February 1, 2001

Vice President Richard Bruce Cheney
The White House
Washington, D.C.

Dear VP Cheney:

Let me start by indicating my delight at our new administration, and your new VP position. I have supported you and President Bush, and have been pleased at the material received from you and the President thanking me for my support.

My reason for this letter is to provide important information for you as head of the new energy task force. My topic involves the need to reestablish nuclear energy in this country. As you can see from the brief enclosed biography, I am knowledgeable about the subject. I should note that I have no personal reason to support nuclear energy except for the welfare of the nation, the world, and my children and grandchildren.

Before the Arab oil boycott of 1973, energy in this country was doubling every ten years and nuclear energy was being supported by the environmental movement because of need, and concern over the detriments of the other available energy sources. After the boycott, energy growth slowed to a doubling every 35 years; and because of the orders placed before 1973 there has until recently been a surplus of energy plants in this country. The environmental movement since 1973 has been against all new energy plants, and because of the surplus, it has not mattered until recently. But for the past couple of years there have been shortages, and, in particular, California is now under deep trouble from lack of needed electricity.

Mr. Cheney, the situation will get much worse with time. The Energy Information Agency predicts an increase of 30-40% of energy use in this country in the next two decades. More troublesome is the increase in the third world population, and because of the average increase in per person energy use worldwide, it is projected that world energy use will double to quadruple in the next fifty years. This will put a major problem on the cost and availability of gas and oil, which is predicted to be depleted in this century (coal next century). Furthermore, increased use of fossil fuels is projected to lead to global warming catastrophes. If the above concerns are real, there is only one available means to mitigate or eliminate these problems, and that is with a major increase in the use of nuclear energy, worldwide. Advanced nuclear power has the capacity to provide clean world energy for thousands of years.

In this country nuclear power has been dying; primarily from lack of need; and from resulting US government impediments, which caused new nuclear plants to be uneconomic because it took 10 to 20 years to build them here. Overseas, US companies build plants in an economic 4 or 5 years. The Nuclear Regulatory Commission recognized its licensing impediments and has recently adopted new procedures which are intended to allow new plants to be built here economically.
The problem is that these new procedures have not been demonstrated to be workable, considering the anti-nuclear suits likely to be filed. Thus, to provide the ability to revive nuclear power here, and to lead the world on a sensible means to utilize non-greenhouse gas nuclear power, we should be demonstrating that we can now build nuclear plants efficiently here. With the increased price of gas, nuclear energy can be the lowest cost energy source available. In this country and the west, it has been the safest.

Mr. Cheney, the point of this letter is bring forth the major need for nuclear energy in the US and the world in the future; and the need to move now in the US to take away unnecessary impediments, and to demonstrate that we can be world leaders in the needed nuclear expansion. If we had built new nuclear plants in this country we might have avoided our present energy problem; should we wait for the new disasters before moving?

I hope the material above will be of use to you. I have previously written to Sec. Abraham, and will also communicate with Sec. Norton. Mr. Vice President, if I can be of further aid to you please contact me. I would be pleased to come to Washington if you think it would be of help.

Sincerely,

Bertram Wolfe

cc: Sec Abraham; Sec Norton

I am appending a brief biography; and a copy of a recent Op-Ed piece that was published in the LA Times.
Dr. Bertram Wolfe is a pioneer in the development of peaceful nuclear energy. He is presently an independent Consultant in the fields of business, energy, and nuclear energy. He has been on the Boards of Directors of Houston Industries and Houston Lighting and Power Co.; and is on the Boards of Urenco Inc. and Urenco Investments Inc.. He is also on a number of industry and academic advisory committees. These activities follow a career of over thirty five years with General Electric, from which he retired in 1992 as a Vice President and General Manager of GE's Nuclear Energy Business.

Dr. Wolfe received a BA in physics from Princeton U and a Ph.D. in Nuclear Physics from Cornell U. He joined GE in 1955; has since worked in almost all technical phases of peaceful Nuclear Power and has had responsibility for a number of successful nuclear reactor projects. In 1987 he was appointed a Vice President of GE and Manager of its Nuclear Energy Division.

Dr. Wolfe was elected to the National Academy of Engineering in 1980 and has served on several NAE Boards. He was elected President of the American Nuclear Society in 1986-7; was the recipient of the Walter Zinn technical accomplishment award in 1990; was honored with the Henry DeWolf Smyth nuclear statesman award in 1992; and was presented with the Tommy Thompson Nuclear Safety Award in 1997. He is a fellow of the American Nuclear Society, and a Professional Engineer in the state of California. He has been a member of a number of electric power industry advisory boards; has written well over a hundred publications on energy and nuclear energy; and is well known as a spokesman on energy and nuclear energy.
State's Energy Problem Has Roots Nationwide

By BERTRAM WOLF
and CHAUNCEY STARR

Why is California now suffering from a lack of affordable electricity? The answer is that California and the nation have not looked responsibly to the future.

In the late 1960s and early 1970s, the United States was doubling its electricity use every 10 years. To meet growing needs, utilities were planning major orders for new generating plants. In 1973 the situation changed. The Arab oil boycott and the resulting higher energy costs slowed the growth of electricity use to a doubling in 35 years. As a result, the new plants ordered before 1973 that were subsequently built led to a surplus of electrical supply.

That nationwide surplus, which is now gone, is what California officials were counting on when deregulation was approved in 1996—a robust, competitive market of wholesale electrical supply from generating companies outside the state.

That expectation failed, Why?

Before 1973, the Sierra Club supported nuclear power. Since then, the influential "environmental" organizations have opposed nuclear plants, as well as dams, and even geothermal plants.

They argue for solar and wind power, which on a large scale are impractical because of their immense land use and their intermittent availability; indeed, on such a scale they are environmentally detrimental.

However, with a surplus of energy supply, it didn't matter.

But the electrical surplus has vanished. In the U.S. we now need new energy capacity to meet our present and future needs. On a world scale, population in the next 50 years is projected to increase from 6 billion to 10 billion. If the average per-person energy use reaches only one-third of that in the U.S. today, world energy use will triple. Thus, we face both serious short-term national and coming world energy problems.

In this country we must decide how to meet our energy needs. The Energy Information Administration projects a continued U.S. increase of electricity needs of 4% in the next 20 years, and the needed replacement of 25% of our current capacity.

There are problems that must be addressed. The price of natural gas has quadrupled in the past year. New gas-fired electricity plants, which are the least expensive source of electricity, are now the most expensive. Natural gas supply will remain tight for the foreseeable future, with accompanying price volatility depending on weather and import availability from Canada and Mexico. Oil is subject to serious overseas political problems, and costs that have gone up and down. Coal, which is among the most plentiful and least costly energy sources, has environmental problems: large emissions of CO2 and other pollutants, including small particles.

Nuclear energy, which has no significant emissions, can also be among the least-cost energy sources, but it has political barriers to overcome. The 183 existing nuclear plants (ordered before 1973) remain a vital, safe, electricity source in California and the U.S. But since 1973 it has taken an unworkable 10 to 20 years to build the previously ordered nuclear plants in this country, whereas U.S. firms build nuclear plants abroad (and used to build them here) economically in four or five years. Similar antinuclear forces have unnecessarily delayed the construction of repurposed nuclear waste facilities.

The electricity trap in which California now finds itself as a consequence of the national trends coming together this winter. Weather has increased demand in the Western U.S., so California cannot depend on low-cost electricity purchases from neighboring states. The political response has so far been Brown-love, which do not take the root issue of making California a net exporter for long-term investment by electricity generators.

The recent electricity problems in California make it clear that we must take action to prevent future energy disasters. In the next few years, our only means to provide the needed electricity is with an expansion of gas and/or coal-powered plants, with their financial and environmental problems. We should demonstrate now that nuclear plants can be built here as efficiently as they can be built abroad and move to get our waste repositories moving. We need government commitment and action to ensure that we can meet our near-term and long-term energy needs in California and nationally.

The one available solution is a major increase in the utilization of nuclear energy.
January 31, 2001

Ms. Majida Dandy
US Department of Energy
1000 Independence Avenue
Washington, DC 20585

Dear Ms. Dandy:

Attached is a letter with support material addressed to Mr. Spencer Abraham. The subject are solutions to the energy crisis. TRD professionals are applying these solutions on a small scale. We wish to make our experiences and software available to the US Department of Energy for national exposure.

A copy of this letter has been sent to Vice President Richard Cheney, who is heading an energy task force.

Your name was given to me as the person who can assure that this letter will come to the attention of Mr. Abraham before he possibly may be contacted by Vice President Cheney in this matter.

Thank you for your kind assistance.

Sincerely,

Walter A. Hans
President

21124
DOE022-0005

Phone: (856) 667-3342 Fax: (856) 667-8168
E-Mail: TRDCORP@AOL.COM
P.O. Box 2820 - Cherry Hill, NJ 08032-0246

Obtained and made public by the Natural Resources Defense Council, March/April 2002
January 31, 2001

Mr. Spencer Abraham, Secretary of Energy
US Department of Energy
Washington, DC 20585

Dear Mr. Secretary:

Electricity supply and price problems can be solved swiftly and competition among energy providers can be enhanced by eliminating barriers to free market forces and informing consumers how to use energy cost-effectively.

Industrial plants alone can reduce electrical peak loads sufficiently throughout the nation to prevent power shortages. The combined load reduction capacity of industrial plants is more than 45,000 megawatts. A large portion of this reduction is accessible immediately through market driven incentives and does not require any capital investment.

The above mentioned load reduction is equivalent to approximately 7 percent of the total 1999 net summer generation capacity in the US and more than the planned capacity additions for the years 2000 through 2004. This reduction is being accomplished through energy usage and source flexibility, mainly through operational adjustments and/or the use of on-site generation (see “Solving the Energy Crisis with Market Driven Incentives”).

For over 20 years, TRD professionals have developed and tested methodologies and tools for improving the overall technical operating efficiency and enhancing energy usage and source flexibility in industrial plants.

TRD wishes to make its expertise and software available to the US Department of Energy.

In my opinion, the US Government is the only body that can initiate an immediate promotion of the energy usage and source flexibility concept on a national basis and issue guidelines for individual states to remove regulatory barriers that impair full benefits for the consumer.

I am prepared to provide further details and make a presentation about the subject to your agency. Please have me contacted personally.

Sincerely,

Walter A. Hans
President

cc: Vice President Richard Cheney

Telephone: (555) 667-3342 Fax: (555) 667-8168
E-mail: TRDCORP@AOL.COM
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21125

DOE022-0006
Solving the Energy Crisis with Market Driven Incentives

Industrial plants alone can reduce electrical peak loads sufficiently throughout the nation to prevent power shortages for years to come. The combined load reduction capacity of industrial plants is more than 45,000 megawatts. A large portion of this reduction is accessible immediately through market driven incentives and does not require any capital investment.

The above mentioned load reduction is equivalent to approximately 7 percent of the total 1999 net summer generation capacity in the US and more than the planned capacity additions for the years 2000 through 2004.

Similar results can be achieved in the commercial sector. Educational tools are being developed by TRD to make curtailment of electricity usage during peak load conditions financially attractive in the residential sector.

The Peak Load Reduction Potential

The reduction of the peak load by 45,000 megawatts in industrial facilities alone was based on the assumption that 25 percent of all industrial operations in the US will convert to energy usage and source flexibility (see attached table "Potential Electricity Peak Load Reduction").

Energy usage and source flexibility is a combination of load reductions, load shifting and on-site generation, used to reduce electricity usage during peak load conditions and control energy costs.

Some industrial plants with critical operations and many institutional facilities, such as hospitals and banking centers, have standby generation equipment already in place.

The California power crisis will accelerate the trend toward power self-sufficiency for those operations that suffer consequential losses from power outages, which includes almost all industrial plants.

Facilities with full standby generation capacity can reduce their electricity usage to zero during peak load conditions without incurring any significant expenses. To the contrary, market driven incentives offer large benefits.

Many of these facilities do not participate in load reduction programs, offered by utilities, because of unrealistic requirements, poor incentives, penalties for non-compliance and penalties for intensified electricity usage after a load reduction. The use of load reduction programs for price control purposes, which is becoming more frequent, is quickly reducing participation.

One of TRD’s main accomplishments is simplifying the way complex interrelations, such as energy flows in large industrial plants, are viewed and managed. TRD’s optimization tools make energy flows visible, understandable and therefore easily manageable.

Page 1 of 4

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TRD

21126

DOE022-0007
Energy flows are shown in energy units as well as dollar values. Financial and technical management can now communicate by looking at data that is meaningful to both.

One of the optimization tools, TRD's Energy Flow Model, is available as software. It computes instantly and accurately the total energy costs of all types of energy used in a facility, in hourly, daily, monthly or yearly intervals, for any number of variables inside a facility and in the energy market.

The simplicity of TRD's software, which quickly and accurately projects potential financial gains, capital investment requirements and clearly identifies the effect of regulatory barriers, will almost guarantee the immediate participation in energy usage and source flexibility by some. Others will be forced to follow in order to stay competitive.

The newly developed software also enables TRD to quickly train consultants and client management in the application of energy usage and source flexibility. Therefore, a national distribution of these tools will provide a realistic basis for the projections made.

**Electricity Price and Supply Pattern**

The attached chart "Localized Marginal Pricing (LMP) of Electricity" shows inter-utility trade prices in Delaware during July 1999, the hottest month within the last 10 years. High prices (yellow) represent high power grid loads, and low prices (black) low loads. It should be noted that prices went as low as $0.00 (red) during night hours.

The chart "Annual LMP Averages 1999" shows hourly price averages for the entire year of 1999 in Delaware, a critical supply area in the Mid Atlantic region.

The pattern of low LMP prices during night hours continued through 2000. It is not likely that this pattern will change. Low prices during night hours are the result of enhanced competition because of low demand.

There is plenty of generation and transmission capacity in place to serve demand during most of the year. The supply is running short mainly during summer days between noon and early evening, in regions that experience extremely high temperatures over consecutive days.

The current crisis in California is the result of coincidental circumstances:

- Poor energy planning, poorly written deregulation rules and poor timing
- Approximately 30% of generation capacity down for overhaul
- Low water levels in hydro-electric facilities
- A surge in the use of electricity for heating purposes because of a cold winter
- Lack of sufficient transmission capacity inside and into California
- High natural gas prices, coupled with insufficient pipe line capacity
- The opportunity to manipulate the market

The real crisis in California may come this summer if temperatures are going to be above normal because capacity reserves, used during peak load periods, have been exhausted for 2001.

Page 2 of 4

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21127

DOE022-0008

Obtained and made public by the Natural Resources Defense Council, March/April 2002
Energy Cost Savings Opportunities

Case studies have shown that electricity costs can be reduced by over 50% with energy usage and source flexibility and the application of rates that are based on Localized Marginal Pricing or Real Time Pricing (terms used by Independent System Operators for pricing in the inter-utility trade). The attached chart “Trend of Electricity Costs” demonstrates that concept.

These savings quickly generate the capital for the purchase of on-site generation equipment that may be needed to secure operations during black-outs and brown-outs and to cap electricity costs during periods of high market prices.

Energy usage and source flexibility secures immunity from price peaks in the electricity market by giving the consumers of energy control over their energy cost efficiency through operational adjustments and standby generation.

Energy cost reductions under energy usage and source flexibility are driven by four major factors:

1. Reduction of electricity usage during peak usage hours (usually daytime)
   a. Improvement of equipment efficiencies
   b. Improvement of the overall energy usage efficiency in a facility

2. Shifting of electricity usage to hours of the day when excess generation capacity is available in the market (usually nighttime)
   a. Scheduling of batch type and single shift operations during night hours for 24-hour operations
   b. Changing day shifts to night shifts for single shift operations

3. On-site generation of electricity

4. Sales of excess generation capacity during periods of high market prices, offsetting electricity costs

Over 90% of all conservation efforts, presently made, concentrate on equipment efficiency improvements. The rise in energy prices, as occurring in California and other states, will make the rate of return on investment for these projects appear more favorable. Nevertheless, investment in energy usage and source flexibility can reduce energy costs substantially, below current levels and thereby diminish the rate of return for equipment efficiency projects.

Regulatory Barriers

The removal of regulatory barriers in prevailing electricity tariffs is important in order to guarantee the full success of energy usage and source flexibility. Traditional tariffs, that are still in effect everywhere (even in deregulated areas in form of distribution charges), penalize electricity usage when generation capacity is plentiful during most of the year due to rigid and excessively long on-peak hours.
Interruptible service riders may offer some incentives to reduce electricity usage during supply emergencies but in turn, peak demand charges (part of prevailing tariffs) will penalize the “catch-up need” for electricity usage after a voluntary load reduction.

Some states included penalties for the use of on-site generation in their deregulation rules.

**Voltage Reductions - Brown Outs**

Voltage reductions have become common practice for balancing the demand and supply in case of temporary supply shortages. Voltage reductions usually precede power outages and there is no system in place to alert consumers. Voltage reductions that are within legal limits at the source can become extreme at the end of the line because of overloading. Distributing utilities have no reliable methods to identify coincidental load accumulations that occur in distribution systems, particularly during peak load conditions.

Voltage reductions put a strain on electrical equipment and therefore reduce its lifetime.

Most consumers are not aware of voltage reductions and do not suspect problems because of the excellent, past performance of the power industry in the US, when brown-outs were uncommon. Few consumers are even equipped to monitor the supply voltage.

It is difficult to assess the extent of damage frequent voltage reductions will cause. On-site generation capability is an effective protection against low voltage conditions.

**Environmental Considerations**

Some thoughts about the environmental impact of energy usage and source flexibility. The total hours per year, when market prices for electricity exceed on-site generation costs and on-site generators will be running, are few. In 1999 there were 178 hours registered in Delaware and in 2000 less than 50 hours.

Load reductions and load shifting reduce the generator capacity needed. Therefore, the use of on-site generation equipment will probably cause less pollution than that caused by generation stations which are used for peak load reduction and are almost exclusively fossil fuel driven.

It should be noted that the planned additions to the generation capacity in the US through 2004 will consist almost exclusively of fossil fuel driven generators.

Energy usage and source flexibility will reduce the peak load on generation equipment and transmission lines throughout the US. This will secure an expansion of the US economy with the equipment in place.

Natural gas will be used by on-site generation equipment during the summer, when gas supplies are plentiful, and this equipment will be shut off during winter when electricity prices are usually low.
Potential Electricity Peak Load Reduction

The Net Summer Generating Capability in the US in 1999 was 639,324 megawatts.1 Assuming an average national capacity reserve of 10%, the peak summer load would be:

\[ 639,324 \text{ MW} \times 0.9 = 575,392 \text{ MW} \]

The electricity usage by sector in 1999 in 50 states was:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Megawatt Hours</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Sectors</td>
<td>3,235,899</td>
<td>100.00</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,017,783</td>
<td>31.45</td>
</tr>
<tr>
<td>Commercial</td>
<td>970,601</td>
<td>30.00</td>
</tr>
<tr>
<td>Residential</td>
<td>1,140,761</td>
<td>35.25</td>
</tr>
<tr>
<td>Others</td>
<td>106,754</td>
<td>3.30</td>
</tr>
</tbody>
</table>

Assuming that the peak load contribution is distributed equally among all sectors, the peak load contribution of the industrial sector would be:

\[ 575,392 \text{ MW} \times 0.3145 = 180,960 \text{ MW} \]

There were 530,335 industrial consumers of electricity in the US in 1999. If 25 percent of all industrial consumers implement energy usage and source flexibility and reduce electricity usage to zero during peak load periods with a combination of load reductions and on-site generation, the potential electricity peak load reduction will be:

\[ 180,960 \text{ MW} \times 0.25 = 45,240 \text{ megawatts} \]

on a nationwide basis.

1 Source of all data: DOE Energy Information Administration
<table>
<thead>
<tr>
<th>State</th>
<th>Year</th>
<th>Methodology</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>1999</td>
<td>Delaware</td>
<td></td>
</tr>
</tbody>
</table>

**Localized Marginal Pricing (LMP) of Electricity**

**Delaware, in July - 1999**

**Electricity Prices in $/Megawatt**

<table>
<thead>
<tr>
<th>Time</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>02:00</td>
<td>25.50</td>
</tr>
<tr>
<td>02:30</td>
<td>25.50</td>
</tr>
<tr>
<td>03:00</td>
<td>25.50</td>
</tr>
<tr>
<td>03:30</td>
<td>25.50</td>
</tr>
</tbody>
</table>

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

**DOE22-0012**

**21131**
## Trend of Electricity Costs

Case Study, Refrigerated Warehouse

<table>
<thead>
<tr>
<th>Electricity Costs for the Year:</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1999</td>
<td>2000</td>
<td>2001</td>
</tr>
<tr>
<td>Original Tariff</td>
<td>700</td>
<td>789</td>
<td>950</td>
</tr>
<tr>
<td>RTP 1 - with generation and partial load shifting, without demand control</td>
<td>520</td>
<td>550</td>
<td>520</td>
</tr>
<tr>
<td>RTP 2 - with generation, maximum load shifting and demand control</td>
<td>365</td>
<td>365</td>
<td>365</td>
</tr>
<tr>
<td>RTP 3 = RTP 2 with efficiency improvements</td>
<td>340</td>
<td>340</td>
<td>340</td>
</tr>
<tr>
<td>RTP 4 = RTP3 with sales of excess generating capacity</td>
<td>290</td>
<td>340</td>
<td>-30</td>
</tr>
</tbody>
</table>

Electricity Costs are shown in $1000
RTP 1 stands for "Real Time Pricing rate, scenario 1"
RTP is a term used in inter-utility trade pricing

It was assumed that the summer of 2001 will have several periods of extreme temperatures over consecutive days in the high 90 Degree Fahrenheit.

Costs for 1999 and 2000 were based on actual market prices.
From: Luke Geissbuhler
Sent: Friday, February 02, 2001 11:26 AM
To: Secretary, The
Subject: Re: Alaskan Wildlife Refuge

See attached letter.

Don't open up the protected lands.
Luke Geissbuhler

President Bush's Energy Task Force,

As a citizen of the United States, I fervently believe that the policy to open up the Alaskan Wildlife Refuge is a crime beyond belief. How dare our so-called President break into his term by pushing a lightly veiled policy to benefit his oil cronies and not the American people or its land. The California energy crisis has nothing to do with needing to drill more oil. I warn you of this. If this policy goes through, you will all go down in history as the administration that destroyed the environment. Push through the Kyoto Protocol without greenhouse sinks in other countries and DO NOT open the protected lands to industry. Take the higher road, we are at a critical moment in world history where everything could change. We are watching you all very closely. I thank you for your time, and I hope we see a common goal.

Luke Geissbuhler

Cc: 
President Bush 
Christie Whitman 
Spencer Abraham 
Ann Veneman 
Paul O'Neill 
Donald Evans 
Norman Mineta 
Gale Norton

21136
DOE022-0017

Obtained and made public by the Natural Resources Defense Council, March/April 2002
To: Secretary Abraham  
Fax: 202-586-4403

From: Kammen et al., RAEL  
Date: 2/16/01

Re: National Clean Energy Strategy  
Pages: 10

CC: List

Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Spencer Abraham  
Secretary of Energy  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, D.C. 20585-0705

Dear Secretary Abraham,

I am writing to applaud the formation of the Federal Task Force on Energy. The mission of the Task Force is critical to both the economic and environmental future of the nation.

I am pleased to have the opportunity to submit the attached letter that presents a series of observations and policy recommendations that my colleagues and I hope the Task Force will find useful. A copy of this letter will also be sent by email and first class mail.

My colleagues and I would be pleased to discuss these issues further should that be of use to the Task Force, the Department of Energy, or other federal agencies.

Sincerely,

Daniel M. Kammen  
Associate Professor of Energy and Society  
Energy and Resources Group  
University of California, Berkeley

Cc: The Hon. Richard Cheney, Vice President  
Governor Gray Davis, Governor of California  
Rodriguez Blumenthal, Acting Director, Office of Science and Technology Policy  
Senator Frank H. Murkowski, Chairman, Senate Committee on Energy and Natural Resources  
Senator Jeff Bingaman, Ranking Member, Senate Committee on Energy and Natural Resources  
Hon. W.J. "Billy" Tauzin, Chairman, Committee on Energy and Commerce  
Hon. John D. Dingell, Ranking Member House, Committee on Energy and Commerce
February 16, 2001

Dear Vice President Cheney:

We applaud your efforts as you begin a comprehensive review of U.S. energy policy. This critical initiative is long overdue, and is particularly relevant today as the California energy crisis illustrates the deficiencies in regional and national energy policy and planning. Additionally, as the threat of global climate change is becoming widely acknowledged in the U.S. there is a growing understanding that a responsible national energy policy includes a global climate change mitigation strategy that can be environmentally effective and economically advantageous.

We are concerned that the current crisis mentality pervading the discussions of energy issues in the country has fostered an ill-founded rush for “quick fix” solutions that, while politically expedient, will ultimately do the country more harm than good. It is critical to examine all energy options. The potential for renewable energy technologies and energy efficiency to have a significant positive impact on our energy future is such an example of an opportunity that demands far greater examination and commitment to implementation than we have seen to date.

In the last decade the case for renewable energy has become compelling economically, socially, and environmentally. For many years renewables were seen as environmentally and socially attractive options that at best occupied niche markets due to barriers of cost and available infrastructure. That situation has dramatically changed. Renewable energy resources and technologies – notably solar, wind, small-scale hydro, and biomass based energy, as well as advanced energy conversion devices such as fuel cells – have undergone a revolution in technological innovation, cost improvements, and in our understanding and analysis of appropriate applications. There are now a number of energy sources, conversion technologies, and applications, where renewable energy options are either equal,
or better, in price, and equal, or better, in services provided than are the prevailing coal, oil, and gas technologies. For example, in a growing number of settings in industrialized nations, wind energy is now the least cost option across all energy technologies with the added benefits of being quick to install and being on-line, and modular. In fact, some farmers in the Midwest can generate more income per hectare from the electricity generated by a wind turbine on their land than from their crops or ranching proceeds. Furthermore, photovoltaic panels and solar hot water heaters placed on buildings and houses across America could help reduce consumers’ energy costs, produce a healthier living environment, and increase our energy supply while stabilizing our energy demand.

California’s energy crisis has recently caught the national attention and raised fundamental questions about regional and national energy strategies. Rising demand suggests the need for new energy supplies, and certain some new energy capacity is needed. However, there is a wide range of options for achieving supply and demand balance, and some of those options are not being given adequate attention. Governor Davis in California is now emphasizing policies that put the state into the position of brokering power purchases. Not only is this unlikely to be economically efficient, it fails to address the underlying problems of market manipulation and under-investment in capacity expansion of new, clean, technology development and installation. We believe that state-wide, public sector investment in renewable energy generation, combined with increased municipal control of electricity production and retail sales, would offer a better and more meaningful long-term solution to the problems that electricity deregulation has raised.

In general, the absence of past state and federal leadership has meant that we have seen too few incentives for energy conservation and efficiency measures, little attention to appropriate power plant siting issues, and lack of long-term concern for transmission and distribution bottlenecks. At the national level drilling for oil in Alaska’s Arctic National Wildlife Refuge is one step that could be taken to increase oil supplies. Yet, it would have a negligible effect on electricity production, and would not significantly reduce oil prices, improve energy security, or alleviate the trade deficit. Any oil and gas found will be trivial in comparison with global production and long-term U.S. consumption. This combined with the economic and environmental costs of such a proposal make disrupting the Arctic Refuge an unnecessary step, and illustrate a lack of integrated energy planning.

We firmly believe that the ultimate solutions to meeting our nation’s energy needs must be based on private sector investment, bolstered by well-targeted government support such as tax incentives for emerging energy technologies and R&D. This must be coupled with policies that open markets to new generating capacity, rather than through federal subsidies for programs to increase energy supply using already mature technologies. This latter strategy would only generate near-term and incremental paybacks, while doing little to promote energy security or advance social and environmental goals. Instead, we now have the opportunity to build a sustainable future by engaging and stimulating the tremendous innovative and entrepreneurial capacity of the U.S. private sector. To accomplish this, we must develop policies that guarantee a stable and predictable economic environment for advancing clean energy technologies. This can be further bolstered by market incentives to reward actions that advance the public good. The Federal Energy Task Force has the opportunity to clarify federal policies, build a sustainable energy research base, encourage state and regional initiatives, and build dynamic markets and industries focused on clean energy options. With these thoughts in mind, we present several options that address both the short-term need to increase
energy supply and the long-term goal to have a sustainable, economic and environmentally sound U.S. energy policy.

- Increase federal R&D funding for renewable energy and energy efficiency technologies. To date, federal investment in renewable energy and energy efficient technologies has been sparse and erratic, with each year producing an appropriations battle that is often lost. The resulting financial and policy uncertainty discourages effective energy technology development and deployment in the marketplace. With energy now a clear national priority, funding for the U.S. Department of Energy's Energy Efficiency and Renewable Energy Program must be substantially and systematically increased. The realization that R&D funding provides a critical driver to economic growth resulted in important commitments, particularly in the life sciences, to doubling R&D funding in five years. The same return on investment exists in the energy sector, but it has not been translated into similarly increased R&D funding for new renewable and energy efficiency technologies. If the U.S. expects to be a world leader in this industry, as it is in the biomedical and high-tech sectors, such investments in renewable energy and energy efficiency are essential. (See Appendix, Note 1)

- Provide tax credits in addition to tax cuts for companies developing and using renewable energy and energy efficiency technologies. The R&D tax credit has proven remarkably effective and popular with private industry, so much so that there is a strong consensus in both Congress and the Administration to make this credit permanent. Clean energy must be a national priority, and given the importance of private sector R&D in commercializing new technologies, an additional tax incentive for R&D investment in renewable and energy efficiency technologies is exactly the type of well-targeted federal policy that is needed. Furthermore, tax incentives directed toward those who use the technologies would provide the "demand pull" to accelerate the technology transfer process and rate of market development. The U.S. has largely lost its position as the global leader in energy innovation resulting in the loss of jobs and earning potential for U.S. companies precisely at the time when the international market for clean energy technologies is booming. Our domestic industries as well as the global energy economy would both benefit directly from a renewed commitment to U.S. clean energy leadership.

- Institute improved efficiency standards for residential and commercial water heating and space heating and cooling, and motors and appliances. Significant advances in heating and cooling system efficiency, and for motors and many appliances, have been made, but more improvements are technologically possible and economically feasible. A clear federal statement of desired improvements in system efficiency is needed to remove uncertainty and reduce the economic costs of implementing these changes. If such a federal mandate existed then efficiency standards for heating and cooling, and for motors and appliances would begin to gradually increase, helping to expand the market share of existing high efficiency systems, as well as spurring a wealth of further improvements. (See Appendix, Note 2)

- A federal renewable portfolio standard (RPS) to help build renewable energy markets. The RPS is a renewable energy content standard, akin to efficiency standards for vehicles and appliances that have proven successful in the past. A gradually increasing RPS is an economic way of ensuring that a growing proportion of electricity sales are provided by renewable energy, and is designed to integrate renewables into the marketplace in the most cost-effective fashion.
In this manner, the market picks the winning and losing technologies and projects, not administrators. We recommend a 20–23 percent renewable energy component within ten to fifteen years, using market dynamics to stimulate innovation through an active trading program of renewable energy credits. (See Appendix, Note 3)

- Federal standards for net metering of distributed small-scale energy generation. Net metering allows customers to interconnect and feed surplus power back into the grid during periods when generation exceeds the customer’s own use. Such a system makes it easier and more affordable for customers to generate their own power from renewable energy sources or other distributed generation technologies. The use of net metering benefits customers, utilities, and independent power providers, and is particularly important for intermittent renewable sources, such as solar and small wind machines, which generate electricity only when the resource is available. A uniform federal standard is needed to replace the confusing and disparate array of state net metering programs currently in existence. (See Appendix, Note 4)

- Form a National Public Benefits Fund based on revenue collected from a national, competitively neutral wire charge. Such a fund could match state funds to assist in continuing or expanding energy efficiency, low-income services, the deployment of renewables, research and development, and similar public purpose programs the costs of which have traditionally been incorporated into electricity rates by regulated utilities. As the utilities have moved toward deregulation such public benefit funds have been disappearing.

- Improve federal standards for vehicle fuel economy. New hybrid vehicle technologies are beginning to enter the marketplace, offering significant improvements in vehicle fuel economy at modest incremental vehicle costs. Looking beyond the initial wave of gasoline hybrid vehicles, fuel cell vehicles are currently under active development by all of the large automakers and promise even higher efficiencies and still lower emission levels. The improvements in fuel economy that these new vehicle types offer would help to slow growth in petroleum demand, reducing our oil import dependency and trade deficit. While the Partnership for a New Generation of Vehicles helped to generate some vehicle technology advances, an increase in the Corporate Average Fuel Economy (CAFE) standard is required to provide an incentive for companies to bring these new vehicles rapidly to market. The potential for future hybrid and fuel cell vehicles to achieve over 100 miles per gallon is believed to be both technologically and economically viable in the near-term, and needs only clear federal guidelines and support to move from planning to reality. (See Appendix, Note 5)

- Integrate domestic energy and environmental planning with U.S. global leadership. The need for leadership on the global climate issue has become particularly apparent with the lack of international cooperation at the recent climate meeting in The Hague. Past domestic political opposition to U.S. leadership in this area was based on outdated views of the science and economics of climate change. It is now widely understood that the costs of inaction on global warming can be catastrophic, while the benefits of action to reduce the environmental impacts of energy use through new innovation, developing clean energy industries, and improving domestic air quality and health can be substantial. This represents the classic ‘win-win’ scenario. Significant action on climate change mitigation now appears unlikely unless the U.S. takes on a significant leadership role. (See Appendix, Note 6)
If we hope to enjoy the type of prosperity in the coming century as we have in the past the work of the Task Force on Energy in formulating a new national energy policy must be carried out with careful consideration. We commend you for this auspicious undertaking and would be happy to elaborate further on any of the points raised above. Thank you for the opportunity to weigh in at this critical juncture in our country's history.

Sincerely,

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Appendix: Supporting Materials and References

Many of the publications listed below are available online at the Renewable and Appropriate Energy Laboratory's (RAEL) Internet site. The Publications Page is:
http://socrates.berkeley.edu/~rael/papers.html

Note 1: Federal R&D funding for renewable energy and energy efficiency technologies

Federal funding and leadership for renewable energy and energy efficiency projects has resulted in a small number of notable successes, such as the Energy Star and Green Lights Programs that have now been emulated in a number of countries. Despite these achievements, funding in this area has been both scant and so uneven that private sector involvement has been actually discouraged. A combination of a federal program for steadily increasing funding and active political leadership would transform the clean energy sector from a good idea to a pillar of the new economy. In particular, promising technologies such as fuel cells deserve special attention. Fuel cell development is attracting significant public and private funding and offers the promise of being a keystone technology for the ultimate transition from natural gas, petroleum, and coal energy to a renewable and hydrogen based energy economy.


President's Committee of Advisors on Science and Technology (PCAST) (1997) Federal Energy Research and Development for the Challenges of the Twenty-First Century (Washington, D.C.: Energy Research and Development Panel, President's Committee of Advisors on Science and Technology), November.

A second, and related issue is the structure of the Department of Energy itself. We have hindered, even crippled, the ability of the Department of Energy to investigate, promote and champion innovation in the energy sector by focusing much of its activities on the clean-up of the legacy of nuclear energy research and waste. While this is an important mission, it dominates the resources of the Department of Energy and prevents the focus from moving to current and future energy needs and opportunities. A separation of these functions is in order.

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Note 2: Efficiency standards for residential and commercial water heating and space heating and cooling, and motors and appliances.

A confluence of technical advances and economic and policy mechanisms now exists that could be utilized to dramatically reduce domestic, commercial and industrial energy needs. Federal leadership and partnership programs with state and regional organizations could produce dramatic improvements and cost reductions.


Note 3: A federal Renewable Portfolio Standard

All federal RPS proposals should use tradable renewable energy credits for compliance. Renewable credit trading is analogous to the sulfur allowance trading system established in the Clean Air Act. Like emissions trading, it is designed to be administratively simple and to increase flexibility and decrease the cost of compliance with the standard. Electricity suppliers can generate renewable electricity themselves, purchase renewable electricity and credits from generators, or buy credits in a secondary trading market.

The RPS is the surest mechanism for securing the public benefits of renewables and for reducing their cost to enable them to become more competitive. It is a market mechanism, setting a uniform standard and allowing companies to determine the best way to meet it. The RPS will reduce renewable energy costs by:

- Providing a revenue stream that will enable manufacturers and developers to obtain reasonable cost financing and make investments in expanding capacity to meet an expanding renewable energy market.
- Allowing economies of scale in manufacturing, installation, operation and maintenance of renewable energy facilities.
- Promoting vigorous competition among renewable energy developers and technologies to meet the standard at the lowest cost.
- Inducing development of renewables in the regions of the country where they are the most cost-effective, while avoiding expensive long-distance transmission, by allowing national renewable energy credit trading.
- Reducing transaction costs, by enabling suppliers to buy credits and avoid having to negotiate many small contracts with individual renewable energy projects.


Note 4: Federal standards for net metering

Net metering eliminates the administrative expense of installing, reading, and billing for an additional meter to measure generation separately from consumption. During surplus generation...
periods, the single meter spins backwards, so that the customer is billed only for the net amount of electricity consumed during a billing period. By facilitating small-scale generation by customers, net metering will help reduce loads on central generation, transmission and distribution, enhancing reliability as well as fuel diversity.


Note 5: Improved federal standards for vehicle fuel economy

After five years of Congressional bans, studies on the potential for increases in CAFE standards to cost-effectively reduce petroleum demand are now underway by the Department of Transportation and the National Academy of Sciences. These studies, with results due in July 2001, will help to suggest optimal levels of increased standards, given the costs and benefits of higher fuel economy, as well as phase-in schedules that will protect the competitive interests of domestic automakers. The issue of raising CAFE standards is becoming increasingly relevant with progress in the PAVV program, and as several automakers are preparing to introduce high-efficiency fuel cell vehicles beginning as soon as 2003-2004.


Note 6: Climate change and the need for federal leadership

The U.S. can reduce greenhouse gas (GHG) emissions while improving our economic efficiency, creating jobs and saving consumers money, maintaining our technological leadership, and achieving other environmental benefits. The options presented in this letter not only represent a responsible energy strategy, but can also simultaneously address the need to reduce U.S. GHG emissions. In particular, they would support a range of strategies to reduce power plant emissions, which account for a substantial percentage of total U.S. emissions of greenhouse gases, 29 percent in 1998. These include switching from our current reliance on high-carbon fossil fuels, particularly coal and oil, to renewable fuel sources, which have zero carbon emissions, and lower-carbon natural gas; and increasing the efficiency of electricity generation and use.

We strongly support the recent initiatives in Congress, for which the current Administration has indicated it's backing, to reduce pollutant emissions from electricity generation. In the 106th Congress Senator Jeffords and Senator Lieberman introduced, S.1369, the Clean Energy Act of
1999. This legislation contained provisions that addressed the environmental damage and competitive distortions created by the patchwork of unequal and inadequate standards that currently apply to electric power plants nationwide. The bill put a national cap on emissions from all power plants of nitrogen oxides, sulfur oxides, mercury, and carbon dioxide. The reductions in carbon dioxide would have brought emissions levels back to 1990 levels by 2005, the same level implied by the non-binding targets of the Rio Treaty of 1992, as ratified by the U.S. Senate. Legislation that controls the four major power plant pollutants in an integrated package will help reduce uncertainties for electric generators and will be less costly than separate programs for each pollutant. Integrated control encourages system-wide efficiency improvements and increased utilization of cleaner fuels. And while voluntary action by American companies is an attractive option to consider, in the last ten years voluntary actions have failed to reduce carbon dioxide emissions in the U.S. Instead, emissions have increased by 15 percent since 1990 and continue to increase.


