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## STRATEGIC ENERGY POLICY: CHALLENGES FOR THE 21ST CENTURY

As the 21st century opens, the energy sector is in critical condition. A crisis could erupt at any time from any number of factors, from an accident on the Alaskan pipeline to a revolution in a major oil-producing country. It would inevitably affect every country in today's globalized world. Oil is still readily available on international markets, but prices have doubled from levels that helped spur rapid economic growth through much of the 1990s. And with spare capacity scarce and Middle East tensions high, chances are greater than at any point in two decades of an oil supply disruption that would even more severely test the United States' security and prosperity.

Worse still, the precarious oil market situation comes against the backdrop of severe energy infrastructure constraints across the U.S. from the wellhead to the burner tip. These constraints are raising domestic energy costs and prompting a public outcry, highlighting the fact that an energy crisis need not arise abruptly but can emerge through slower contagions.

Electricity outages already have our most populous state in a vise and are threatening to spread from California to other parts of the country. Natural gas is available to heat homes and run power plants in some parts of the U.S., but only because prices soared over the winter to many times previous historic peaks. Gas markets dealt successfully with a supply shortage, but only at the cost of driving a few lower-priority industrial users to close plants and lay off workers, and many to desert gas for more polluting fuels. If economic growth continues, sporadic price spikes and periodic supply shortages could become widespread recurring events.

While the origins of a future crisis are hard to predict, it is clear that energy disruptions could have a potentially enormous impact on the U.S. and world economy, and would affect U.S. national security and foreign policy in dramatic ways. How the U.S. and indeed the rest of the world got into this difficulty is a long and complicated story. But one of the fundamental reasons is unambiguous—the U.S. has not had a comprehensive, integrated strategic energy policy for decades. As a result, today's situation arose by stealth, as years of rapid growth crashed into the physical supply barricades that were erected by decades of under-investment in energy infrastructure.

Ultimate resource levels are not a major factor in the tightening of U.S. energy markets. Instead, the problem is one of developing such resources and other fuels and getting them to the consumer. U.S. investment aimed at accomplishing this failed to keep pace with rising demand in part because energy industry profits were dismal through much of the 1990s, hitting bottom during the oil price collapse at the decade's end. The situation was exacerbated because low returns coincided with tightening environmental restrictions and an uneven regulatory process, especially in the electricity sector. No new oil refineries are likely to be built in the U.S. due to the high costs of environmental compliance and historically low returns on investment. Nuclear power faces other obstacles, ones related less to environment and more to safety and, to a certain extent, nonproliferation. Over the past twenty years, no new nuclear plants have been added in the U.S., reflecting the social impact of the major accidents at Three Mile Island and Chernobyl.

Beyond nuclear power, environmental concerns in some states like California have also raised the bar for the siting of conventionally fueled electric power stations, discouraging new facility construction. In U.S. natural gas markets, low prices in the 1990s, adverse fis-

cal regulations, interstate disputes about pipeline rights of way, and restrictive land access have undermined growth in natural gas availability.

In the short term, the energy situation may well improve due to seasonal downturns in demand as well as economic slowdown in the U.S. But from a longer-term perspective, the difficult situation in energy markets may get worse before it gets better. Across much of the developing world, energy infrastructure is being severely tested by the expanding material needs of a growing middle class, especially in the high-growth, high-population economies of Asia. Inside the U.S., years of prosperity are also testing the country's ability to deliver secure, clean and reliable energy. This testing comes at a time when the petroleum industry has, for essentially commercial reasons in a deregulated marketplace, run down inventories, leaving little cushion across the board, from oil and gas stored above or below the ground, to drilling rigs, pipelines, and tankers.

The world appears to have entered a new energy era, one that is no longer concerned with working off and managing surplus capacities. Instead, the new era is focused on marshaling capital to develop adequate resources and infrastructure to meet rising demand for energy, in a manner that is consistent with environmental goals. In order to satisfy that demand, reliance on volatile Middle East oil resources could increase dramatically over the next two decades unless policies are put in place to promote oil development in other regions, to shift to alternative sources, or to rein in unbridled or wasteful consumption.

In practice, a hands-off U.S. policy toward energy markets has increasingly led to a dangerous complacency about energy supplies that has flagrantly ignored the importance of conservation and demand management. Markets have been relatively free to determine prices. Greater reliance on markets has enhanced efficiency and pushed resources toward those economic sectors that most require energy. However, energy sector deregulation and reliance on consumer preferences can only go so far, because they do not take into account critical "public goods" aspects of energy supply and environmental protection. This has proved especially true in the area of generating large inventories and spare capacities needed to smooth markets during sporadic dislocations. Now such sporadic dislocations have raised public awareness of energy problems and threaten public acceptance of market solutions despite their overall successes.

Tax policy was not utilized in the U.S.—as it was in Europe and Japan—to discourage use of hydrocarbons or to promote environmentally friendly fuels. Transportation's share of U.S. petroleum use has risen to over 66%, up from 52% in 1970, and could hit 70% by 2010 if new technologies are not put in place. According to the International Energy Agency, transportation use will represent 60% of the total increase in oil use worldwide by 2020. Improvements in automobile mileage standards could dramatically influence the growth rates in U.S. consumption, while keeping the automotive industry competitive.

At the same time it was ignoring demand management, U.S. policy allowed energy supply goals frequently to take a back seat to environmental considerations when it came to land management, emissions, and other policy requirements.

Concerns about the adverse environmental impacts of higher energy use prompted public authorities throughout the industrial world to tighten regulations. These measures could be implemented without fear of price consequences because energy supplies were ample. Now local, regional, and global environmental issues look likely to pose even more significant challenges to energy policy makers in developed and developing countries than they have over the past two decades. The lack of excess capacities of energy supplies and infrastructure will raise the costs of implementing tightened environmental specifications for quality of fuels or restrictions on construction on new infrastructure.

In foreign policy, where the U.S. has frequently stated its desire to see new acreage opened to oil and gas exploration, it has not backed up its words with active support of these goals. On the contrary, it has frequently used energy sanctions as an instrument of foreign policy, blocking targeted countries from trade or investment, while making energy goals secondary to other foreign policy objectives.

For the most part, U.S. oil policy has relied on maintenance of free access to Middle East Gulf oil and free access for Gulf exports to world markets, relying heavily on military preparedness. The U.S. has forged a special relationship with certain key Middle East exporters that had an expressed interest in stable oil prices and, we assumed, would adjust their oil output to keep prices at levels that would neither discourage global economic growth nor fuel inflation. Taking this depen-

dence a step further, the U.S. government has operated under the assumption that the national oil companies of these countries would make the investments needed to maintain enough surplus capacity to form a cushion against disruptions.

But recently, things have changed. These Gulf allies are finding their domestic and foreign policy interests increasingly at odds with America's strategic considerations. They have become less inclined to lower oil prices in exchange for security of markets, and evidence suggests that adequate investment is not being made in a timely enough manner to increase production capacity in line with growing global needs. The opening of new media outlets in the Middle East has also increased the likelihood that a linkage will emerge in the minds of citizens there between the U.S. alliance with Israel and cooperation on oil prices. Moreover, a trend toward anti-Americanism could affect regional leaders' abilities to cooperate with the U.S. in the energy area. The resulting tight markets have increased U.S. and global vulnerability to disruption and provided adversaries undue potential influence over the price of oil. Iraq has become a key "swing" producer, posing a difficult situation for the U.S. government.

In the past, energy crises have appeared simply to fade away over time. Sometimes, as in the late 1970s and early 1980s, recession solved the problem by radically reducing global energy demand. At other times, additional capital marshaled technological improvements, reduced costs, and created new efficiencies on both the supply and demand sides, fostering complacency among policy makers. Government attention to energy issues tends to fade as prices fall. That complacency could be justified so long as surplus capacities existed. But in a world of energy capacity constraints, complacency could shackle the American economy for years to come. If it does not respond strategically to the current energy situation, the U.S. risks perpetuating the unacceptable leverage of adversaries and leaving the country's economy vulnerable to disruptions and volatile energy prices.

For two decades, the United States has gone without a serious energy policy. In the past, such complacency about energy could be justified because world supplies appeared to be indefinitely ample. The "myth of plenty" was reinforced by the enormous gains that were made as market forces were allowed to work, regulations and controls were eliminated, and energy prices fell in real terms across the world. These gains, in turn, allowed U.S. leaders—both Republican and Democratic—to take a minimalist approach supported by the comfort of consensus politics that reflect an avoidance of strategic choices. From the perspective of this task force, there is no escaping the fact that we are reaching the beginning of an extensive period of sporadic supply shortages and periodic price hikes in the U.S. and in other parts of the world. This new situation requires a reevaluation of U.S. policy approaches.

The U.S. faces three policy paths. First, continue the easy approach of "muddling through" with marginal SPR management and complete free market solutions. Second, take a near-term, narrow approach by expanding supply to ensure cheap energy, while minimizing conflict with interest groups. Or, third, develop a comprehensive and balanced energy security policy with near-term actions and long-term initiatives addressing supply-side and demand-side policy instruments and diversification of energy supply resources that enable the U.S. to escape from a pattern of recurring energy crises.

It is the view of this task force that only by forging a comprehensive energy policy can the U.S. escape from a pattern of recurring energy crises. It is a tenet of the task force that a workable and comprehensive energy policy requires a balance of supply-side and demand-side policy instruments if it is to attract a practicable operating congressional majority in the United States. Such a policy would favor diversification of energy supply by fuel and by source.

The recommendations of this task force represent its best attempts to outline a more coherent and comprehensive outlook for long-term policy initiatives that also take into account immediate steps. Thus, the recommendations contained in this report should be considered as a whole. Outlined supply-side options require simultaneous pursuit of the demand-management instruments enumerated by the task force. Combining them provides a powerful mechanism for enhancing the energy security of American citizens.

A truly comprehensive policy may well provide the kind of balance and compromise that are consistent with much of America's political history. However, any comprehensive plan is likely to require confrontation with other policy objectives that have deep constituencies. In some measure, concessions will have to made that will impinge on certain local environmental goals, states rights, Middle East policy, economic sanctions policy,

policy toward Russia, and hemispheric and international trade policy. Making compromises could be politically painful and will require sustained leadership from the highest levels of government.

But the benefits will be quite real. The comprehensive approach could minimize the negative consequences of a disruption in any particular fuel and help shield the American consumer from the painful effects of the cyclicality of the energy business. It might allow us to reduce military spending down the road and to create export opportunities for American firms through the development of clean energy technologies. It might also allow us to experience sustained economic growth, but without perilous environmental consequences.

Implementing this reinvigorated energy policy will take time. Quick fixes can alleviate supply bottlenecks or conserve energy use, but the energy sector is capital intensive and, with few noteworthy exceptions, involves projects that can unfold only in a three- to five-year or even longer time horizon.

Energy issues need to be brought before the public to counter some widespread misconceptions. There are no easy, overnight, and politically attractive solutions to the country's or the world's infrastructure and supply problems. There is no existing technology that can quickly replace oil in the crucial transportation sector. There is no place at home or abroad where enough oil or gas can be developed fast enough to moderate prices in the next six to 12 months. There is no cost-free way to allow unrestricted energy use and simultaneously safeguard the environment. But neither is the world running out of energy resources.

The task force acknowledges that energy policy starts at home. But any attempt to reframe U.S. energy policy must take into account the fact that the energy sector has become extremely interdependent internationally. The United States cannot achieve energy independence without the emergence of new technologies that are not yet on the horizon. Increasing domestic supplies will therefore not necessarily reduce U.S. vulnerability to disruptions to any substantial extent, and artificial ceilings or targets for imports will contribute little to security and could create unwanted distortions. An oil shortfall anywhere in the world will produce an equal price rise in every country, irrespective of the level of national import dependence, as long as markets are allowed to clear without government interference.

The U.S. must face up to this energy interdependence squarely and pursue new paths to assure that neither its economy nor policies are excessively vulnerable to foreign influence. For the foreseeable future, the Gulf will remain the world's base-load supplier and least expensive source of oil to meet growing demand. The global nature of oil trade and pricing means that it matters little if Gulf oil flows to Asia or to the U.S. Middle East Gulf pricing and supply trends will affect energy costs around the globe regardless. If the U.S. wishes to change this reality, it must start now to deploy new energy technologies that will lessen this dependence in the long run.

*The Task Force determined ten broad findings.*

1. **The U.S. government has not for a long time adequately integrated the security, energy, technological, financial, and environmental policies that make up a comprehensive energy policy.** It has relied on overlapping commercial and political interests with key oil producing countries to meet the needs of its own and the international economy. A surplus in energy supplies over the past two decades convinced policymakers that other objectives could take precedence over energy security and that the costs of neglect would remain low. That period has ended. In today's tighter energy markets, the costs of leaving energy security unattended could become extremely high. These costs, and the means of reducing them, need to be evaluated in a more purposeful, strategic fashion.
2. **There are no overnight solutions to the energy supply and infrastructure bottlenecks facing the nation and the world.** Success will require long-term investments. It will also require the removal of failed, outmoded, or simply less important policies that interfere with the pursuit of energy security. Economic sanctions that limit energy investment and environmental policies that increase the costs or availability of energy sources require a fair-minded review. A few concrete short-term actions are available; but many of these clash with other policy objectives, which may need to be compromised or even scrapped.
3. **Continuous governmental review is needed of the trade-offs between energy security and other national goals.** The articulation of a coherent energy policy requires the integration of foreign, national security, and trade policy with numerous domestic

environmental, tax, and investment programs. Energy policy should play a significant role in diplomatic discourse, especially where bilateral relations with major powers are concerned.

4. **Environmental issues affecting energy policy require new approaches at home and abroad.** The American public cares as much as the citizens of other countries about such issues as greenhouse gasses and other atmospheric emissions, underground leakage of noxious substances, and other environmental dangers. Sensible energy policy must take this into account. But it is important that the public understands that enhanced environmental standards come at a price to the availability and cost of fuels. It is equally important that the public understands the environmental and public health consequences of unfettered energy consumption. The government should take a leadership role in fostering such understanding. Also, better coordination of fuels standards is needed, both inside the U.S. and with its trading partners.
5. **Energy infrastructure can be rebuilt and expanded rapidly only if the government actively facilitates private-sector decision making and investment.** The government should pave the way by removing unnecessary jurisdictional and other obstacles to construction and enlargement of pipelines, power plants, the electricity grid, and other infrastructure. It also needs to weigh the desirability of incentives to accelerate the development of spare infrastructure and the accumulation of inventories to alleviate supply disruptions.
6. **U.S. energy independence is not attainable. Policy must therefore focus on increasing the number of energy suppliers, the kinds of energy consumed, and the efficiency with which energy is used.** The effort should include renewable and nonconventional forms of energy, as well as conventional fuels, while recognizing that even a doubling of renewable fuel supplies by 2020 could result in these resources still having a lower share of the market. Oil supply-side policy should take into account the danger of relying on Middle East producers for all of the world's spare capacity without also bolstering strategic stockpiles and reviewing rules for their use.
7. **Persistently tight crude oil markets highlight the concentration of resources in the Middle East Gulf and the vulnerability of the global economy to domestic conditions in the key producer countries.** The Gulf nations have one major asset: their oil and gas reserves. They, like Russia, Mexico, Indonesia, Nigeria, Venezuela, and some other oil producing nations, depend heavily on hydrocarbons to support their citizens. If the current regimes in the Gulf cannot deliver a better standard of living for rapidly increasing populations, social upheaval could result, and anti-Western elements could gain power. Similar concerns exist with respect to some other producing countries outside the Gulf.
8. **Energy policy has underplayed energy efficiency and demand management measures for two decades.** It is clear that vigorous demand management could significantly lower the volume of energy required for economic growth. Demand curbs could apply to residential, commercial, and industrial uses, but they are likely to bring the greatest and fastest benefits in the core transportation sector.
9. **The instruments available to deal with energy supply disruptions are increasingly inadequate to the tasks they need to manage.** To date, the keystone to managing emergency supply disruptions has been the Strategic Petroleum Reserve. The International Energy Agency and its policies, including building of strategic reserves of crude oil and petroleum products and mechanisms to share available supplies in times of disruption, play an important role as well. But this program addresses yesterday's needs. IEA members' oil consumption has stagnated, while demand has grown rapidly in countries outside the IEA, causing the agency to lose the critical mass necessary for managing a future shortfall. The size and effectiveness of the 90-day cushion mandated by the IEA also needs to be reexamined, as does management of the SPR, particularly by bringing in modern financial tools to help build the reserve with minimal impact on government budgets. Finally, what constitutes an energy supply shortfall needs to be redefined in light of changes in the structure of the global oil market.
10. **The U.S. needs to articulate a new vision of how best to manage international energy interdependence, one that promotes market transparency and fair distribution of gains from increased trade and investment.** Fundamental information about market trends is often unavailable. Energy producers and consumers need to find ways to build common insti-

tutions. Unless the U.S. government provides leadership in modernizing market and investment structures, there is a clear danger that others will take the reins and develop institutions that run counter to U.S. interests.

## *Strategic Vision for the Future*

To ensure America's well-being and economic prosperity in this new era of energy constraints, the U.S. must have a strategic energy policy predicated on a clear vision of the requirements for energy security. This vision must reflect domestic economic and environmental considerations, as well as geopolitical trends and security imperatives.

**The task force developed a broad consensus on the following strategic goals for the nation's energy policy:**

1. Protecting and promoting long-term diversity of affordable energy supply for sustained global economic growth. Diversity refers both to the mix of energy sources and the geographic origin of that energy. The priorities established among fuels should take into account environmental objectives, fuel efficiency, and national security considerations.
2. Promoting energy end-use efficiency as a near term approach to meeting economic, security and environmental goals.
3. Providing adequate safeguards, both at home and abroad, against energy supply disruptions and against manipulation of markets by any party, state, or private interest.
4. Promoting market forces wherever and whenever possible, while acting to ensure order in case of market failures or severe shortfalls or accidents. Market failures can involve interference in trade flows by private or state-owned entities and actions by adversaries. They can also involve flaws in regulatory structures, including environmental regulations.
5. Creating a stable, competitive, and predictable investment climate to ensure that energy resources and infrastructure expand to meet the growing needs of the world's population in a manner that safeguards the environment, promotes consumer needs, and enables U.S. companies to operate on an even playing field.
6. Encouraging competition in the U.S. and abroad, both to the benefit of U.S. consumers and U.S. companies.
7. Ensuring that all citizens, and particularly less affluent Americans, have access to reliable and affordable basic heating fuels and electricity when markets fail to serve this critical function.

## *Recommendations*

1. **Deter and manage international supply shortfalls**
   a. Develop a diplomatic program ensuring GCC allies remain prepared and willing to maintain stable prices for global economic growth and also to fill any unexpected supply shortfalls in times of turmoil in the oil markets, whether created by accident or by the adverse political actions by any producing nation
   b. Prepare for contingencies and gain agreement on coordination in the IEA in efforts to deal with any removal of oil by adversary nations from international markets
   c. Minimize public conflicts with OPEC (Organization of Petroleum Exporting Countries) and other independent oil exporting countries but emphasize importance of market factors in setting prices
   d. While moving to diffuse tensions in the Arab-Israeli conflict through conflict resolution and negotiations, maintain energy and political issues in U.S.-MiddleEast relations on separate tracks
   e. Review Iraq policies to lower anti-Americanism in the Middle East and elsewhere; set the groundwork to eventually ease Iraqi oil field investment restrictions
2. **Remove bottlenecks and other obstacles to energy supply, both domestically and internationally**
   a. Streamline procedures for waiving product specifications
   b. Establish procedures to grant Jones Act waivers without adversely affecting U.S. ship owners or U.S. labor.
   c. Enact legislation for federal primacy over state regulations especially with respect to product specifications and pipeline right of way
   d. Enact legislation to facilitate regional solutions to energy challenges
   e. Investigate whether any changes in U.S. policy would rapidly facilitate higher Caspian Basin oil exports

3. **Take a fresh approach to building and maintaining national strategic and commercial crude oil and petroleum product inventories**
   a. Review the size and financing of the SPR
   b. Establish professional criteria for managing the SPR
   c. Establish clear policy for use of the SPR
   d. Review tax, accounting, and other factors affecting industry's incentives to hold petroleum product and natural gas inventories with the intent of enhancing inventories before seasonal demand and neutralizing any adverse impact of current rules
   e. Encourage states to review minimum inventory for fuel switching where feasible and also fiscal incentives to industry to build inventories in advance of seasonal demand increases
4. **Develop mechanisms for a new national approach to energy policy**
   a. Create an appropriate interagency process to articulate and promote energy security policy and integrate energy policy with overall economic, environmental and foreign policy
   b. Review and streamline the allocation of authorities within the federal government, especially in areas of land management and energy
   c. Convene a national energy security summit to help develop a national consensus on energy policy objectives and means
   d. Develop a strategic communications plan on energy security policy in order to educate the public on the difficulties of achieving short-term, unilateral solutions to the nation's energy dilemmas

## *Long-Term Policy Initiatives*

1. **Review international approaches to build, maintain, and use strategic and commercial crude oil and petroleum product inventories**
   a. Enhance and modernize IEA strategic stockpile policies in light of the changed international market, taking into account situations that technically fall short of a supply disruption as well as different regulatory authorities among IEA members
   b. Encourage key non-IEA countries (e.g., China, India, Brazil) countries to develop strategic stocks
   c. Review IEA membership, taking into account the desirability of creating a new class of associated members who could be encouraged to hold minimum stocks and also benefit from direct participation in other IEA activities
2. **Accelerate demand-management efforts at home and internationally**
   a. Take a pro-active government position on demand management
   b. Use federal procurement authority to promote use of alternative fuels and develop programs to introduce new efficiency technologies into federal buildings and nascent transportation technologies into government vehicle fleets
   c. Use federal procurement authority to achieve other demand-management goals
   d. Review and establish new and stricter CAFE mileage standards, especially for light trucks
   e. Actively promote the development of energy efficient technologies, including fuel-efficient engine and vehicle technologies
3. **Maximize efforts to develop every clean source of domestic fuel supply**
   a. Oil and natural gas
      1.) Accelerate completion of the U.S. oil and natural gas reserve inventory, as mandated by Congress, highlighting restrictions on resource development. Such an inventory needs to be completed soon and well before any plan is adopted to develop particular domestic resources
      2.) Undertake an accelerated and complete review of tax and fiscal policy as they impact U.S. oil and gas development taking into account the competitive position of the U.S. fiscal regime internationally, in order to attract more capital to the sector
   b. Electricity
      1.) Create an appropriate, comprehensive statutory framework for electricity restructuring and for reestablishing a capacity cushion for the nation's power supplies. A new framework needs to overcome the adverse impacts of today's highly fragmented regime, which has reduced the reliability of power grid and impeded

investment in new generation and transmission capacity

2.) Work expeditiously to improve statutory framework for approvals of the siting of power generation plants, and transmission, and distribution infrastructure

3.) Evaluate the need for incentives to stimulate the introduction of new technologies into the power marketplace including distributed generation and co-generation

4.) Work with state regulators and regional authorities to let companies offer long term contracts for electric power and to encourage them to hedge price risks

5.) Encourage the development of regional power-capacity cushions

6.) Recognize that many of the polices required to meet increased demand are power-source specific

7.) Assure that regulations protect open access to electricity generated by new nontraditional fuel sources such as cogeneration

c. Natural Gas

1.) Apply strong leadership to develop a coherent, comprehensive strategy promoting efficient development and use of the nation's natural gas resources

2.) Endorse the construction of natural gas pipelines from the Arctic to the lower 48 states and work bilaterally with Canada and the U.S. state of Alaska to address important issues that need to be resolved

3.) Assure regulatory authorities work together to bring about natural gas market efficiencies, including the provision of open access to markets by producers and to supply by end users, and that allow delivery costs to be determined transparently by market forces so that commodity values are transparent to both producers and consumers

4.) Invest in—or stimulate and encourage private sector investment in—research and development of technologies that focus on safe and cost effective ultradeep water production, smaller drilling footprints, and increased production from nonconventional sources, including methane hydrates

5.) Encourage natural gas exploration and production through a series of technology targeted tax incentives that also encourage use of advanced, environmentally sensitive technologies and that provide counter cyclical support for exploration and production

6.) Initiate a mitigation forum process to evaluate infrastructure needs and reduce delays in new pipeline and storage facility siting

7.) Consider providing incentives to state and local governments that agree to expedite natural gas infrastructure siting

8.) Invest in—or stimulate and encourage private sector investment in—technologies ensuring pipeline infrastructure integrity, reliability, flexibility, and safety

9.) Foster development of advanced storage technologies to increase regional storage capacity and serve peak power and distributed generation markets

10.) Evaluate the potential of imported LNG as a major additional source of base load as well as incremental supply and in the process accelerate environmental reviews required for siting as well as accommodate the commercial logistics and other user needs associated with facilities built or operated by LNG suppliers

d. Coal: Given the nation's abundance in coal resources, it is critical to foster the development of clean coal technologies to promote coal use in power generation while mitigating the impacts of coal combustion to meet local, regional, and global environmental challenges.

e. Nuclear

1.) Support the Nuclear Regulatory Commission to extend plant life where possible

2.) Constructively work with stakeholders to resolve nuclear power plant spent fuel (and high-levels defense waste) disposition within the next few years since this is critical to preserving viable nuclear options for the nation

3.) Work to improve the investment climate for new nuclear power plant construction through the streamlining of NCR licensing procedures and by resolving uncertainties surrounding electricity deregulation and restructuring

4.) Work with Congress to sustain the front-end domestic nuclear fuel cycle through the next half-decade

5.) Work with Western Europe and Japan to shape a future nuclear fuel cycle that would garner shared support

6.) Work with the education system to reinvigorate training in nuclear science and technology

4. **Augment diplomatic initiatives to spur non-OPEC production increases**
   a. Expand oil and gas forum programs
   b. Investigate ways to facilitate increased investment in Mexico's oil and gas sectors
   c. Encourage reforms in Russia's energy sector
   d. Improve access to information and transparency on comparative oil and gas fiscal commercial regimes
5. **Initiate diplomatic efforts to encourage the reopening of countries that have nationalized and monopolized their upstream sectors**
6. **Review sanctions policies to identify ways to reduce the negative impact on energy supplies, while accomplishing the objectives for which the sanctions were imposed**
7. **Develop a credible international stance on global warming and other environmental issues**
   a. Conduct a thorough review of the Kyoto Accords and recommend ways for the U.S. to revive international discussions on climate change and also execute bilateral agreements to promote environmental safeguards
   b. Investigate new ways to promote efficiency and clean energy technologies—including clean coal, expanded natural gas use, and automobile mileage and emission standards—for use in large consuming countries in Asia and Latin America, especially China and India
   c. Develop a strategy to coordinate with the European Union and ASEAN on refined petroleum product specifications through multilateral dialogue and bilateral agreements
8. **Support efforts to develop and disseminate accurate and timely information about the fundamentals of energy market supply and demand.** Recognizing that transparency is an important element in maintaining orderly markets generally and in times of emergency or unexpected disruption in particular, the administration should provide a higher budget for the Department of Energy's Energy Information Agency.
9. **Lay the foundation for new global energy institutions**
   a. Embrace the spirit of the "producer-consumer" dialogue, but not the framework with which it has been associated
   b. With U.S. leadership, foster broad international cooperation on a host of issues including (1) sharing information on oil market trends and the basics on evolving environmental standards on petroleum products and emissions, (2) promoting mechanisms for attracting investment capital, and (3) coordinating information on investments in refinery upgrading and in new demand, which would define the requirements for new grassroots plants
   c. Build global energy institutions in three ways

      1.) Consider using the **European Energy Charter** as the basis of an energy institution that the United States should want to adopt on a global basis

      2.) Build on overlapping interests and relations between the world's largest oil exporter - **Saudi Arabia** - and the largest energy consuming country - the U.S.

      3.) Explore a mechanism promoting a **North American or Western Hemispheric energy agreement**

   d. Form the core of a future multilateral agreement through bilateral or regional arrangements based on improving markets, ensuring energy security, and guaranteeing investments and trade on a mutual, reciprocal and nondiscriminatory basis

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