In order for coal and coal-fired power generation to increase its role in meeting the nation's electricity requirements and energy needs, a number of actions would be helpful.

1. Enactment of legislation similar to S.60, the National Energy and Environmental Technology Act which was introduced earlier in this Congress by Senators Byrd and McConnell and has bipartisan support of approximately eight Senators — including the ranking member of the Senate Energy Committee, Senator Bingaman and the Democratic Whip in the Senate, Senator Reid. The concept of S.60 had the support in the previous Congress from Senator Abraham. Its provisions are expected to be included in the comprehensive energy legislation to be introduced by Senator Murkowski on February 26. The following material explains the rationale for S.60 and its justification.

2. A number of constraints to the continued economic availability of coal-fired power are presented by approximately 15 separate regulatory actions dealing with SO2, NOX and mercury which are either pending at the EPA or in litigation. It would be very important for DOE to take on a leadership role within the federal government to bring rationality to the plethora of regulatory actions directed at coal-fired power by the previous administration. Doug Carter (586-1650), policy analyst in Fossil Energy, is very articulate on this issue.

3. To make improvements either for environmental performance or increased efficiency of existing coal-fired power plants and to facilitate the construction of new coal-fired power plants and necessary transmission facilities, it is very important to give a priority focus to issues associated with siting and permitting. We would recommend an Executive Order, fashioned along the lines of the recent Executive Order addressing California's energy needs, that gives the DOE lead responsibility in ensuring priority focus on siting and permitting actions by the various federal agencies involved and facilitating those actions with the appropriate state authorities.
4. DOE should become involved in issues associated with access to coal reserves and the permitting of coal operations from an energy standpoint which will grow out of a draft Environmental Impact Statement (EIS) anticipated to be published in draft form by EPA imminently. This EIS grew out of the "mountaintop mining" controversy in 1999. Similarly, DOE should take an active role in insuring the federal coal leasing program is administered in a way which insures timely access to the development of coal reserves on federal lands.

5. In addition to combustion technology and coal preparation, DOE should continue to focus its research activities in the area of alternative fuels from coal, such as liquids, with specific targets and timetables for development of cost-effective technologies to make greater utilization of our nation's coal reserves.

Under separate cover I will forward a recent study completed for the Edison Electric Institute entitled Fueling Electricity Growth for A Growing Economy. This study was conducted by the National Economic Research Associates and was published on January 15, 2001. It identifies the significant impediments to the expanded economic use of coal-fired power generation.

You should be aware that the National Coal Council, an advisory group to the Secretary of Energy, established by Secretary Hodel in 1989, was requested by former Secretary Richardson to report back by mid-April on obstacles to greater utilization of existing coal-fired power generation facilities. The initial draft of that report should be completed in early March. The Coal Council's recommendations should be helpful to your work.

Finally, under separate cover, you will also receive a chart we developed which identifies new additions in coal-fired generation capacities in the United States between 1980 and the year 2000 and a copy of our DOE transition paper. The chart shows that a significant amount of new coal-fired capacity is brought on-line in the 1980s and is currently helping to meet our nation's energy needs. Since 1990, relatively little low-cost, coal-fired power has been brought on line. Legislation such as S.60 will help provide incentives for construction of new coal-fired capacity that is more efficient in terms of producing electricity with improved environmental results. EIA projects that by 2020 we will need 45 percent more electricity (over 1200 power plants) in the United States. To assure the availability of reliable, low-cost power, it is important that utilities have the flexibility to build coal-fired power.

Please call (202-463-2653) with any questions.
attachments

<<NATIONAL ELECTRICITY AND ENVIRONMENTAL TECHNOLOGY ACT prelim
Of env. benes.doc>> <<NEET Outline - Title V 22101.doc>> <<NEET
Overview - Policy Rationale 22101.doc>> <<NEET slides 22101.PPT>>
NATIONAL ELECTRICITY AND ENVIRONMENTAL TECHNOLOGY ACT
(NEET)
Preliminary Estimate of Environmental Benefits

Enactment of the National Electricity and Environmental Technology Act (NEET) would provide cost sharing for investment by the electricity generating industry for pollution control and repowering technology. It is projected that 50% of the owners of eligible units greater than 300MW would retrofit these units with a system(s) of continuous emission control to control emissions to levels of the new source performance standards for steam-electric generating units. It is projected that one-third of the operators would install flue gas desulfurization (FGD) for the control of sulfur dioxide, one-third would install selective catalytic reduction (SCR) for the control of nitrogen oxides and one-third would install both FGD and SCR. It is also projected that between 10% and 25% of the operators of units of 300MW or less would repower these units to control emissions to levels of the new source performance standards for steam-electric generating units and increase their thermal efficiency by at least 500 Btu per kilowatt hour. The completion of these installations is projected to coincide with any new or anticipated regulatory requirements for eligible units. Furthermore, it is anticipated that the availability of the tax credits will result in the installations of controls before it may have otherwise occurred.

The projected reduction in emissions from the retrofit of systems for continuous emission control and repowering are significant. Nitrogen oxide emissions are projected to be reduced by over 740,000 tons per year, a 24% reduction from 1999 levels. Sulfur dioxide emissions are projected to be reduced by over 2,457,000 tons, a 28% reduction from 1999 levels. Despite the fact that the installation of systems of continuous emission controls decreases unit efficiency and increases carbon dioxide emissions by 2%, the reduction in carbon dioxide emission from the repowering applications are projected to result in a net reduction of over 11,722,000 tons, a 0.9% reduction from 1999 levels.

### Projected Emission Reductions

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<thead>
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| **Total Emission Reduction, Tons** | 741,838 | 2,457,412 | 11,722,616 |
| **Percent Emission Reduction**     | 24%    | 28%      | 0.9%      |

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| **Percent Emission Reduction**     | 21%    | 22%      | 0.1%      |
OUTLINE
The National Electricity and Environmental Technology Act

Title I Accelerated technology research and development program for new and existing coal-based generation facilities

- Authorizes the Secretary, in consultation with the private sector, to establish R&D cost and performance goals that can be achieved by 2007, 2015 and 2020 by existing and new coal-based generating facilities.

- Authorizes the Secretary to study the technologies capable of achieving the performance goals and make recommendations for the programs required to develop those technologies.

- Authorizes the appropriations necessary to carry out the RD&D program to advance the technologies identified in the study as being capable of achieving the cost and performance goals.

- Authorizes the Secretary to carry out a power plant improvement initiative that will demonstrate commercial applications to new and existing plants of coal-based technologies that will advance the efficiency, environmental performance and cost competitiveness beyond that of facilities in service or demonstrated to date.

- Authorizes 50% private sector cost sharing along with the use of uncommitted Clean Coal Technology program funds to provide the federal share of the demonstration projects.

Title II Tax credits for emission reductions and efficiency improvements in existing coal-based generating facilities

- Establishes a 10% investment tax credit for investments in systems of continuous emissions controls retrofitted to existing coal-based electricity generating units.

- Establishes a production tax credit (0.34 cents/kWh) for the first 10 years of electricity output from existing coal-based generation units that are repowered with qualifying clean coal technologies.

Title III Tax credits for early commercial applications of advanced coal-based generating technologies

- Establishes a 10% investment tax credit for investment in qualifying advanced coal-based generating technologies for use in new or repowered units.

- Establishes an efficiency-based production tax credit for electricity generated during the first 10 years of operation of a new or repowered unit using qualified advanced coal-based generation technologies. In subsequent years, eligible technologies must achieve increasingly higher levels of efficiency to qualify for the credits.

- Establishes a risk pool amounting to 5% of the cost of the new technologies to help defray the cost of any modifications necessary to achieve design performance levels.

Title IV Refundable or offset credits for electric cooperatives, publicly owned electric utilities and the Tennessee Valley Authority

- Establishes refundable or offset tax credits for electric cooperatives and publicly owned electric utilities.

- Establishes an offset against payments required as an annual return on appropriations by the Tennessee Valley Authority.
OVERVIEW
The National Electricity and Environmental Technology Act

The National Academy of Engineering recently identified "Electrification – the vast networks that power the developed world" as the single most important achievement of the 20th century. The economy of the 21st century will require increased amounts of reliable, clean and affordable electricity. Coal, the nation's most abundant energy resource, can help meet these requirements if new technologies are developed and deployed to convert this resource to electricity more efficiently and cleanly.

Background

- By the year 2020, U.S. electricity consumption is projected to grow 35% and worldwide electricity is projected to grow by 70%.

- Today, more than one half of U.S. electricity is generated from abundant, low-cost, domestic coal.

- On average, the cost of electricity from coal is less than one half the cost of electricity generated from natural gas or oil, and it is less than nuclear power.

- Coal constitutes more than 85 percent of U.S. fossil fuel resources, enough to last more than 250 years at current rates of consumption.

- Overall emissions from U.S. coal-based generating plants have been reduced by one third since 1970, even while electricity produced from coal has tripled.

Reasons for Stimulating Advanced Coal Generating Technologies

- Uncertainty about new environmental requirements and electricity deregulation, as well as optimistic projections about natural gas prices, have led generators to rely heavily on natural gas for new electric generating capacity. Consumption of natural gas for electricity generation is projected to triple by 2020.

- Average wellhead prices for natural gas in 2000 now exceed $9.00/mcf, well above the $3.66/mcf price DOE forecast for 2020. Large-scale conversion to natural gas generation could double retail electric prices – a significant hardship for low and fixed income consumers. It would also eliminate an advantage the U.S. enjoys in the world marketplace.

- Only expensive retrofit technologies can achieve the more stringent emissions limits being considered for existing coal-based generating facilities. Advanced technologies for converting coal into electricity can effectively eliminate health-based pollutants and substantially improve efficiency in new power generating facilities.

- Initial commercial deployment of new coal generating technologies entails significant risk which generators are unwilling to accept in a newly competitive electricity market.

The National Electricity and Environmental Technology Act provides a measure of burden-sharing to cushion the cost of improving the environmental performance of existing coal-based generating facilities. It also stimulates deployment of advanced technologies to further reduce emissions and improve efficiency in new generating facilities, allowing our most abundant domestic energy resource to help meet the nation's growing need for clean, reliable and affordable electricity.
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Obtained and made public by the Natural Resources Defense Council, March/April 2002
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Background

- By the year 2020, U.S. electricity consumption is projected to grow 35% and worldwide electricity is projected to grow by 70%.
- Today, more than one half of U.S. electricity is generated from abundant, low-cost, domestic coal.
- On average, the cost of electricity from coal is less than one half the cost of electricity generated from natural gas or oil, and it is less than nuclear power.
ACT
ENVIRONMENTAL TECHNOLOGY AND NATIONAL ELECTRICITY

January 2001
Congressional Briefing

Obtained and made public by the Natural Resources Defense Council, March/April 2002
Purpose

- Enact a comprehensive coal-based technology program to reduce emissions and stimulate deployment of advanced coal-based generating plants and improve efficiency in new generating facilities
- Demonstration program that provides tax incentives and/or financial assistance to deploy the initial commercial-scale applications of advanced coal-based technologies
- Financial incentives program designed to cushion the financial burden of applying technologies to existing coal units to improve emissions control and increase efficiency
- Program that addresses long-term technology needs to improve efficiency and reduce emissions from coal-based generation
- R&D program that addresses long-term technology needs to improve efficiency and reduce emissions from coal-based generation
Background

No program exists for supporting early commercial application of high risk, higher cost advanced coal-based technology. DOE Fossil Energy Program is supporting the development of advanced coal-based generating technology, but program does not have specific performance goals or milestones for commercial application.
Major Provisions

Title I
Accelerated Technology Research and Development Program for Advanced Clean Coal Technology for New and Existing Coal-based Electric Generating Facilities

Title II
Credits For Emission Reductions And Efficiency Improvements In Existing Coal-based Electricity Generating Facilities

Title III
Incentives For Early Commercial Applications Of Advanced Clean Coal Technologies

Title IV
Treatment Of Certain Tax-Exempt Entities
Title I -- Accelerated R&D Program

Part A - Establishment of a national coal-based technology development plan and applications program

Section 101 Purposes

Section 102 Cost and performance goals
   - establish cost and performance goals for technologies that are available in 2007, 2015 and after 2020
   - establish goals in consultation with industry and issue for public comment
   - after accounting for public comment, submit goals to Congress

Section 103 Study
   - identify technologies that are capable of achieving the goals
   - recommend programs to develop and demonstrate such technologies

Section 104 Technology research and development program
   - implement the R&D program identified in the study

Section 105 Authorization
   - $100 M per year -- 2002 through 2012
Title I -- Accelerated R&D Program

Part B - Power plant improvement initiative

Sec. 121 Power plant improvement initiative program
- demonstrate commercial applications of advanced coal-based technologies applicable to new and existing power plants and co-production facilities
- Conduct 50MW or greater demonstrations that achieve levels of performance well beyond current or demonstrated levels for:
  - significant improvements in
    - efficiency, or
    - environmental performance
  - cost competitiveness

Sec. 122 Financial assistance
- solicit and select 50% cost shared projects
- applicable to 25% of existing fleet of coal-based generating plants

Sec. 123 Authorization
- redirect excess Clean Coal Technology program and other funding to carry out program
Title II -- Credits for Existing Units

Sec. 201 Credit for investing in qualifying clean coal technology
- 10% investment tax credit on 1st $100 million investment in a qualifying system of continuous emission control installed on an existing coal-based generating unit
- exempt from new source review
- 10 year “safe harbor” for pollutant controlled to NSPS level

Sec. 202 Credit for production from a qualifying clean coal technology unit
- production tax credit of 3.4 mills/kWh during 1st 10 years of production from an existing unit, 300MW or smaller, repowered with a qualifying clean coal technology
- qualifying clean coal technology must reduce heat rate by not less than 500 Btu/kWh or achieve a heat rate of less than 9,000 Btu/kWh
- exempt from new source review
- 10 year “safe harbor” from further regulation under Clean Air Act
Title III -- Incentives For Advanced Clean-Coal Technology

- Sec. 301 Credit for investment in qualifying advanced clean coal technology
  - 10% of total investment in qualifying advanced clean coal technology with a design efficiency of not less than 36%
  - Qualifying facilities:
    - a total of 5,000MW advanced pulverized and atmospheric fluidized bed combustion
    - a total of 1,000MW pressurized fluidized bed combustion
    - a total of 2,000MW gasification combined cycle
    - a total of 2,000MW unspecified technology with 15% efficiency improvement

- Sec. 302 Production tax credit
  - 10 year variable rate based on date placed in service and design heat rate (greater efficiency required to qualify in later years)
  - Multiple demonstration periods for facilities placed in service:
    - Before 2008 with a design efficiency of 39% to 41%
    - After 2007, before 2012 with a design efficiency of 41% to 44%
    - after 2011, before 2016 with a design efficiency of 44% to 46%
  - exempt from new source review and 10 year “safe harbor” for pollutant controlled to NSPS level
Title III -- Incentives For Advanced Clean-Coal Technology (continued)

- Sec. 303 Risk pool
  - Establishes a risk pool to defray the cost of any modifications required to achieve the design performance
  - Not to exceed 5% of total investment
  - Available during first three years of operation
Title IV -- Treatment of Certain Tax-Exempt Entities

- Sec 401 Credits or offsets for cooperatives and publicly owned utilities
  - Establishes refundable or offset tax credits for electric cooperatives and publicly owned electric utilities

- Sec. 402 Offsets for annual payment obligations
  - Establishes an offset against payments required as an annual return on appropriations by the Tennessee Valley Authority
Environmental Benefits

- Retrofit of systems of continuous emission control that achieve the new source performance standard levels will:
  - significantly reduce NOx and SO2
  - increase efficiency and decrease CO2

- Repowering with technologies that achieve the new source performance standard levels and increase efficiency by 5% will:
  - significantly reduce NOx, SO2 and CO2

- Total emission reduction
  - NOx - 24%-21% (742,000 - 631,922 Tons)
  - SO2 - 28%-22% (2,457,000 - 1,922,341 Tons)
  - CO2 - 0.9%-0.1% (11,722,000 - 1,246,481 Tons)
Investment and Revenue Impacts

- $48 billion projected capital investment by owners of coal-based generating units who install systems of continuous emission control or repowering technology
  - 50% of eligible units over 300MW are projected to retrofit systems of continuous emission control
  - 10% -25% of units equal to or less than 300MW are projected to repower
- $1.7-$2.2 billion projected revenue impact for 1st five years
- $3.2-$4.5 billion projected revenue impact for 2nd five years
- Total revenue impact projected to be $8.3-$11.2 billion over 24 years