20 March 2001

Honorable Spencer Abraham
U. S. Department of Energy
1000 Independence Ave, SW
Washington, DC 20585

Dear Secretary Abraham:

I am writing this letter to strongly urge the Bush Administration to support revival of the nuclear option for electrical power generation in this country. It is time the shackles of the last eight years be thrown off this safe, efficient technology, and we move forward.

I realize the task is formidable as you will be assailed by an army of anti-nukes, other assorted pseudo-environmentalists, and an uninformed public. (The very mention of restarting one of the Tennessee Valley Authority's nuclear units was met with shrill opposition by the anti-nukes.) The "greens" must be met with determination and perseverance, and the American people must be educated about nuclear power. We should borrow from the example the French have used to successfully gain acceptance of nuclear power plants: promotion of benefits and mandating power plant management and operators reside close to the facility.

To close the nuclear cycle, we must make the national waste repository operational as soon as possible and restart spent fuel recycling. Once again, I realize these efforts will not be without a struggle, but I am firmly convinced we must try.

It is outrageous that we can build a state-of-the-art, light-water reactor in North Korea and a central waste repository in Russia but not here!

Additionally, I fully support environmentally safe drilling for oil in Alaska (and anywhere else, for that matter), clean-burning coal technology, and a halt to attempts to dismantle our hydroelectric facilities.

I would appreciate your comments on the above suggestions and what the Bush Administration intends to do at the Federal level to return sanity to energy policy.

Yours truly,

Walter L. Adams, Jr.

Walter L. Adams, Jr.
MESSAGE: Dear Secretary Abraham, I have read your recent comments regarding the fact that we will not beg OPEC countries for oil, and that we should continue our exploration efforts. I agree with that assessment. However, I believe that the current energy problems (prices/blackouts, last summers gasoline prices) points out that we still need to have a comprehensive energy policy for this country that includes oil/gas exploration, coal/natural gasification, nuclear energy, and bio fuels energy. Particularly, I

MAILADD:
FROM: NAME: SUBJ_T: Energy Production ZIP: CITY: FARM:1: TO:the.secretary@hq.doe.gov STATE: Disappointed TOPIC: The Republican Crisis Mongers SUBMIT: Send Comments CONTACT: email COUNTRY: Thisone MESSAGE: "Billions have been invested in developing renewable energy and will continue to be invested under the Bush Administration. But renewables have yet to overcome the economic advantages of conventional energy sources." With this statement, the Bush policy is laid bare—the cheapest (i.e., most profitable for the developer) methods will be implemented. With regard to the proposal to open the Arctic National Wildlife Refuge to drilling operations, it means that the "technological advances in exploration"
Sec. Abrams

3-15-01

1) Why not more emphasis on wind, solar, & hydro power??

2) Why is money taken from these areas??

3) Why only gas, oil, & coal sources for energy being emphasized??

4) Need to work with sources better

5) Why is BP allowed to sell oil from Alaska to other countries??

6) National cap on energy is necessary

J. Enkhardt

Obtained and made public by the Natural Resources Defense Council, May 2002
My comments will deal with the energy resources to meet our needs. These are limited and specific. They include natural gas, oil, coal and nuclear energy.

Yes, environmentalists talk about wind power, water power, solar energy, ethanol, methanol, fuel cells and the hydrogen economy. None of these hold any hope of supplying any more than a small fraction of the power we need to keep our economy humming. And electricity is not a primary power source, since energy must be expended to generate electricity. Electricity is a secondary, generated source of power.

Thus we are left with coal, oil, natural gas and nuclear energy to supply our energy needs.

By the way, Energy is what we are talking about. Energy is the ability to do work, and is generally in the form of heat. Power is the time rate of energy expenditure or production. Thus, electrical power is measured in watts or kilowatts or megawatts, or gigawatts, whereas electrical energy is measured in watt-hours, KWH, MWH and GWH. Heat energy is measured in therms, or kio therms or mega therms, whereas heat power is measured in therms per hour, or kio therms per hour, etc.

Of the energy sources I cited, all except nuclear energy produce massive amounts of carbon dioxide since this is the normal and expected result of burning a carbon based fuel. Thus, the burning of coal, gas and oil all produce carbon dioxide.

To get to the point more quickly, A sensible national energy policy should be based on using each fuel to its best advantage while minimizing the amount of carbon based fuel burned to limit to a practical limit the generation of carbon dioxide.

We must face up to the fact that nuclear energy is the cleanest energy source we have to use. It produces no exhaust gases; it is plentiful and renewable. Yes, there are risks involved, but they are all well understood, and as a technically oriented nation, we have the ability to solve all of these problems, and minimize the risks. In fact, we have employed nuclear energy for over 50 years in the generation of electrical power. But we have raised so many fears and restrictions that we are "afraid" to proceed with new nuclear based power plants.

Nuclear power must be divided into two categories, namely controlled fission and controlled fusion. Controlled nuclear fusion is looked upon as our ultimate energy solution. Yet, after 50 years of research, we have made only small gains toward achieving usable controlled nuclear fusion energy sources. It is not an option as an energy source into the foreseeable future.

Nuclear fission reactors are currently providing about 17% of the electrical power in the world. France generates about 35% of its electrical power via nuclear energy. The United States generates only about 15% of its electrical power via nuclear power plants.

The Super Carrier, Ronald Reagan, was recently christened by Mrs. Reagan. As with the other 8 super carriers, it will be powered by a nuclear fission reactor. All of our modern submarines are also powered by nuclear fission reactors.

I propose that we begin immediately to reinvent our National energy policy, and use the fuels available to us to best advantage.

This means:
1. Boldly striving forward to build new nuclear based electrical generating plants.
2. Restricting the use of oil and its derivatives to transportation.
3. Restricting natural gas usage to home and industrial heating and processes.
4. Utilizing coal fired plants for electrical power generation in favorable applications.

With the successful implementation of this program, we will significantly reduce the amount of carbon dioxide produced to meet President Bush's commitment to the world environment. We will cut back on our use of oil and natural gas to reduce the demand, and bring the supply-demand equation into balance. We will continue to use our greatest native resource of coal in a conscientious manner.

With respect to nuclear fission reactors, I think they have been treated as bastard children. Each one is different; each one is of custom design and construction. To move ahead with expanded use of nuclear based power generation, we must follow every other successful product, and dating back to Henry Ford. We must standardize designs based on fifty years of experience. I think we should decide on the most appropriate size, and manufacture many on them for installation in many locations throughout the country. The nuclear plant of today may be capable of generating a gigawatt of power. I think this is too much power concentrated in a single location.

I went on line and tried to discover the size or rating of the nuclear power plant on the Ronald Reagan. I could not find it, but this model of reactor could be the basis for implementing my suggested plan of many smaller, and standardized, nuclear generating plants in many locations. Arbitrarily, I would put an upper limit of 100 megawatts on the standard nuclear power generating plant.

To implement my suggested program, three other problems areas must be attacked.

1. Convincing the public that nuclear power plants can be designed to be safe.
2. Eliminating unnecessary approvals, paperwork, and construction requirements that have made the building of new nuclear power plants almost impossible to achieve.
3. Dictating a final permanent resting place for spent nuclear fuel rods. This is another area that has been treated like a bastard child in the past. Even over a particular state's objection, a safe central permanent depository must be dictated and implemented.

A serendipitous benefit of implementing my suggested plan is that it will put the United States in the forefront of nuclear based electrical generating plants -- which is where we should have been all along, and will give us a highly viable product to sell to many other nations, and including the third world where there will be an explosive demand for more electrical generating capacity to meet their growing needs without relying on uncertain oil supplies.

Ms. Whitman; Mr. Abraham, please take time to evaluate my proposal. Our nation needs such a plan to remain strong and foremost within the world of nations.

Sincerely,

Raymond J. Miller

29286

Obtained and made public by the Natural Resources Defense Council, May 2002
Department of Energy  
Washington, DC 20585  

July 30, 2001

The Honorable Strom Thurmond  
United States Senate  
Washington, DC 20510

Dear Senator Thurmond:

I am responding to your letter of June 12, 2001, asking Mr. Michael Whatley of the Department of Energy to review a April 25 letter from Dr. Doyne Loyd, (referencing case #468079). Mr. Loyd's letter expressed his serious concerns about the lack of a coherent energy policy and our continued dependence on imported oil.

To address the many energy issues facing the Nation, one of President Bush's first acts was to create a National Energy Policy Development Group, headed by Vice President Cheney. This Group was charged with developing recommendations to help the private sector and government at all levels promote reliable, affordable, and environmentally sound energy for America's future. On May 16, 2001, Vice President Cheney sent to the President the recommendations of this group, together with a National Energy Policy report.

The report of the National Energy Policy Development Group describes a comprehensive long-term strategy that uses leading edge technology to produce an integrated energy, environmental and economic policy. The National Energy Policy it proposes follows three basic principles:

- The Policy is a long-term, comprehensive strategy. Our energy crisis has been years in the making, and will take years to put fully behind us.

- The Policy will advance new, environmentally friendly 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.

To achieve a 21st century quality of life – enhanced by reliable energy and a clean environment – it recommends 105 actions to modernize conservation, modernize our infrastructure, increase our energy supplies, including renewables, accelerate the protection and improvement of our environment, and increase our energy security.
The President has already taken actions to implement many of the report's recommendations. Over the coming months, further actions will be taken by the President, individual Federal agencies and the Congress. These actions, once fully implemented, will help minimize future energy prices, while assuring that energy supplies are reliable and the environment is protected.

A full copy of the National Energy Policy report, with the specific recommendations to the President, is available on the White House webpage, www.whitehouse.gov, or on the webpage of the U.S. Department of Energy, www.energy.gov.

I hope this information is helpful. Thank you for writing.

Sincerely,

Margot Anderson
Deputy Assistant Secretary
Office of Policy
and International Affairs
June 12, 2001

Mr. Michael Whatley
Director of Congressional Affairs
Department of Energy
Forrestal Building
1000 Independence Avenue, SW
Washington, DC 20587

Dear Mr. Whatley:

Enclosed is a copy of correspondence I have received from Doyne Loyd. I believe you will find it self-explanatory.

Your reviewing this material and providing any assistance or information possible under the governing statutes and regulations will be greatly appreciated. Thank you for your attention in this matter. I look forward to hearing from you soon.

With kindest regards and best wishes,

Sincerely,

Strom Thurmond

ST/hk
Enclosure
Please refer to case # 468079

29289
April 25, 2001

Senator Strom Thurmond
217 Russell Senate Office Bldg
Washington, DC 20510-4001

Dear Senator Thurmond:

Re: Energy Policy and omnibus energy bill introduced by Senator Murkowski

I have serious concerns about our lack of a coherent energy policy. President Bush would like to open more areas in Alaska. I can remember all to well the original arguments over the Alaska pipeline and how it would free us from dependence on foreign oil. Of course we are even more dependent upon fossil fuels now than we were then, particularly foreign oil. We were simply fooling ourselves. We ran pipeline through half of AK and we are worse off now than we were then. We should have left AK to the Moose and Bears and developed renewable energy resources. It would have been a lot easier 30 years ago to begin programs than it will be now. (Bush has also done other little things like roll back the SEER standards for air conditioners when every manufacturer of units has standard models that exceed the standard that was to be implemented.)

And over the past few years we have let the auto makers off the hook by not enforcing current CAFÉ standards and by not increasing them as they should be. I remember in 1972 when automakers faced new regulations how they moaned and groaned at the sheer impossibility and impracticality of the standards. That same year Honda began shipping cars that met the 1976 standard that could not be met. Unfortunately, American industry has a long history of attempting to sabotage appropriate environmental standards or forestall their introduction.

A few years ago, the Republicans were bitter about our national debt, a debt that would saddle our children and grandchildren and perhaps several generations to come! What about environmental debt? It appears that we will be saddling our children with a much warmer environment, rising ocean levels, increased mercury and other pollutants from old power plants, the destruction of more wilderness areas, etc. We have already polluted many lakes and streams in the NC and SC area. Every year I read about what fish we shouldn’t eat out of local lakes and rivers. The last time I went to the Smokies, it was like going to Los Angeles. Is this the legacy we want to leave our children? Polluted National Parks and wilderness areas, polluted streams and lakes, hotter weather, etc.

So all of this talk about the importance of opening new fields in AK is nonsense. I bought it the first time around. I don’t buy it now. I was sympathetic to the car companies (the day I read that Honda already met the 76 standard, I was reading an Auto trade magazine in my father’s office in his farm equipment and car dealership) the first time around. I’m not sympathetic today. We have had 30 years to prepare and we haven’t done it. The last major measure energy measure I can recall was the reduction in speed limits on the highways to 55 in 1974 and I got a ticket the very first night driving 65 in what had been a 65 the day before.

Save the next generation from the foolishness of the present. Enact reasonable energy policies. For example, I see that bills have been introduced to give tax credits to homeowners who use renewable energy sources such as solar cells. Back these bills. If...
they have foolish parts, amend them and then enact them. But for our children's and grandchildren's sake don't drill in Alaska or other national parks, forests or wilderness areas. If anything create more protected areas and surely not less. You know the old saying—Fool me once, shame on you; fool me twice shame on me. I hope you won't buy the fossil fuel industry, the electric energy and car companies' arguments. They are only interested in short-term profits. (Ford for example has been running ads about how environmentally friendly their SUV's are. Of course SUV's are very inefficient means of transportation, expensive to maintain, and dangerous for the average housewife to drive in an emergency. AND I LOVE 4-WHEEL DRIVE VEHICLES. I have two now). They could care less about the debt they will leave to future generations.

Sincerely,

Doyne Lloyd, MD
June 22, 2001

Secretary Spencer Abraham
Department of Energy
1000 Independence Ave.
Washington, DC
20585

Dear Secretary Abraham:

In my May 20, 2001 letter to you I inquired "Now that you have issued your Energy Policy – Where is the Implementation Plan that puts the policy into concrete action?"

The reply that I received from one of your aides (dated June 13, 2001) was strictly perfunctory with no direct answer. This would cause one to wonder if there is a general lack of understanding within DOE about the importance of such a plan to accomplish the recommendations in the Policy Statement.

A well developed plan establishes priorities, goals, funding, and schedules, identifies responsibilities of other agencies, actions required by Congress, and actions that can be taken without action by Congress, and appoints Project Managers for each of the major categories of energy supply.

Have you considered the consequences should the drought in the Northwest and the short-fall of snow in the Sierras persist for several more years? That could be disastrous!

As previously stated-Time is Short to get out ahead of those opposing any increase in energy supply and to provide significant reserves of power to accommodate those potentially unfortunate acts of nature.

Sincerely,

[Signature]

Jesse O. Arterburn
MESSAGE: Good Morning. I am writing to express my utmost indignation and opposition to the Bush Energy Plan. This report shows no concern for the basic human rights of those in oil producing regions, and as the majority of the American Public knows, these rights are very seldom upheld. America does not need more oil that was obtained through any means necessary. What we do need are more fuel efficient cars, better hybrid technology, and economic incentives for the purchasing of more environmentally friendly vehicles. I hope that my comments are included in the public discussion of this report, for they are not out of line with the majority of American voters. Thank you for your time. Sincerely, Wellington Lyons
The Secretary of Energy  
Washington, DC 20585  
July 26, 2001

The Honorable Loyola de Palacio  
Vice-President of the European Commission  
Commissioner of Transport and Energy  
Rue de la Loi 200  
B-1049 Brussels  
Belgium

Dear Commissioner Palacio:

Thank you for your thoughtful letter regarding the National Energy Policy report.

I am pleased that you noticed several lines of approach in the report that parallel those identified in the EU Green Paper. As we discussed during our meetings, both efforts point to substantial needs for new energy supply in coming years. This will be a major common challenge for us to address, and I hope that a renewed consultative process will help us to do so.

In this context, it is reassuring that you share with us the need for a new look at the potential of nuclear power. I agree with you that waste disposal is an essential issue to tackle effectively if this potential is to be realized, and we welcome cooperation in this area from both the Commission and interested EU member states. I also think that the nuclear option could be a particularly fruitful area for discussion by G8 energy ministers, given the substantial reliance placed on nuclear power by key G8 countries and the associated benefits for the environment.

I would also note that the National Energy Policy places substantial emphasis on the environment, energy efficiency and renewables. The report recommends doubling expenditure on conservation measures for low-income households, extending appliance efficiency standards and renewable energy tax credits, providing new tax incentives for purchase of efficient vehicles, and considering tighter vehicle corporate average fuel economy standards. It obviously makes sense to use energy wisely and to diversify our energy sources in cost-effective ways, not only because of the environmental benefits, but also to reduce the overall costs of meeting our energy needs and to enhance security by limiting oil import requirements.
Your letter indicates an interest in learning more about our analysis of energy demand, supply requirements, and environmental impacts of energy consumption. Our staff would be happy to assist in this regard, and the renewed consultative process may provide a useful vehicle for this.

Once again, I appreciate your taking the time to share your thoughts and perspectives. There are several areas where we can clearly cooperate, and I look forward to working on these together.

Sincerely,

[Signature]

Spencer Abraham
MEMORANDUM FOR THE SECRETARY

FROM: David L. Pumphrey
Deputy Assistant Secretary for
International Energy Cooperation
Office of Policy and International Affairs

SUBJECT: ACTION: Sign Letter to Mrs. Loyola de Palacio, Vice President of the European Commission and European Commissioner for Transport and Energy

ISSUE:

RECOMMENDATION: C

Approved: ______________
Disapproved: ______________
Date: ______________

Printed with soy ink on recycled paper

29296

Obtained and made public by the Natural Resources Defense Council, May 2002
Mr Spencer Abraham  
Secretary of Energy  
U.S. Department of Energy  
1000 Independent Avenue SW  
Washington D.C. 20585  
U.S.A.

Dear Mr Abraham,

Thank you very much for sending me a copy of the National Energy Policy report of the National Energy Policy Development Group chaired by Vice-President Cheney with recommendations to President Bush. I welcome the opportunity to share some general thoughts on energy policy and to give you a preliminary reaction to certain issues in the report.

First of all I believe that the report is timely since it coincides with similar EU initiatives. The European Commission is actively involved in an important policy debate on future security of energy supply as set out in our Green Paper as well as proposals for new measures to further liberalise the gas and electricity markets.

The Stockholm European Council in his last March meeting endorsed the objective of further opening up of the gas and electricity markets and has invited the Energy Council to examine the Commission proposals and to implement the objective of market opening as soon as possible.

The completion of the internal market for energy should complement other basic Community objectives such as security of energy supply and sustainable development. The Green Paper on security of supply has started a substantial debate. It examines the advantages and drawbacks of the various fuel options, making recommendations, but draws the conclusion that energy security can only be effectively addressed by putting energy demand at the heart of EU policy in this field.

Although oil will continue to play a key role in world transportation in the decades to come, there is a need to use increasingly less-polluting alternative transportation fuels. In the Green Paper energy efficiency and renewable energies are basic priorities for action in relation to security of energy supply with particular emphasis on demand management in transportation and buildings.
Climate change and the Kyoto Protocol are a basic concern of the Green Paper which is seen as an instrument for achieving climate change targets as well as securing energy supply. The US plan confirms the commitment to the environment and makes a number of recommendations but says little on carbon dioxide emissions and climate change issues. We would be interested to know your assessment of the environmental impacts of the projected growth in US energy consumption and in particular the implications of the increased use of fossil fuels.

Much of the plan's case for increasing the domestic supply of fossil fuels rests on the projected increasing gap between energy supply and demand. We are interested to learn more of your analysis of the scale of the gap problem and your assessment of the rate of growth of US energy demand over the next two decades.

Although rising energy prices may create some economic disruption and social hardship, in our view they do not necessarily constitute an energy-crisis as such. An assessment by the Commission services indicates that peak gasoline prices (reached a month ago in Europe) were in real terms below the levels of the 1970s. We do however share your concern about current high world market oil prices and increased dependence on Middle Eastern supplies. Like you, we seek price stability on the basis of price levels which are sustainable for both consuming and producing interests in the longer term. An enhanced consumer-producer dialogue and increased efforts to diversify energy supplies are shared objectives.

I share with you the need for a new look at the potential value of nuclear power. Our Green Paper is rather prudent on the future role of nuclear energy but stresses how nuclear power contributes to limiting carbon emissions. Your report makes a positive case for nuclear power to reduce the emission of greenhouse gases but I am sure you would agree that we have to devote substantial efforts to tackle the difficult issue of waste disposal. This may be another area in which we can work effectively together.

In general, it can be said that the EU and US have similar energy supply patterns being first and second importers of energy in the world. We are both leaders in energy technologies and in favour of liberalised markets. Your plan places emphasis on the optimal exploitation of domestic resources while the Community emphasis tends to be on diversified supplies from around the world together with improved energy efficiency and increased use of renewables.

Finally there is a need to reflect together on how our enhanced bilateral co-operation can be used to improve the management of global energy issues especially in international fora such as the G8, the WTO, the OECD/IEA and in our relations with OPEC. This co-operation will enable us to harmonise our positions, and as appropriate present a co-ordinated front. I very much welcome your planned orientation to go beyond domestic energy considerations and your proposal for greater co-operation with other countries and international organisations.
I am certain that your National Energy Policy report and Community initiatives such as the Green Paper provide the basis for future bilateral co-operation in the energy sector. I would like to reiterate my keen interest in co-operation with you and your services and I note with satisfaction the recommendation in your report for a reinvigoration of the EU-US energy consultations. In this context, I support the idea of a resumption of the consultative process later this year in Washington.

I believe it is important that we work together to ensure that economic, social and environmental concerns are taken properly into account in developing our policies to safeguard our energy future and to meet our international commitments in the environmental field.

Yours sincerely,
THE ENERGY CHALLENGE

To: Representative Secretary

Re: Natural Gas

Dear Representative Secretary:

Natural gas is a more difficult subject to address than petroleum, because the data is much less complete and reliable, and because the USA situation appears much more precarious than the world situation. BP/Amoco statistics imply that at 1998 consumption rates, the world has about 60 years of resources remaining. However, known reserves are much lower, resource estimates are highly speculative, and the major resources (approximately 70%) are in the Middle East and FSU (Former Soviet Union).

Natural gas can be readily transported by pipeline, but cannot be transported either in large quantities or economically by ship. Japan, Korea, and Taiwan have long-term contracts that lock up nearly all existing LNG shipping capacity. Europe may be able to depend on the Middle East and the FSU for several decades of natural gas supply. The USA does not have that luxury.

Because of transportation limitations, the USA must depend on North American natural gas. Mexico has already reduced exports to zero. Canada supplies about 15% of USA consumption, but has had very disappointing exploration results in recent years, and cannot be counted on to support major increases in consumption. Known USA reserves represent about eight years' supply at recent consumption rates, while demand is projected to grow by more than 50% during the next 20 years.

Included in natural gas resource estimates are:

* Associated resources - discovered along with oil fields, through drilling for oil.
* Non-associated resources - free flowing natural gas discovered without petroleum.
* Tight gases - natural gas in dense shale or sandstone deposits that requires extensive drilling and fracturing to recover.
* Coal bed methane - gas released from coal deposits that again requires extensive drilling and fracturing to recover.

Estimates for total resources vary widely from about 300 to 1,400 Tcf (Trillion cubic feet), and methods of estimating are very imprecise and speculative. Background data is not freely available to the individual, but databases can be accessed at the cost of a few thousand dollars. It seems likely that the higher resource numbers result from arithmetic addition of low probability estimates, and may therefore be meaningless. A number near 1,100 Tcf or 50 years is widely used, but is a very risky multiple of proven reserves. The hard data we do have is not encouraging. What we do know is:

* Drilling for natural gas in the five years from 1980 through 1984 was about double the average during the decade of the '90s, but annual average discoveries were slightly less.
* Because of the bad experience with wildcat drilling in the early '80s, drilling in the '90s tended to be concentrated near known large basins, extending their boundaries but not making major new finds.
* 9,000 new gas fields were discovered from 1977-87, but only 2,500 from 1987-97.
* With the application of new technology, especially hydraulic fracturing and horizontal drilling, initial production of new fields has been kept nearly constant for two decades, but depletion rate has been shrinking rapidly. New wells average 56% depletion in the first year of production.

Obtained and made public by the Natural Resources Defense Council, May 2002
* New finds are becoming progressively smaller.

* Proved reserves of natural gas in the USA declined from a peak of 290 Tcf in 1967-70 to 167 Tcf in 1989, and, with some fluctuation, have been flat since, in spite of a major drilling peak in the early 1980s as noted above.

* For the last 12 years, discovery has just kept pace with production, and consumption growth has been served by increasing imports.

* Of 1999 EIA estimated resources of 1,280 Tcf, 890 Tcf are classified as "undiscovered," and 220 Tcf as expected reserve growth. (Most of the discovery in the 1990s was reserve growth. How much can be left?)

* Natural gas production in the USA peaked in 1973.

* Natural gas supply from the Gulf of Mexico (GOM) shelf is in decline.

* Natural gas discovery in the deep Gulf of Mexico is much lower than expected, and the NRG Association now projects peak supply as 3 Tcf in 2007 versus the National Petroleum Council forecast of 4.5 Tcf in 2010.

* Simmons has noted that rig count in the Gulf of Mexico grew 40% from April 1996 to April 2000, and 60% in Texas from January 1996 to October 2000, with production remaining flat.

There is nothing in the known facts to support an optimistic resource estimate. Clearly the natural gas industry has to rapidly accelerate drilling, just to keep production flat. A large increase in wildcat drilling in the early '80s didn't help and may not again.

* Is Alaska going to help? Resources are projected by the EIA as 237 Tcf, but proven reserves are only 10 Tcf. Tcf/ year, less than 2% of 2020 needs. The energy to move the gas increases with the cube of the velocity, and, at this velocity, would require more than 2% of the gas moved just to drive the compressors. It may not be economical to build a pipeline?

The National Petroleum Council has forecast natural gas demand as 29 Tcf in 2010, and the EIA as well as the very unlikely that supply growth can keep up.

If we can't get annual discovery to 30 Tcf, and we try to grow production to 40 Tcf by 2020, we will deplete proven reserves to zero by 2025, at which point production would fall back abruptly to the then discovery rate, which might well be in decline. There is a real risk that natural gas supply will fall off a cliff before 2025, possibly much before.

Given "what we know" listed above, it seems likely that the often-mentioned 50 years of natural gas resources is very optimistic, even with consumption flat at 1999 levels. Assuming consumption growth to at least 30 Tcf/year by 2020, total resources are unlikely to exceed 30 years, and if the pessimists, (realists?) are right could be less than 20 years.

We have approved plans for a major increase in natural-gas-fired electricity generating capacity to come on line between now and 2010. I have read that 183,000 MW are in the pipeline to come on stream by the end of 2003, nearly all just 3 years. Given that major increases in drilling in the last 5 years have just kept production flat, one wonders if that growth can be met. If not what will be the impact on prices?

Another problem with major increases by 2010 is that much of it risks being obsolete for lack of fuel before it is 30 years old. What do our children do after 2030? Hopefully the turbines will burn hydrogen. Has this eventuality been planned?

The good news is that we will have several warning signals that allow a timely change of direction. The key signals will be failure of discovery to grow as hoped, and production crossing above discovery, resulting in a new period of decline in proven reserves.

The bad news is that we will have to open presently restricted areas to drilling, in spite of environmentalist opposition. Clearly criteria should be established that let us address those areas with the highest probability of gas and the lowest potential for environmental damage first, progressing sequentially down a well analyzed list from best to worst.

The natural gas prospect illustrates the folly of developing a policy that does not look beyond 2020. It also emphasizes the need to put a very high priority on development of renewable alternatives, while we still have the fossil fuel
energy with which to develop them.

Respectfully yours,

Murray Duffin, CIC

MD/mmb

THE ENERGY CHALLENGE - XIII

3 August 2001

To: Representative Secretary

Re: Policy - Decision Criteria

Dear Representative Secretary:

Before defining our policy, we need to test at least the major alternatives against some useful criteria. Key criteria could be Security, Sustainability, Environment, Economics, Ethics, and Morals. There are other possibilities, including politics and campaign financing, but these six are surely the most important. Note: The NEPDG does not even mention high-level criteria. Rather, it represents the shaping of policy in a vacuum.

Security
Consider that the USA has only 86 Gb (33%) left, of its originally estimated 260 Gb of ultimately recoverable oil. (Some experts believe it may be more like 50 out of 225). We can rush into a major and costly domestic supply side campaign, and deplete that remaining resource more quickly, or we can address the demand side and keep that resource well into the future as a reserve against unforeseeable contingencies. A US Army tank gets 0.5 mpg. What if we have to fight a war some time in the next three decades, and find tanker routes imperiled? Maybe we should maintain a serious domestic strategic reserve.

Also relative to ANWR, what can be less secure than our present Alaska pipeline, which the US military has described as indefensible, and which is already old enough and worn enough to pose significant maintenance issues?

Nuclear not only poses security risks from the point of view of potential bomb fuel and radioactive waste, but also from supply interruption. We import 90% of our fuel.

On the other hand, both energy efficiency and renewable energy resources are diffused throughout the nation, have no attackable choke points, are 100% domestic, and will not run out.

Sustainability
Any supply side source, other than renewables, is useable only once and ultimately runs out. Energy savings, once implemented, are exploitable forever after. Wind and solar are available as long as the wind shall blow and the sun shall shine. How can it makes sense to use energy and capital to build rigs and drill holes (many of them dry) when the same money could build wind turbines that never result in dry holes and provide energy year after year?

There is also the question of climate change. Even if there is still uncertainty, why take the risk of catastrophic consequences when we have...
excellent alternative choices?

All fossil fuels add CO2 and other emissions to our atmosphere. Coal is worst, and coal to replace scarce oil is three times worse than the oil it would replace. Energy efficiency can eliminate the need to replace oil without any emissions. Renewables can replace coal without any emissions.

If we continue to waste our fossil fuel resources, burning them to fuel inefficient ends, we deprive future generations of potentially much more valuable chemicals and fertilizers that could sustain many aspects of their lives, including food production. If we deplete the fuels before we build the wind turbines and photovoltaic arrays, we may not have the energy with which to build them.

We must not choose an unsustainable path, when a sustainable one is both more readily available and more economically attractive.

Environment
Apart from the debatable environmental questions of global warming and climate change, there are other serious environmental issues associated with fossil fuels. The primary ones are air quality and associated health issues. Others range from the local environmental devastation of strip mining (coal and tar sands) through pollution of aquifers to storage of nuclear waste and spent fuel. Many of the problems are extremely long lasting once created.

The only environmental issue seriously raised relative to wind is bird-killed, and with new large, slowly revolving turbines, that proves to be a non-issue. Photovoltaics, located on rooftops and in parking lots, can actually provide the environmental benefit of shade, reducing the very energy demand they are there to serve. Energy efficiency, by reducing both waste and energy needs, alleviates environmental problems.

Economics
There are too many aspects to this issue, nearly all favorable to efficiency and renewables, and unfavorable to fossil and nuclear, to deal with in a short paragraph. Just to note a few:

* Efficiency opportunities typically cost from 0.6¢ to 2¢ per KWh. Natural gas and coal impose costs greater than 3¢/KWh and nuclear, fully costed, is above 6¢/KWh.

* Wind is already as cheap as natural gas and coal, and costs are still dropping for wind, but will only rise for natural gas and coal.

* Importing fuel presents a major balance of payments burden, and developing new domestic oil supplies has a much higher associated cost than importing.

* Drilling the ANWR does not make economic sense, even at today's oil cost. No oil company is ready to jump in without subsidies and market guarantees. Every excess dollar spent on costly ANWR oil is a dollar not available for efficiency and renewables, resulting in more imports that could have been avoided, and worsening the balance of payments issue.

* Excess dollars spent on nuclear are even more deleterious, as we also import the fuel.

Ethics
The USA fought a Revolutionary War over taxation without representation. If we continue to imperil the energetic fate of future generations, without developing viable alternatives, we in effect impose a major tax, and future generations are clearly not represented in the decisions. We have an ethical imperative to safeguard their rights. Wantonly depleting the last of a valuable resource is totally contrary to that imperative.

The nuclear industry may claim to safeguard the energy future, but they
impose the problems of current pollution (from mining, milling, and concentrating) on our suppliers, as well as the problems of radioactive waste on future generations for thousands of years.

Efficiency and renewables avoid all such issues.

Morality
As the acknowledged world leader both economically and militarily, (and most of us would like to think socially and politically), we have a moral duty to aid the development of our less fortunate brethren worldwide—not to increase their difficulties. Consuming fuels that they will need in the future as feedstock for chemicals, pharmaceuticals, and agriculture is contrary to this duty.

Developing the technologies of efficiency and renewables, creating the market volume to lower costs, and easing their access to such technologies so they do not have to repeat our wasteful history fulfills our duty.

The above examples present only a very limited and qualitative introduction to the evaluation of strategic criteria. Brief reflection on anyone's part can more fully flesh out the arguments. However, even from this truncated exposition it is clear that the hydrocarbon/nuclear supply side approach fails all reasonable criteria, while the energy efficiency/renewables approach passes the test of every criterion. An extensive and quantified evaluation would make the case compellingly and irrefutably.

If the case is so clearly made, based on a reasonable evaluation against primary criteria, why has it escaped the NEPDG? There are at least three reasons:
* It is human nature to put narrow, concrete self-interest ahead of compelling but less tangible national and spiritual values.
* The members of the NEPDG represent only a very narrow spectrum of interests, and are both providers and victims of disinformation.
* There are major economic interests involved.

It is interesting to note that of 63 energy advisors selected by the present administration, nearly all of them represent the constituencies that stand to benefit the most from the emphases apparent in the NEPDG report, i.e. 27 are from the oil and gas industry, 17 from nuclear, 16 from mainly coal-fired electric utilities, and 7 from the coal industry. There are no renewable industry representatives, and no experts on the practical opportunities for energy efficiency.

A good national energy policy will require inputs from a much broader group of experts, including national security analysts, ethicists, environmentalists, neutral economists, and, most importantly, renewables and efficiency experts.

Respectfully yours,

Murray Duffin

MD/mmb