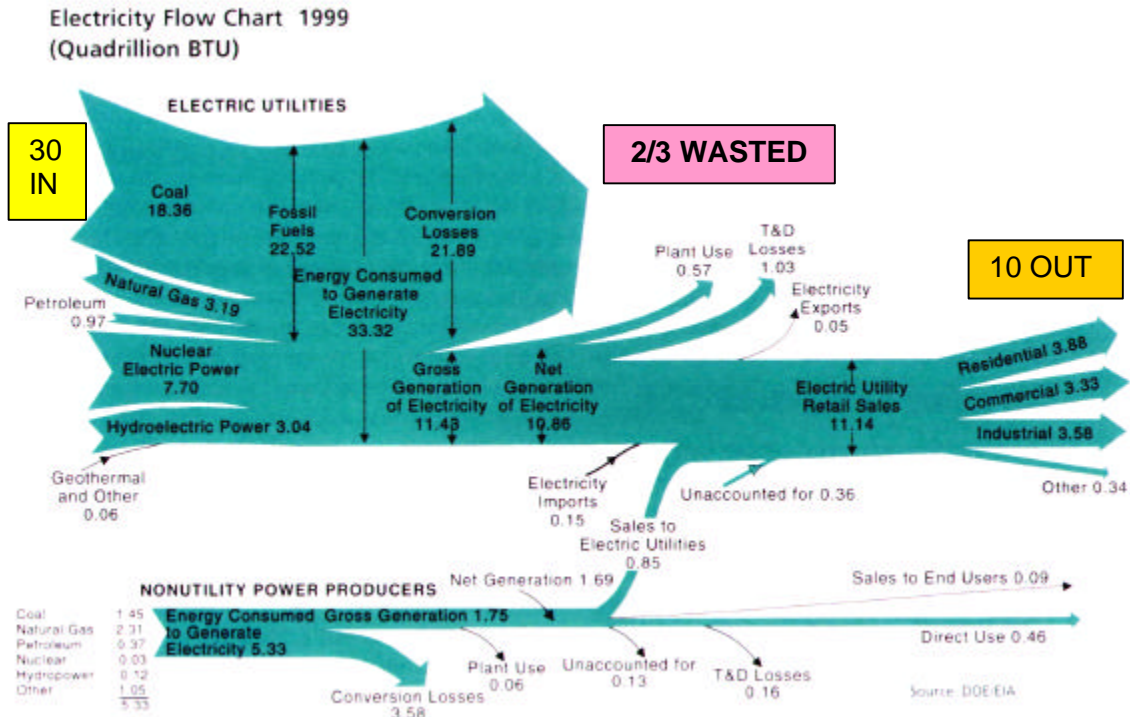
"Mr./Mdme. President, I yield back the balance of my time" (Ref: <http://www.nytimes.com/aponline/national/AP-Energy-Bill.html>).

Energy Transmission Wastefulness

In this chapter devoted to NEP blame and benefit, a major source of trouble and wastefulness has only been superficially described. A 20th century debacle has grown so large and monstrous in the US, weaving its way into every corner of the country, that it is simply overlooked, taken for granted, and not even declared unsightly by anyone. Built for only one reason, the nation's electricity transmission grid recycles the same electrons over and over again through everyone's home and business, collecting money repeatedly for each electron, for each cycle and for each hour. We have grown so accustomed to its piracy of thousands of acres of deforested land, treated with the worst

Viet Nam defoliation conceivable, that we don't have any environmental group complaining about it. Let us forget the inventor's dream of AC electricity (Nikola Tesla) and how it was really intended to work globally, it is sobering to review the facts.

One hundred years ago, J. P. Morgan started funding and then prohibited Nikola Tesla from finishing his Long Island project called the "Wardenclyffe Tower" designed to broadcast electrical power, through extremely low frequency (8 Hz) electromagnetic waves, to the rest of the world. Morgan, in a famous confrontation with Tesla, challenged him saying, "If I can't put a meter on it, then it won't be built." Tesla believed that free energy (low cost electrical generation) was possible and he wanted to make it easy for everyone to use. Mainly, Tesla's vision excluded the costly infrastructure called the electrical transmission grid, which today is still causing grief, with the NEP and DOE studying the problem. Third world countries find that such an investment is prohibitive and are looking for other distributed sources of power instead. While deregulation and the NEP centers on the problems with upkeep and expansion of the grid, the public deserves to know what price Americans pay every day for the centralized electrical utility service that Morgan insisted upon. On this page is a graph prepared by the US Energy Association showing the amazing 2/3 energy waste caused by conversion and resistance losses in the miles of transmission lines (Ref: *Toward a National Energy Strategy*, USEA, 2001). Any educated consumer, knowing there is an alternative called distributed or dispersed energy, should avoid contributing to the use of this antiquated transmission wastefulness.



In the future, as more responsible political and industrial leaders take control of the use of energy in our country, much more efficient means for generation will be available. The thirty quadrillion Btu (quad), which equals about 10 quadrillion watt-hours of energy, is really what we are paying for in the Electricity Flow Chart from USEA. Instead, what is actually delivered to the end user is a measly 10 quads (3.4 trillion kWh) **with 7 trillion kWh (2/3) lost in the conversion process.** (Ironically, our automobiles are even less

efficient than this.) Regarding the NEP, these lost 20 quads exceed the amount of energy that Cheney desired with his demand **for two power plants per week for the next 20 years** (2080 x 300 MW x 8760 hrs = **5.5 trillion kWh**). In other words, the US is already generating the amount of power the NEP wants for 2020 energy demands. Just get rid of the transmission and conversion losses. This leads us to the 21st century, emerging energy technology, designed to be on-site, distributed sources of energy, which are becoming a major trend in industry today. They are not susceptible to blackouts nor brownouts either. Therefore, the dream of global economists may still be realized when enough altruism overcomes the industrialist-government stranglehold.

This vision of Nikola Tesla's wireless transmission of power, for example, would eliminate the 2/3 loss cited above. It has only a 5% estimated loss factor and has also been given a feasibility approval by Dr. James Corum, U. of West Virginia, Dr. Elizabeth Rauscher, Technics Inc., Kurt Van Voorhies, PhD, PE and others (Ref: *Harnessing the Wheelwork of Nature, Tesla's Science of Energy*, Valone, 2002).

Conclusion

It is up to Congress, the public, and visionary entrepreneurs to remake the wasteful 20th century energy hardware into 21st century efficiency, if we are to survive. (Some organizations are now saying 2050 is our limit as a civilization.) Then our future will not be devoted to dead fossils nor filled with pollution as the NEP wants to allow. Instead, we may realize the "essentially inexhaustible sources of energy" that Robert Seamans envisioned for our future in 1975 with ERDA-48. **As Hubbert's peak grows nearer, a shift to new primary forms of energy, as outlined by Seamans, is required more than ever.** He said that the changes "should be made rapidly and simultaneously..." in order to realize energy independence. Since energy drives our economy, US citizens just have to decide that Seaman's vision is more desirable than more combustion-caused pollution, continued economic uncertainty, and another war for oil. We will all benefit from such a decision, not just industry.

The Alternative Energy Institute

The Alternative Energy Institute, Inc. (AEI) is a non-profit, educational organization dedicated to advancing public awareness regarding current energy problems and possible solutions. AEI's focus is to help ensure a smooth transition from dependence on dangerous and polluting forms of energy to a more vital, healthier world. AEI publishes a comprehensive website covering these and related fields in layman's language. Bridging the gap between the scientists and engineers in the new energy field and the general public, AEI provides accurate, understandable and compelling news about energy use, new energy developments, and the complex social, environmental and political consequences of our current energy usage.

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