We recognize that these certificates and permits need to be “updated” to capture changes in technology, markets and environmental requirements. We will do such updating, and it can be done within the ANGTA framework. To that end, a couple of additional points need to be emphasized before I move on to the State permits.

- First, ANGTA clearly envisions and provides for the ability to condition and to amend these permits. These powers are subject only to the limitation prohibiting changes in the “basic nature and general route” and actions that will “otherwise” prevent or impair in any significant respect the expeditious construction and initial operation of the Alaska Highway Project.

- Second, the Alaska Highway Project sponsors’ requests for both new permits and amendments to existing permits must be given priority under ANGTA. This priority translates into a timing advantage for the Alaska Highway Project.

- Third, the authority of the Office of Federal Inspector, as transferred to the Secretary of Energy, also continues in effect today to expedite and coordinate federal permitting, enforcement of permit conditions, and facilitation and oversight of the construction and initial operation of the U.S. portion of the Alaska Highway Project.

- Fourth, ANGTA also provides for expedited and limited judicial review of actions taken by Federal agencies and officers.

- Finally, the Alaska Northwest Partnership is well along in permitting the Alaska Highway Project.

The Alaska Permits – State of Alaska

On the state side, Alaska Northwest has a pending State of Alaska right-of-way lease application. Recently, we have initiated discussions with the State officials regarding perfecting and processing the pending application. Also at the state level, Alaska Northwest holds certificates of reasonable assurances issued pursuant to Section 401 of the Clean Water Act and a determination of consistency with the Coastal Zone Management Act.
Additional Alaska Permits

While Foothills already holds the major permits necessary to construct the remainder of the Alaska Highway Project, there are additional permits and authorizations that will need to be obtained. For example, the Alaska Highway Project sponsors will need to acquire a permit under the Clean Air Act. However, these additional permits will be procured as the Project proceeds, and such procurement will not cause a delay in the expeditious construction of the Alaska Highway Project.

The Canadian Permits

On the Canadian side, Foothills holds two unique certificates or permits:

- Certificate of public convenience and necessity.
- Yukon right-of-way.

Certificate of Public Convenience and Necessity

The certificate of public convenience and necessity ("certificate") is the Order issued following a successful hearing before the National Energy Board (NEB) of a pipeline application. The information that is required to be filed for hearing purposes is delineated in regulation and includes details about supply and markets, environmental impact assessment, engineering, construction and operations plans and details about connecting pipeline facilities.

The preparation of the required hearing information generally takes one to two years to complete and the length of the hearing will be proportional to the level of controversy surrounding the issues.

Foothills has completed this phase of the process. We have the "certificates" that entitle us to build a pipeline, subject only to terms and conditions set out in the Alaska Highway Project regime.
The "certificates" are statutory. They were issued by the Parliament of Canada when it enacted the Northern Pipeline Act and are in keeping with the principles and intent of the U.S./Canada Agreement.

We acknowledge that the "certificates" were legislated 20 years ago and that some have raised questions about their scope and validity. Others suggest that the certificates are dated and accordingly must be reissued. The "certificates" are valid. We are on solid legal ground in this regard.

Changes to the pipeline design to accommodate new technical issues and improvements have previously have been granted by the Northern Pipeline Agency both at the time of the construction of the original Pre-build facilities and later during the facility expansion.

However, fundamental changes to the Canadian "certificates" would require changes to both the legislation and the treaty. For example another project could not be approved under the Alaska Highway Project regime. Further the Northern Pipeline Act (incorporating the U.S. /Canada Agreement) provides that the route for Alaska natural gas will be along the route set forth in Annex 1 to the U.S. /Canada Agreement i.e. the Alaska Highway route. In the face of the provision of the Northern Pipeline Act and the U.S. /Canada Agreement, a treaty with the force of law, it is difficult to see how the National Energy Board could entertain applications either for alternative pipeline routes for delivery of Alaska gas through Canada or applications by companies other than Foothills following the Foothills highway route for delivery of Alaska gas through Canada.

Given the above we may well ask what remains to be done before the project can proceed?

First of all, we do not have a commercial arrangement negotiated with the Alaska North Slope producers or other shippers. Achieving this commercial arrangement is our number one priority. We are confident that the mutual interests of all sides will ultimately lead to satisfactory arrangements.

Following the successful completion of such a commercial agreement, there are a number of terms and conditions that must be satisfied. These are set out in the Northern Pipeline Socio-economic and Environmental Terms and Conditions. It is our view that the terms and conditions are broad enough to accommodate modern environmental, engineering and construction
practices. In fact, we addressed this issue when we pre-built the southern portion of the Alaska Highway Project pipeline.

Detailed design and engineering work also must be completed and approvals must be obtained from the Northern Pipeline Agency. It is this mechanism that I referred to when I indicated that we had a “fast track” regulatory process.

The Yukon Right-of-Way

I will take a few minutes to describe the status of our right-of-way through the Yukon. Foothills has been granted an easement in the Yukon. The current term of the easement is September 2012 and provisions are in place to renew the easement for a further term of 24 years. It is important to note that the easement is protected under the Encumbering Rights provisions of the Umbrella Final agreement which has been signed by the Government of Canada, the Government of the Yukon and the Yukon First Nations. The Final Settlement Agreements that have been negotiated with the Yukon First Nations contain specific provisions relating to the easement. In addition, the compressor stations locations and permanent access to the proposed stations are protected.

What does this mean? From our perspective this translates into certainty of land tenure and a significant timing advantage. Foothills has developed an excellent working relationship with the Yukon First Nations over the years and we are building on that relationship. Like the Canadian “certificates” the easements also constitutes an important asset. An asset not easily replicated.

Conclusion

Let me summarize and focus on some of the key points.

Foothills is a company with real pipelines and real customers.

When combined with our shareholders TransCanada and Westcoast, we transport 20% of all the natural gas consumed in the United States. And we have the know-how and the where-with-all to build the Alaska Highway Pipeline.

We have been involved in this project for 25 years.
We and our former partners have invested heavily to achieve the permits, certificates, rights-of-way and much of the engineering on the Alaska Highway pipeline.

A basic message that I want to leave with you is this, we have a...very unique and solid regulatory framework, it is a very valuable framework in terms of saving money and avoiding costly delays when building a pipeline. It is more than a collection of permits. It is a package, designed specifically to expedite building the Alaska Highway pipeline.

This framework can neither be duplicated nor terminated easily. It is a one-of-a-kind regime. I urge all Alaskans to take full advantage of it.

Finally let me raise one other issue and that is the matter of the pipeline route decision. Before we can move from discussion to action this must be resolved. Anything this committee can do to bring clarity to the routing debate will be a positive development.

Ultimately all stakeholders must find some common ground and go forward.

So where do we go from here?

A commercial agreement between pipelines and producers is the next major mile post for the Project.

Once a satisfactory commercial arrangement is achieved ... the flag drops; from that point on we believe that our regulatory framework will allow “shovels to be in the ground” within 24 months.

This is a very large project. It will involve many companies. It will cost a lot of money and there will be lots of issues to address and benefits to share.

Foothills and its shareholders intend to be major players in the development and operation of this important pipeline and we believe that we bring value to the Project and value to Alaska.

Thank you, and I am now prepared for questions.
FOOTHILLS PIPE LINES LTD.

ORIGINAL COMPETING PROJECTS

- Alaska Highway Natural Gas Pipeline Project
- Arctic Gas Project
- El Paez Alaska Oil Project

Map showing routes from Prudhoe Bay to Chicago via Calgary, San Francisco, and other points.

DOE002-1211

Obtained and made public by the Natural Resources Defense Council, March/April 2002
FOOTHILLS PIPE LINES LTD.

TRANSPORTATION SYSTEMS

- Alaska Highway Gas Pipeline Project
- Dempster Lateral
- Mackenzie Valley
- Alaska North Slope LNG Project
- Existing Pipelines
- Northern Reserves and Parks

Chukchi Sea

ALASKA

Gulf of Alaska

Fort Nelson

B.C.

Boundary Lake

Gordondale

Caroline

Existing Prebuild

Kingsgate

PG&E National Energy Group

Monchy

Northern Border Pipeline Company

DOE002-1212

Obtained and made public by the Natural Resources Defense Council, March/April 2002
Hydrogen is the third most abundant element on the earth's surface, where it is found primarily in water (H₂O) and organic compounds. It is generally produced from hydrocarbons or water, and when burned as a fuel, or converted to electricity, it joins with oxygen to again form water.

More basic information about hydrogen energy is also available.

 Technologies
 Production
 Hydrogen is produced from sources such as natural gas, coal, gasoline, methanol, or biomass through the application of heat; from bacteria or algae through photosynthesis; or by using electricity or sunlight to split water into hydrogen and oxygen.

 Transport and Storage
 The use of hydrogen as a fuel and energy carrier will require an infrastructure for safe and cost-effective hydrogen transport and storage.

 Fuel Cells
 Hydrogen’s potential use in fuel and energy applications includes powering vehicles, running turbines or fuel cells to produce electricity, and generating heat and electricity for buildings. The current focus is on hydrogen’s use in fuel cells.

 Issues
 Safety
 Hydrogen has an excellent safety record, and is as safe for transport, storage and use as many other fuels. Nevertheless, safety remains a top priority in all aspects of hydrogen energy. The hydrogen community addresses safety through stringent design and testing of storage and transport concepts, and by developing codes and standards for all types of hydrogen-related equipment.

 The Hydrogen Economy
 The vision of building an energy infrastructure that uses hydrogen as an energy carrier — a concept called the "hydrogen economy" — is considered the most likely path toward a full commercial application of hydrogen energy technologies.

http://www.eren.doe.gov/RE/hydrogen.html

2/20/2001

DOE002-1214
Hydrogen is the simplest element: an atom consists of only one proton and one electron. It is also the most plentiful element in the universe. Despite its simplicity and abundance, hydrogen doesn't occur naturally as a gas on the Earth—it is always combined with other elements. Water, for example, is a combination of hydrogen and oxygen (H₂O). Hydrogen is also found in many organic compounds, notably the "hydrocarbons" that make up many of our fuels, such as gasoline, natural gas, methanol, and propane.

Hydrogen can be made by separating it from hydrocarbons by applying heat, a process known as "reforming" hydrogen. Currently, most hydrogen is made this way from natural gas. An electrical current can also be used to separate water into its components of oxygen and hydrogen. Some algae and bacteria, using sunlight as their energy source, even give off hydrogen under certain conditions.

Hydrogen is high in energy, yet an engine that burns pure hydrogen produces almost no pollution. NASA has used liquid hydrogen since the 1970s to propel the space shuttle and other rockets into orbit. Hydrogen fuel cells power the shuttle's electrical systems, producing a clean byproduct—pure water, which the crew drinks. You can think of a fuel cell as a battery that is constantly replenished by adding fuel to it—it never loses its charge.

Fuel cells are a promising technology for use as a source of heat and electricity for buildings, and as an electrical power source for electric vehicles. Although these applications would ideally run off pure hydrogen, in the near term they are likely to be fueled with natural gas, methanol, or even gasoline. Reforming these fuels to create hydrogen will allow the use of much of our current energy infrastructure—gas stations, natural gas pipelines, etc.—while fuel cells are phased in.

In the future, hydrogen could also join electricity as an important energy carrier. An energy carrier stores, moves, and delivers energy in a usable form to consumers. Renewable energy sources, like the sun, can't produce energy all the time. The sun doesn't always shine. But hydrogen can store this energy until it is needed and can be transported to where it is needed.

Some experts think that hydrogen will form the basic energy infrastructure that will power future societies, replacing today's natural gas, oil, coal, and electricity infrastructures. They see a new hydrogen economy to replace our current energy economies, although that vision
### Table 10. Estimated Consumption of Vehicle Fuels in the United States, 1992-2001 (Thousand Gasoline-Equivalents)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Petroleum Gases (LPG)</td>
<td>208,142</td>
<td>264,655</td>
<td>248,467</td>
<td>232,701</td>
<td>239,158</td>
<td>238,356</td>
<td>241,583</td>
</tr>
<tr>
<td>Compressed Natural Gas (CNG)</td>
<td>16,823</td>
<td>21,603</td>
<td>24,160</td>
<td>35,162</td>
<td>46,923</td>
<td>65,192</td>
<td>73,251</td>
</tr>
<tr>
<td>Liquefied Natural Gas (LNG)</td>
<td>565</td>
<td>1,901</td>
<td>2,345</td>
<td>2,759</td>
<td>3,247</td>
<td>3,714</td>
<td>5,343</td>
</tr>
<tr>
<td>Methanol, 85 Percent (M85)</td>
<td>1,069</td>
<td>1,593</td>
<td>2,340</td>
<td>2,023</td>
<td>1,775</td>
<td>1,554</td>
<td>1,212</td>
</tr>
<tr>
<td>Methanol, Neat (M100)</td>
<td>2,547</td>
<td>3,166</td>
<td>3,190</td>
<td>2,150</td>
<td>347</td>
<td>347</td>
<td>445</td>
</tr>
<tr>
<td>Ethanol, 85 Percent (E85)</td>
<td>21</td>
<td>48</td>
<td>80</td>
<td>190</td>
<td>694</td>
<td>1,280</td>
<td>1,727</td>
</tr>
<tr>
<td>Ethanol, 95 Percent (E95)</td>
<td>85</td>
<td>80</td>
<td>140</td>
<td>995</td>
<td>2,699</td>
<td>1,136</td>
<td>66</td>
</tr>
<tr>
<td>Electricity</td>
<td>359</td>
<td>268</td>
<td>430</td>
<td>663</td>
<td>773</td>
<td>1,010</td>
<td>1,202</td>
</tr>
</tbody>
</table>

Subtotal * | 229,631 | 293,334 | 281,152 | 276,643 | 295,618 | 312,589 | 324,826 |

### Oxygenates

| Methyl Tertiary Butyl Ether (MTBE) | 1,175,000 | 2,069,200 | 2,018,800 | 2,691,200 | 2,749,700 | 3,104,200 | 2,903,400 |
| Ethanol in Gasohol | 701,000 | 760,000 | 845,900 | 910,700 | 660,200 | 830,700 | 859,500 |

Total Alternative and Replacement Fuels d | 2,105,631 | 3,122,534 | 3,145,852 | 3,878,543 | 3,705,516 | 4,247,489 | 4,117,726 |

### Traditional Fuels

| Gasoline a | 110,135,000 | 111,323,000 | 113,144,000 | 115,943,000 | 117,783,000 | 119,336,000 | 122,849,000 |
| Diesel    | 23,866,000 | 24,296,630 | 27,293,370 | 28,555,040 | 30,101,430 | 31,949,270 | 33,665,360 |

Total Fuel Consumption | 134,230,631 | 135,912,964 | 140,718,622 | 144,774,683 | 148,180,046 | 151,597,859 | 156,839,186 |

---

* 1999 estimate has been revised.

b The remaining portion of 85-percent methanol and both ethanol fuels is gasoline. Consumption data include:

c Includes a very small amount of other ethers, primarily Tertiary Amyl Methyl Ether (TAME) and Ethyl Tertiary Amyl Methyl Ether (E-TAME).

d Does not include biodiesel for which data are not currently available.

E Gasoline consumption includes ethanol in gasohol and MTBE.

f Total fuel consumption is the sum of alternative fuel, gasoline, and diesel consumption. Oxygenate consumption includes a small amount of other ethers, primarily Tertiary Amyl Methyl Ether (TAME) and Ethyl Tertiary Amyl Methyl Ether (E-TAME).

Notes: Fuel quantities are expressed in a common base unit of gasoline-equivalent gallons to allow comparison.

---

http://www.eia.doe.gov/cneaf/alternate-page/datatables/table10.html

5/1/2002

DOE002-1216

Obtained and made public by the Natural Resources Defense Council, March/April 2002
Alternatives to Traditional Transportation Fuels 1999 - Table 10. Estimated Consumption ...

Equivalent gallons do not represent gasoline displacement. Gasoline equivalent is computed by dividing the lower heating value of gasoline and multiplying this result by the alternative fuel consumption value. Lower heating unit of fuel excluding the heat produced by condensation of water vapor in the fuel. Totals may not equal sum of.

Estimates for 1999 are revised. Estimates for 2001, in italics, are based on plans or projections. Estimates for 2001 reports if new information becomes available.


• Proceed to Table 11
• Back to Table 9
• Return to the Table of Contents


DOE002-1217

Obtained and made public by the Natural Resources Defense Council, March/April 2002
**EnergyGuide Labels**

The U.S. government established a mandatory compliance program in the 1970s requiring that certain types of new appliances bear a label to help consumers compare the energy efficiency among similar products. In 1980, the Federal Trade Commission's Appliance Labeling Rule became effective, and requires that EnergyGuide labels be placed on all new refrigerators, freezers, water heaters, dishwashers, clothes washers, room air conditioners, heat pumps, furnaces, and boilers. These labels are bright yellow with black lettering identifying energy consumption characteristics of household appliances. Although these labels will not tell you which appliance is the most efficient, they will tell you the annual energy consumption and operating cost for each appliance so you can compare them yourself.

EnergyGuide labels show the estimated yearly electricity consumption to operate the product along with a scale for comparison among similar products. The comparison scale shows the least and most energy used by comparable models. The labeled model is represented by an arrow pointing to its relative position on that scale. This allows consumers to compare the labeled model with other similar models. The consumption figure printed on EnergyGuide labels, in kilowatt-hours (kWh), is based on average usage assumptions and your actual energy consumption may vary depending on the appliance usage.

EnergyGuide labels are not required on kitchen ranges, microwave ovens, clothes dryers, on-demand water heaters, portable space heaters, and lights.
As California struggles with blackouts, other western states strive to meet growing electricity demands. It's time for America to encourage the construction of new electric generation utilizing all of America's diverse energy resources including power plants that generate electricity from coal. And with coal reserves that will last for 250 years, electricity from coal will be a reliable and affordable energy resource long into the future.

Surprisingly, electricity generated from coal is cleaner than ever. America's electric companies that use coal have invested tens of billions of dollars in new technologies to generate electricity from coal more cleanly and efficiently. Since 1970, coal use in our nation's power plants has nearly tripled while emissions of major air pollutants have dropped by a third. And newer technologies promise even better results in the future.

We are CARE—a coalition dedicated to the development of a sound energy policy for America. To find out more, click on www.CAREenergy.com.

**ESSENTIAL, AFFORDABLE, AND INCREASINGLY CLEAN: ELECTRICITY FROM COAL.**

**CARE**

Coalities for Affordable and Reliable Energy

1209

DOE002-1219

Obtained and made public by the Natural Resources Defense Council, March/April 2002
ENERGY POLICY
PRINCIPLES FOR ACTION
NATIONAL MINING ASSOCIATION

Reliable affordable energy is necessary for both economic growth and national security. All domestic energy resources—coal, natural gas, petroleum, nuclear (uranium) and renewables—will be required and each is essential to meeting the nation’s future energy needs. Use of domestic energy resources must increase while we simultaneously develop, produce and use energy more efficiently and cost effectively while we maintain and improve the quality of our environment.

Energy policy must be based on several underlying principles: economic efficiency and support for market based policies; advancing energy technology; use of additional regulations only if based on sound science and relative risk assessments; and, expanded use of incentives to promote investment in technology and infrastructure. Policy must be able to recognize and react to the rapidly changing energy requirements of our society and to advances in technology. As recent events clearly illustrate, energy policy must address both energy supply and energy demand.

Energy Policy and Coal.
The need for a dynamic energy policy is underscored by rapid electrification of our economy. Affordable and reliable electricity has supported much of the economic expansion of the past several years and affordable and reliable electricity is necessary to support the economy of the future.

Coal is electricity. Over one-half of the nation’s electricity requirements are met with coal-fired power. Coal is the nation’s largest and most affordable domestic resource. Coal must be a major factor in the future as demand for electricity continues to increase at a rapid pace.

Coal generating capacity and coal use must increase to support a growing demand for electricity; efficiency and environmental performance must continue to improve.

The nation’s electric generating fleet is not sufficient to meet current, let alone future, demands for electricity. Barriers to construction of generation and transmission infrastructure must be removed, regulatory certainty with respect to criteria pollutants is necessary and incentives to increase environmental performance and power generation efficiency are necessary to spur investment to ensure that additional capacity is built and existing capacity upgraded. Fuel diversity, and affordability are essential for economic growth. Coal must be used in existing plants and much of the new capacity must be advanced clean coal technology.

Obtained and made public by the Natural Resources Defense Council, March/April 2002
The Administration should support legislative and regulatory actions that provide a measure of burden sharing to improve operational and environmental performance of the existing coal-based fleet and incentivize construction of a number of commercial applications of advanced clean coal technologies.

Future regulation of criteria and hazardous air pollutants from coal-based electricity generation, if warranted by sound economic and scientific considerations, should be implemented under a well-defined and integrated strategy to optimize control and minimize costs. The Administration should take immediate steps to harmonize air quality regulations currently pending at EPA.

Climate policy is an integral part of energy policy. Command and control regimes to control or reduce greenhouse gas emissions should not be part of the policy. Policies should encourage aggressive voluntary actions to reduce emissions, development of new technologies and accelerated research in sequestration. The United States' climate policy must recognize the global nature of the issue and support responsible international agreements that focus on technology transfer and on energy efficient economic development throughout the world.

Investments in Coal Production Capacity Must Be Facilitated

Coal output is approaching 1.1 billion tons annually. Production is forecast to increase by 250 million over the next decade to meet demand. Unnecessary barriers to coal reserves must be removed and income tax policies should encourage, not discourage, investments in expanding capacity, while continuing to incentivize the highest safety and environmental standards in the world.
CONTENTS

OVERVIEW

COAL USE

New Coal Generation Capacity is Required to Meet Future Demands
National Electricity and Environmental Technology Act

- Harmonizing Ozone Rules Under the Clean Air Act
- Regulation of Mercury Emissions from Coal- and Oil-Based Power Plants
- New Source Review
  Older Power Plants Not Exempt From Clean Air Act
- Regional Haze Regulations
- Rulemaking to Establish BART Guidelines
- Use of the CALPUFF Model for Impact Analysis
- The Importance of Fuel Diversity in Establishing a National Energy Policy and a Sound Climate Change Strategy

COAL PRODUCTION

- The Coal Mine Valley Fill Issue
- The Forest Service Roadless Area Conservation Rule Will Eliminate Coal Reserves from Development
- Coal Leasing – The Need for an Orderly, Predictable Process
- Advance Royalty Payments in Lieu of Continued Operations
- Revitalizing the Abandoned Mined Lands Program
- MMS Administrative Appeals Process
- U.S. Forest Service Management Plan Revisions

1212

DOE002-1222

Obtained and made public by the Natural Resources Defense Council, March/April 2002
- Regulation of Diesel Particulate Matter Exposure in Underground Metal/Nonmetal Mines
- Black Lung Disability Benefits Program Final Regulation Employment Standards Administration

CROSSCUTTING
- Federal Government Coal Research Programs
- Modifications in Corporate Income Tax Policies
- Reliable, Timely and Complete Energy Data A Requirement for Sound Public Policy

URANIUM
- Changes to NRC Fee Structure
- Uses of the National Strategic Uranium Reserve
- Limitations on Sales of Government Uranium Stockpiles
- Domestic Nuclear Fuel Cycle Short Term Mitigation
- Extend Dates of USEC Privatization Act
- Domestic Uranium Research and Development
- Uranium Product Tax Credit
COAL AND URANIUM
THE FOUNDATION FOR THE US ENERGY/ELECTRIC ECONOMY

ENERGY DRIVES THE US ECONOMY. Energy, whether it is from coal, oil, natural gas, uranium or renewable sources, is the common denominator that is imperative to sustain economic growth, enhance environmental protection, maintain and improve standards of living and, simultaneously, support an expanding population. The significant economic expansion that has occurred in the United States over the past two decades, and especially over the last five years, was in no small measure due to reliable and affordable energy, much in the form of electricity, much in the form of coal-fired electricity.

According to the Energy Information Administration\(^1\), the trends experienced in the US over the last 20 years - economic growth, greater efficiency and a move to electricity - are expected to continue over the next two decades. Economic growth is forecast to increase by an average 2.3 percent per year. Reflecting greater efficiency, the use of energy will grow by an average 1.3 percent per year or by a total of 32 percent to 127 quadrillion Btu by 2020. Consumption of all sources of energy are expected to increase: petroleum by 33 percent, natural gas by 62 percent, coal by 22 percent and renewable energy by 26 percent. The economy will become even more dependent upon electricity over the next 20 years. During the next two decades consumption of electricity will increase by an average 1.8 percent per year or by over 40 percent.

THE GAP BETWEEN ENERGY SUPPLY AND DEMAND. Many policies will have to change to make this forecast a reality. There is a growing gap between the expected demand for energy and the nation's capacity to supply that energy on a reliable, affordable basis. Since 1980 consumption of energy has increased by 20 quadrillion Btu (Quads) or by 25 percent to 98.5 Quads. Production of energy in the United States has not kept pace, increasing by a mere 5 quadrillion Btu or by only 7.6 percent, to 72.6 quads. The "gap" in 2000, 26 quadrillion Btu, was made up by importing energy.

Over the next twenty years the gap will widen. Energy consumption is expected to increase by 29 quads but US energy production will increase by only 14 quads widening the "gap" to 41 quadrillion Btu. This gap can only be filled through an increase in energy imports.

The energy policies of the past eight years have exacerbated the US demand - supply imbalance. Domestic policies have actively discouraged, and even prevented, investments in domestic energy production capacity, in our electrical grid, in our nation's energy delivery infrastructure. As pointed out, the increase in energy use in the United States during this time was fueled in large part by an increase in imports - a trend expected to continue. The increase in the generation of electricity was possible because generating capacity had been over built in the 70's and 80's giving the US substantial reserve margins. Those reserves are gone. The benefits of past investment have run out. The energy supply industry has not been able to make the investments or develop and maintain the infrastructure that is necessary for the future.

The US is fortunate to have a large domestic energy resource within our borders and an established, although aging, energy delivery structure. To meet expected future demands our national energy policy must be redirected to encourage efficient, environmentally sound development of our nation’s vast energy resource base and to promote the use of technologically advanced methods to process, transport and use that energy.

COAL IN THE ENERGY MIX. Coal reserves, which are geographically distributed throughout the US, comprise the greatest share of the nation’s energy resource base. The demonstrated coal reserve is over 500 billion tons with economically recoverable reserves of over 275 billion tons. This is a reserve large enough to support a growing coal demand for over well over 200 years.

Coal is the only domestic energy resource to INCREASE production levels over the last two decades. In 1980, coal production was 830 million short tons. In 2000, 1.1 billion tons of coal were produced in mines located in 26 states and the EIA projects coal production of 1.3 billion tons in 2020. During the past two decades average productivity in the coal industry has increased by nearly 250 percent reflecting in part shifts from underground to surface production and, in part, technological advances in mining operations. The average price of a ton of coal at the mine has declined in both real and nominal terms. The US coal industry is proud to pay wages to our miners that are among the highest of any industrial worker in the country. The US industry is the safest coal industry in the world, a record of which we are all proud, but a record on which we will not rest as the goal of the industry is zero injuries and fatalities.

Coal, or electricity generated from coal is used in all 50 states. The coal industry contributes some $161 billion annually to the economy through payroll and purchases of goods and services. Coal industry tax payments add at least $2 billion annually to state and local government revenues. The industry directly and indirectly employs nearly 1 million people.

The primary market for coal is the electric generator. Last year 1.026 billion tons of coal were used to generate over 50 percent of all electricity used in the US. The industrial market, at approximately 32 million tons per year, and the domestic market for coking coal of 28 – 29 million tons are both very important, but small in comparison. The United States also exports coal, approximately 57 million tons in 2000. Coal use in the industrial and coking markets and for export will remain relatively unchanged over the next 20 years.

At the bottom line, coal is electricity.

The Energy Information Administration forecast referenced above shows that by 2020 electricity use will increase by over 40 percent as compared to today’s levels. Coal use for electricity will total at least 1.25 billion tons in 2020 some 250 million tons, or 20 percent, more than is currently burned.

The reasons are straightforward: coal is domestic, coal is reliable and coal is affordable. To illustrate, in 2000 electric rates in regions dependent upon coal for
electricity were, on average, at least one-third lower than rates in regions dependent upon other fuels for electricity.\(^2\)

And, coal is increasingly clean. Although coal use for electricity has tripled since 1970, emissions are lower by more than a third. New advanced clean coal technologies will enable this trend to continue and to accelerate, permitting greater use of coal while increasing combustion efficiencies and lowering emissions of the regulated criteria pollutants (SO\(_2\), NO\(_x\), and Particulate Matter). Emissions of carbon dioxide both overall and per unit of electricity generated will be lower as well.

Coal serves an indispensable role in the United States energy equation and not only can, but will, provide a major part of the nation's energy requirements in the future.

**US URANIUM IS ALSO AN IMPORTANT PART OF THE US ENERGY/ELECTRIC ECONOMY.** The United States uranium recovery industry is also important to the nation's energy independence and is essential to national security. Today, nearly 23 percent of America's electricity comes from clean nuclear power, which translates into the consumption of about 45 million pounds of uranium each year. However, the collapse in uranium prices since 1980 has produced a sharp decline in the viability of America's uranium mining industry. America's remaining uranium miners produce only about 3 million pounds of uranium annually, just 6 percent of nuclear utilities' needs. The balance of the uranium comes from rapidly declining inventories in the hands of the utilities, the federal government and foreign entities.

Under the current policy direction, the amount of electricity generated by nuclear plants is expected to decline over the next twenty years. However, this forecast may prove to be incorrect. Licenses for nuclear plants are being renewed and it is expected that almost all nuclear plants operating in the US today will apply for, and obtain, renewals to allow operation for 20 years beyond the original date at which licenses were due to expire. There is some consideration of construction of at least one new nuclear plant. Thus, demand for uranium for will not decline but is likely to increase.

Historically, the United States was the world's leading producer of uranium and still has extensive proven reserves of natural uranium that offer the potential for secure sources of future supply. Only a strong domestic uranium recovery industry can assure an adequate long-term supply of uranium for the nuclear power component of the nation's long-term energy policy and preclude threats of foreign supply disruptions or price controls that could adversely affect the nation's common defense and security. Therefore, the federal government must foster energy policies that ensure a strong and viable domestic uranium recovery industry and must remove barriers to domestic production of existing sources of uranium.

**DEVELOPMENT OF AN ENERGY STRATEGY MUST BE A PRIORITY IF FUTURE DEMANDS ARE TO BE MEET.** A change in policy direction is required if affordable energy is to be reliably available in the future. At the core, America's energy strategy must be grounded in market-based policies that lead to adequate, diverse and secure

\(^2\) According to the Energy Information Administration electric rates in the New England and Middle Atlantic States averaged 9.9 cents per Kwh through October 2000, 9.0 cents in California. As comparison, electric rates in the East South Central region (dependent upon coal for over 70% of generation) averaged 5.2 cents per Kwh in the same time frame.
energy supplies. A balanced energy policy will be anchored in economic efficiency, will promote new energy technologies, will limit use of regulation and will support use of market based incentives. A responsible energy policy will achieve a balance between the benefits of energy use and the benefits of responsible environmental protection.

Policies are needed to:

- Enhance energy supply and encourage use of all energy sources;
- Provide certainty for investment in energy infrastructure (environmental controls, generation and transmission);
- Balance energy production and use with environmental concerns;
- Promote energy efficiency and conservation;
- Assure free and competitive energy markets that in turn work to provide energy at affordable costs; and,
- Promote energy technology development and long-range R&D initiatives.

A comprehensive energy policy should include tax and fiscal policies, trade policies environmental policies, and land use policies. Finally, an energy policy needs to be predictable and must make certain that the policies and activities of the various government agencies are coordinated and complementary rather than working towards goals that are conflicting.

Although many policies will be similar or even identical for all fuel sources, many will be fuel specific. The issues that follow are issues that must be resolved if coal is to continue to be a major part of the nation's energy mix.
COAL USE

- New Coal Generation Capacity is Required to Meet Future Demands
  National Electricity and Environmental Technology Act
- Harmonizing Ozone Rules Under the Clean Air Act
- Regulation of Mercury Emissions from Coal- and Oil-Based Power Plants
- New Source Review
  Older Power Plants Not Exempt From Clean Air Act
- Regional Haze Regulations
- Rulemaking to Establish BART Guidelines
- Use of the CALPUFF Model for Impact Analysis
- The Importance of Fuel Diversity in Establishing a National Energy Policy and a Sound Climate Change Strategy