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Energy is the Albatross of U.S. National Security, Lugar says

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U.S. Senate Foreign Relations Committee Chairman Dick Lugar addressed the Brookings Institution today on “U.S. Energy Security – A New Realism.”

In this speech, Lugar says: “. . . **energy is the albatross of U.S. national security.**”

“. . . there is not a full appreciation of our economic vulnerability or the competition that is already occurring throughout the world.”

“. . . oil will become an even stronger magnet for conflict and threats of military action, than it already is.”

“Geology and politics have created petro-superpowers that nearly monopolize the world’s oil supply. According to PFC Energy, foreign governments control up to 77 percent of the world’s oil reserves through their national oil companies. These governments set prices through their investment and production decisions, and they have wide latitude to shut off the taps for political reasons.”

“Americans paid 17 percent more for energy in 2005 than in the previous year. That increase accounted for 40 percent of the rise in the consumer price index. Last November, we spent more than \$24 billion on oil imports, accounting for more than a third of our trade deficit.”

Lugar’s new proposals in this speech include:

“The ‘Energy Diplomacy and Security Act’ (to be introduced this week) calls upon the Federal Government to expand international cooperation on energy issues. This

bill will enhance international preparedness for major disruptions in oil supplies. A particular priority is to offer a formal coordination agreement with China and India as they develop strategic petroleum reserves. This will help draw them into the international system, providing supply reassurance, and thereby reducing potential for conflict.

“The bill would also stimulate regional partnerships in the Western Hemisphere. Most of our oil and virtually all of our gas imports come from this Hemisphere. The bill creates a Western Hemisphere Energy Forum modeled on the APEC energy working group. This would provide a badly-needed mechanism for hemispheric energy cooperation and consultation.”

“Our policies should be targeted to replace hydrocarbons with carbohydrates. Obviously this is not a short-term proposition, but we can off-set a significant portion of demand for oil by giving American consumers a real choice of automotive fuel. We must end oil's near monopoly on the transportation sector, which accounts for 60 percent of American oil consumption.”

“It is time for the oil companies to make E85 available to the consumer. If these companies do not take advantage of the incentives Congress has provided, I would be in favor of legislation mandating that they install E85 pumps in appropriate markets.”

“. . . Senator Obama and I will soon introduce a new bill that will promote other means to move these fuels into additional markets and make them more widely available for consumers. Among many provisions, the Obama-Lugar bill would create an alternative diesel standard comparable to the renewable fuels standard that I helped put into the 2005 energy bill. It would also provide new incentives for the production of flexible fuel vehicles. We believe that U.S. national security will be served by more robust coordination of all the elements that contribute to energy security. Consequently, the bill also would establish the post of Director of Energy Security, who would answer to the President.”

Lugar also calls for getting immediate federal loan guarantees for the first American cellulosic ethanol plant, which is planned for construction in Idaho. He also calls for a \$35 per barrel of oil price floor. He discusses details of the Bayh-Leiberman bill, which he is a co-sponsor.

Full text of the speech is below.

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It is a privilege to deliver the inaugural speech for the Brookings Institution's 90th Anniversary Leadership Forum series. I have had the opportunity to come here to share my thoughts on a number of national security issues over the years, and your reception has always been generous. I appreciate very much receiving the invitation to speak from

my good friend, Strobe Talbot, who has been a source of sound counsel for many years and who continues to provide outstanding national and international leadership.

Last August, I represented President Bush on a diplomatic mission to North Africa. The President asked me to go to Algeria and Morocco to facilitate the release of the longest-held prisoners of war in the world – 404 Moroccan soldiers, some of whom had been held since the 1970s by the Polisario Front operating out of Algeria. American diplomats had discussed their potential release, and General Jim Jones, Supreme Allied Commander Europe, had offered to transport the POWs home to their families in Morocco. After this humanitarian mission had been fulfilled, I had the opportunity, with the Administration's blessing, to continue on to Libya for meetings with Libyan officials, including Muammar Qaddafi.

While staying overnight in the Corinthia Hotel in Tripoli, overlooking the Mediterranean, I came face to face with a microcosm of the new reality of global economic life. It was impossible to walk around the hotel without meeting someone who was hoping to tap into Libya's oil reserves. The hotel was populated with representatives from China, India, and Western oil companies who were in Libya to stake out drilling or refining options for every pool of oil that the government might make available. **The world had come to the Corinthia Hotel to compete for the energy opportunities that were expected to develop with Libya's hopeful return to the international mainstream.**

I relate this anecdote to underscore how rapidly the world is changing due to the expansion of energy demand. These conclaves of modern day oil prospectors can be found wherever there are proven energy supplies and a government willing to bargain. Indeed, my delegation also saw evidence of this in natural gas-rich Algeria. **The Chinese and Indians, with one third of the world's people between them, know that their economic future is directly tied to finding sufficient energy resources to sustain their rapid economic growth. They are negotiating with anyone willing to sell them an energy lifeline.**

The Shifting Balance of Realism

The gasoline price spikes following the Katrina and Rita hurricanes underscored for Americans the tenuousness of short-term energy supplies. But, as yet, **there is not a full appreciation of our economic vulnerability or the competition that is already occurring throughout the world.**

In a remarkable moment during the State of the Union Address, President Bush caught the attention of the nation with five words: "America is addicted to oil." Those five words probably generated more media commentary than all the rest of his remarks from that evening combined. I had an opportunity soon after the speech to talk to the President about energy, and he admitted that he had not anticipated the impact of that statement or that some commentators would find it incongruous. I believe he is genuine in wanting to devote more focus to pursuing alternative energy sources. But his Texas roots, his administration's high-profile advocacy of opening up the Arctic National Wildlife Refuge

to drilling, and other associations with the oil industry have created long-standing public impressions that the President is an oil-man who believes in the oil economy.

Though not hostile to alternative energy sources, the Bush administration clearly downplayed their significance during the early part of his presidency. Vice President Cheney, who oversaw Bush Administration energy policy, stated on April 30, 2001, “Years down the road, alternative fuels may become a great deal more plentiful than they are today. But we are not yet in any position to stake our economy and our way of life on that possibility. For now, we must take the facts as they are. Whatever our hopes for developing alternative sources and for conserving energy - and that's part of our plan - the reality is that fossil fuels provide virtually 100 percent of our transportation needs and an overwhelming share of our electricity requirements. For years down the road, this will continue to be true.”

For decades, the energy debate in this country has pitted so-called pro-oil realists against idealistic advocates of alternative energy. The pro-oil commentators have attempted to discredit alternatives by saying they make up a tiny share of energy consumed and that dependence on oil is a choice of the marketplace. They assert that our government can and should do little to change this. They have implied that those who have bemoaned oil dependency do not understand that every energy alternative comes with its own problems and limitations. Lee Raymond, the former CEO of Exxon offered an example of this line of reasoning in 2005: “There are many alternative forms of energy that people talk about that may be interesting. But they are not consequential on the scale that will be needed, and they may never have a significant impact on the energy balance. To the extent that people focus too much on that — for example, on solar or wind...— what they are doing is diverting attention from the real issues. And 25 years from now, even with double-digit growth rates, they will still be less than 1 percent of the energy supplied to meet worldwide demand. I am more interested in staying focused on the 99 percent than the 1 percent.”

Indeed, advocates of alternative energy must resist the rhetorical temptations to suggest that energy problems are easily solved. They are not. Relieving our dependence on oil in any meaningful way is going to take much greater investments of time, money, and political will. There is no silver bullet solution. But the difficulty of solving the problem does not make it any less necessary. The President’s State of the Union address indicates that he understands this.

Whether or not one classifies America’s oil dependence as an addiction, the bottom line is that with less than 5 percent of the world's population, the United States consumes 25 percent of its oil. If oil prices remain at \$60 a barrel through 2006, we will spend about \$320 billion on oil imports this year. Most of the world’s oil is concentrated in places that are either hostile to American interests or vulnerable to political upheaval and terrorism. And demand for oil will increase far more rapidly than we expected just a few years ago. Within 25 years, the world will need 50 percent more energy than it does now.

With these basics in mind, my message is that the balance of realism has passed from those who argue on behalf of oil and a laissez faire energy policy that relies on market evolution, to those who recognize that in the absence of a major reorientation in the way we get our energy, life in America is going to be much more difficult in the coming decades. No one who cares about U.S. foreign policy, national security, and long-term economic growth can afford to ignore what is happening in Iran, Russia, Venezuela, or in the lobby of the Corinthia Hotel in Tripoli. No one who is honestly assessing the decline of American leverage around the world due to our energy dependence can fail to see that energy is the albatross of U.S. national security.

We have entered a different energy era that requires a much different response than in past decades. What is needed is an urgent national campaign led by a succession of Presidents and Congresses who will ensure that American ingenuity and resources are fully committed to this problem.

We could take our time if this were merely a matter of accomplishing an industrial conversion to more cost effective technologies. Unfortunately, U.S. dependence on fossil fuels and their growing scarcity worldwide have already created conditions that are threatening our security and prosperity and undermining international stability. In the absence of revolutionary changes in energy policy, we are risking multiple disasters for our country that will constrain living standards, undermine our foreign policy goals, and leave us highly vulnerable to the machinations of rogue states.

The majority of oil and natural gas in the world is not controlled by those who respect market forces. **Geology and politics have created petro-superpowers that nearly monopolize the world's oil supply. According to PFC Energy, foreign governments control up to 77 percent of the world's oil reserves through their national oil companies. These governments set prices through their investment and production decisions, and they have wide latitude to shut off the taps for political reasons.**

I am not suggesting that markets won't eventually come into play to move America away from its oil dependence. Eventually, because of scarcity, terrorist attacks, market shocks, and foreign manipulation, the high price of oil will lead to enormous investment in and political support for alternatives. Given enough time, overcoming oil dependence and imbalances is well within the scope of human, and indeed American, ingenuity. The problem is that such investment cannot happen overnight, and even if it did, it will take years or even decades to build supporting infrastructure and change behavior. **In other words, by the time a sustained energy crisis fully motivates the market, we are likely to be well past the point where we can save ourselves. Our motivation will come too late and the resulting investment will come too slowly to prevent the severe economic and security consequences of our oil dependence. This is the very essence of a problem requiring government action.**

The first step is to admit how grave the problem is. Hopefully, we will look back on President Bush's declaration that America is "addicted to oil" as a seminal moment in

American history, when a U.S president said something contrary to expectations and thereby stimulated change. **Like President Nixon using his anti-communist credentials to open up China** or President Johnson using his Southern roots to help pave the way for the Civil Rights Act, **President Bush's standing as an oil man would lend special power to his advocacy, if he chose to initiate an all-out campaign for renewable energy sources.**

Six Threats

As a national security problem, energy is unique in that the risks we face from this single condition are diverse and are intensifying simultaneously. In fact, our energy dependence creates at least six different threats that could directly or indirectly undermine American security and prosperity. Each of these threats could be the subject of its own speech, but today, I will provide an abbreviated review.

First, as we have seen, oil supplies are vulnerable to natural disasters, wars, and terrorist attacks that can disrupt the lifeblood of the international economy. The entire nation felt the spike in prices caused by Hurricanes Katrina and Rita last year. But these shocks, which helped send the price of oil to \$70 a barrel, were minor compared to what would occur if major oil processing facilities in Saudi Arabia were sabotaged. In late February, terrorists attempted such an attack. They penetrated the outer defenses of Saudi Arabia's largest oil processing facility with car bombs before being repulsed. A successful terrorist attack – either through conventional ground assaults, suicide attacks with hijacked aircraft, terrorist inspired internal sabotage, or other means – would be devastating to the world economy. Al-Qaeda and other terrorist organizations have openly declared their intent to attack oil facilities to inflict pain on Western economies.

Recently, we have also seen the shutdown of a fifth of Nigeria's production by militants, and Iraq's continuing struggle to expand its oil production capacity amidst terrorist attacks.

The vulnerability of oil supplies is not a new concern. But the lack of spare oil production capacity is new. As recently as four years ago, spare production capacity exceeded world oil consumption by about ten percent. As world demand for oil has rapidly increased in the last few years, spare capacity has declined to less than two percent. Thus, any major disruption of oil creates scarcity that will drive prices up.

These circumstances require massive expenditures to preserve our oil lifeline. One conservative estimate puts U.S. oil-dedicated military expenditures in the Middle East at \$50 billion year.

Second, over time, even if oil and natural gas supplies are not disrupted in dramatic ways that produce local or global economic shocks, worldwide reserves are nevertheless diminishing. This is occurring within the context of explosive economic growth in China, India, Brazil, and many other nations. The demand for energy from these industrializing giants is creating unprecedented competition for oil and natural gas.

Americans paid 17 percent more for energy in 2005 than in the previous year. That increase accounted for 40 percent of the rise in the consumer price index. Last November, we spent more than \$24 billion on oil imports, accounting for more than a third of our trade deficit.

To meet world oil demand, the International Energy Agency estimates a need for \$17 trillion in investment, with the bulk going to the Middle East . But political and economic conditions may not let this investment happen. Even if some investment does occur and reserves prove to be much larger than anticipated, there is no guarantee that hostile governments will either choose to develop new capacity or make any new oil available to the United States.

In the decades to come, price will not be the only issue. We will face the prospect that the world's supply of oil may not be abundant and accessible enough to support continued economic growth in both the industrialized West and in large rapidly growing economies. **As we approach the point where the world's oil-hungry economies are competing for insufficient supplies of energy, oil will become an even stronger magnet for conflict and threats of military action, than it already is.**

Third, the use of energy as an overt weapon by producing nations is not a theoretical threat of the future; it is happening now. Oil and natural gas are the currency through which energy-rich countries leverage their interests against import dependent nations such as ours. Iran has repeatedly threatened to cut off oil exports to selected nations if economic sanctions are imposed against it. Similarly Hugo Chavez in Venezuela has issued threats of an oil export embargo against the United States.

In January, Ukrainians were confronted by a Russian threat to cut off natural gas exports in mid-winter if Ukraine did not submit to a four-fold price increase. Russia took action to deny some natural gas to Ukraine. The dispute led to sharp drops in gas supplies reaching European countries that depend on natural gas moving through Ukrainian pipelines from Russia. Russia charged that Ukraine was diverting gas intended for Austria, Italy, France, Hungary and other European nations. Eventually, the confrontation was resolved with a near doubling of the price of natural gas sold by Russia to Ukraine. In contrast, Russia did not inflict such a price increase on Belarus, considered by Moscow to be a good partner, compared to the pro-Western Ukrainian government. The episode underscored the vulnerability of consumer nations to their energy suppliers.

We are used to thinking in terms of conventional warfare between nations, but energy is becoming the weapon of choice for those who possess it. It may seem to be a less lethal weapon than military forces, but a natural gas shutdown to Ukraine in the middle of winter could cause death and economic loss on the scale of a military attack. Moreover, in such circumstances, nations would become desperate, increasing the chances of armed conflict and terrorism. The use of energy as a weapon might require NATO to review what alliance obligations would be in such cases.

Fourth, even when energy is not used overtly as a weapon, energy imbalances are allowing regimes in countries that are rich in oil and natural gas to avoid democratic reforms and insulate themselves from international pressure and the aspirations of their own people.

We are seeing Iran and Venezuela cultivate energy relationships with important nations that are in a position to block economic sanctions. For decades, we have watched Saudi Arabia and other Gulf states use oil wealth to create domestic conditions that prevent movement toward democracy. In Russia and Nigeria, energy assets have offered opportunities for corruption. In many oil rich nations, oil wealth has done little for the people, while ensuring less reform, less democracy, fewer free market activities, and more enrichment of elites.

Beyond the internal costs to these nations, we should recognize that we are transferring hundreds of billions of dollars each year to some of the least accountable regimes in the world. Some are using this money to invest abroad in terrorism, instability, or demagogic appeals to populism.

At a time when the international community is attempting to persuade Iran to live up to its non-proliferation obligations, our economic leverage on that country has declined due to its burgeoning oil revenues. If one tracks the arc of Iran's behavior over the last decade, its suppression of dissent, its support for terrorists, and its conflict with the West have increased in conjunction with its oil revenues, which soared by 30 percent in 2005.

Sometimes observers comfort themselves with the thought that most U.S. imports come from friendly nations such as Canada and Mexico, rather than from Iran or other problematic countries. But oil is a globally priced commodity. Even if our dollars are not going directly to Iran, this does not mean that our staggering consumption of oil is not contributing to the price paid to Iran by other consumers.

Fifth, the threat of climate change has been made worse by inefficient and unclean use of non-renewable energy. In the long run this could bring drought, famine, disease, and mass migration, all of which could lead to conflict and instability.

There are no unilateral solutions to climate change. I have urged the Bush Administration and my colleagues in Congress to return to a leadership role on the issue of climate change. I have advocated that the United States must be open to multi-lateral forums that attempt to achieve global solutions to the problem of greenhouse gases.

Our scientific understanding of climate change has advanced significantly. We have better computer models, more measurements and more evidence -- from the shrinking polar caps to expanding tropical disease zones for plants and humans -- that the problem is real and is caused by man-made emissions of greenhouse gases, including carbon dioxide from fossil fuels.

Sixth, our efforts to stem terrorist recruitment and prevent terrorist cells and training grounds in the developing world are being undercut by the high costs of energy. The economic impact of high oil prices is far more burdensome in developing countries than in the developed world. Generally, developing countries are more dependent on imported oil, their industries are more energy intensive, and they use energy less efficiently.

The United Nations Conference on Trade and Development estimates that non-OPEC developing nations spend 3.5 percent of their GDP or more on imported oil -- roughly twice the percentage paid in the main OECD countries. World Bank research shows that a sustained oil-price increase of \$10 per barrel will reduce GDP by an average of 1.47 percent in countries with a per-capita income of less than \$300. Some of these countries would lose as much as 4 percent of GDP. This compares to an average loss of less than one half of one percent of GDP in OECD countries. Some nations, such as Nepal and the Democratic Republic of the Congo, would experience GDP losses from a sustained \$10 increase in the price of a barrel of oil that are twice the amount of foreign assistance that they receive from the United States. Even a nation like Ethiopia, which receives the substantial sum of \$134 million in U.S. assistance because it is a focus country of the President's AIDs initiative, would see almost all of this offset by a \$10 oil price increase.

Last week I chaired a Senate Foreign Relations Committee hearing on the nomination of Randy Tobias to be the new Administrator for USAID. In this capacity he would oversee a large share of our foreign assistance budget, which now exceeds \$20 billion per year. This budget is intended to meet our humanitarian goals, but its success is also directly linked to national security. But all of this effort and money, in essence, can be wiped out merely by an increase in the price of energy.

Without a diversification of energy supplies that emphasizes environmentally friendly energy sources that are abundant in most developing countries, the national incomes of energy poor nations will remain depressed, with negative consequences for stability, development, disease eradication, and terrorism.

Each of these six threats from energy dependence is becoming more acute as time passes. Any of them could be the source of catastrophe. **Any realistic American foreign policy must redeploy diplomatic, military, scientific, and economic resources toward solving the energy problem.**

The basic dilemma for U.S. energy policy is how can our government speed up the transition to alternative renewable energy sources so that we can prevent irreparable harm to our nation or the world associated with these threats? The realist must ask: how can we shape our energy future before it shapes us in disastrous ways?

Working Toward Energy Security

American energy policy to date has suffered from two fundamental flaws. First, we have let two decades of relatively cheap oil and natural gas deepen our dependence on imports.

An approach that focuses on research, while ignoring deployment of new fuels will not meet our national security challenge.

The second flaw is that we have lacked a truly comprehensive energy policy with energy security as a strategic goal. American energy policy has been focused on a narrow definition of energy security that strived to ensure sufficient supplies at affordable prices. This has translated into policies promoting diversification in supplies of oil and natural gas, with little emphasis on energy alternatives. A policy that relies on a finite resource concentrated in a few countries is doomed to failure. Our long-term security and prosperity require sufficient, affordable, clean, reliable, and sustainable energy.

A first component of energy security is to ensure sufficient supplies. Our energy intensity per unit of GDP has steadily decreased, but our energy consumption is still projected to increase by more than a third over the next twenty-five years. This demand scenario is not inevitable. Public policy can do more to promote efficiency while still growing the economy. Expanded programs to enhance energy efficiency in appliances, building construction, and industry are all necessary to keep our energy intensity declining.

One third of our projected energy growth is in oil, a majority of which we have to import. I have co-sponsored a bipartisan bill with Senators Bayh and Lieberman that would require federal agencies to implement a plan to reduce U.S. oil consumption by 10 million barrels a day by 2031. The legislation contains many provisions to enhance energy conservation -- from tire efficiency to reduced school bus idling to light-weight materials research.

Automakers have a central role to play in improving our oil efficiency. We are working to close the SUV CAFE standards loophole, and to get more hybrids and flex-fuel vehicles on the road. A fleet of hybrid, and future plug-in hybrids, that run on E85 could reduce our oil use by 10 million barrels a day. The bill I have co-sponsored removes the cap on the number of tax rebates for hybrid vehicles. It also fosters demand by requiring that 30 percent of the government auto fleet be hybrids and advanced diesels. With increased demand for fuel efficient cars, new manufacturing facilities will be built that provide jobs for Americans.

In partnership with the American auto industry, we should provide a set of incentives that give them the opportunity to regain their strength and save jobs through innovation. This bill offers a 35 percent tax credit for automakers to retool their factories so that they can make fuel efficient, advanced technology vehicles.

Affordability of energy supplies also remains a key goal for energy security. Crude oil still hovers around \$60 a barrel, and last October's price for natural gas was more than double what it had been in the previous year. These high energy prices increase inflation and inhibit future economic growth.

Elevated oil and natural gas prices do have the benefit of making alternative fuels more competitive. With the end of twenty years of low oil and gas prices, investment in

alternative fuels has surged. **As more is invested, innovation in technology and production will drive prices down further. That is why it is so important to get the first cellulosic ethanol facilities up and running. The President said in his State of the Union address that he wanted to make cellulosic ethanol “practical and competitive within six years.” In fact, one plant is ready to be built in Idaho, and many others could be built within the six-year time frame. I have asked the President to make sure that the loan guarantees that Congress authorized for cellulosic ethanol production are in place by this summer.**

As alternative fuels become more competitive, oil and gas producers have strong incentive to drop prices to kill the competition. Investors need to know that alternative energy initiatives will continue to be competitive. A revenue-neutral \$35 per barrel price floor on oil would provide the security investors need. At this price, alternative fuels like cellulosic ethanol, shale and tar sands oil, and Fischer-Tropsch diesel could still compete with regular gasoline. Many analysts say that expensive oil is here to stay, but most energy investors are hesitant to take on that risk. A modest price floor for oil that we may never reach would provide a major stimulation for energy alternatives.

Long-term energy security also requires the use of clean energy, a third component of energy security. As long as we continue to consume fuels that do not burn cleanly or cannot have their damaging gases sequestered, we will continue to pay environmental costs and will remain vulnerable to a climate change induced disaster.

The Congress must pass legislation establishing a cap and trade mechanism. A cap and trade system would provide regulatory certainty, reward innovation to improve energy efficiency, and provide strong market incentives for clean renewable fuels. Any such system should give credit for carbon sequestration in coal-fired plants and allow farmers and foresters to sell credits for the carbon they sequester.

I have introduced a resolution that calls for America to lead other nations to new agreements under the United Nations Framework Convention on Climate Change. Thanks to new technology, we can control many greenhouse gases with proactive, pro-growth solutions, not just draconian limitations on economic activity. Industry and government alike recognize that progress on climate change can go hand in hand with progress on energy security, air pollution, and technology development.

Even as we strive to reduce the prevalence of fossil fuel in our energy portfolio, pragmatism requires that we diversify to the greatest extent possible our sources of oil and natural gas. I have supported opening ANWR for exploration. While we continue to debate production there and on the outer continental shelf, we have to carefully consider both the security and economic benefits of more exploration, as well as the environmental costs.

We must also ensure that we are not wasting fossil fuel resources in end-use that could be fueled by other means. I am encouraged by DuPont’s commitment to replacing

petrochemicals with bio alternatives. This wise business choice leaves DuPont less vulnerable to price spikes than competitors who still rely exclusively on oil and gas.

With natural gas prices high, there is now a shift to coal-fired electrical generation. New plants should favor coal, which we have in abundance, over natural gas. I continue to vigorously support the deployment of clean coal technology with carbon sequestration.

We can also use coal to reduce our oil dependence. The Energy Bill included legislation I coauthored with Senator Obama authorizing \$85 million for federal research into the production of coal-based transportation fuels. One of the technologies that will be encouraged by this program, the Fischer-Tropsch process, yields a diesel fuel that is compatible with existing vehicle technology. It is superior to oil-derived fuel with respect to performance and emissions.

Another critical component of reliability is protection of the physical infrastructure and transit of our energy supplies. Terrorists have made clear their intentions to destroy refineries and pipelines worldwide. At home, in addition to power plants, ports, refineries, and platforms, we have 160,000 miles of oil pipelines. As the United States considers liquefied natural gas and nuclear facilities, we must be vigilant to the security implications.

While diversity in supplies at home and abroad is necessary for more reliable energy in the coming decades, diversification of sources for oil and gas is an outdated strategy that will never bring energy security. Reserves are too concentrated and infrastructure too vulnerable. Real diversity can only be achieved by an energy portfolio dominated by sustainable energy, the final component of energy security.

As we make policies to influence the composition of our future energy portfolio, we should strive to consume fewer hydrocarbons than we can produce domestically. This means more clean coal and renewable fuels of all types. I am encouraged that some states and municipalities are taking the initiative to increase their use of renewables. With Congressman Pete Visclosky, I am advocating a bill that will do that for Indiana.

Our policies should be targeted to replace hydrocarbons with carbohydrates. Obviously this is not a short-term proposition, but we can off-set a significant portion of demand for oil by giving American consumers a real choice of automotive fuel. We must end oil's near monopoly on the transportation sector, which accounts for 60 percent of American oil consumption.

I believe that biofuels, combined with hybrid and other technologies, can begin to move us away from our extreme dependence on oil in the next decade. Corn-based ethanol is already providing many Midwesterners with a lower-cost fuel option. Most of this is in a 10 percent ethanol mix, which is fully compatible with nearly all vehicles. I have recently called for my home state of Indiana to mandate that all gas stations in the state offer a 10 percent blend.

Cellulosic ethanol, which is made of more abundant and less expensive biomass, is poised for commercial take-off. I am pleased the President now supports the ethanol research that began under my legislation in 2000. I have long championed a renewable fuels standard, and we finally passed a 7.5 billion gallon ethanol mandate in the 2005 energy bill. The bill I am co-sponsoring with Senators Bayh and Lieberman will increase the proportion of ethanol from cellulose that will be in that mix.

As our domestic ethanol industry strengthens and demand grows, we will have to revisit the tariff we put on ethanol imports. We do not want to trade oil import dependency for biofuel import dependency, but trade in alternative energy also creates jobs, provides new markets for our advanced technology, and diversifies our own supply. In the end, I believe the United States is well positioned to produce ethanol at competitive rates.

We have to make sure that consumers have access to E85 ethanol. Already there are millions of E85 capable vehicles on the road. I have introduced legislation that would require manufacturers to install flexible-fuel technology in all new cars in the next ten years. This is an easy and cheap modification, which allows vehicles to run on a mixture of 85 percent ethanol and 15 percent gasoline, and will make their products more attractive to consumers.

Next we have to make sure that consumers can buy the E85 fuel. I'm pleased that many independent gas station owners are taking advantage of the tax credit for E85 pump installation that we passed in the energy bill. I have co-sponsored legislation that would back loans for even more E85 pumps. The next challenge is to get E85 distributed through the big gas station chains. I've asked the oil majors about this, and they have said that sufficient demand for E85 does not exist. But demand will not develop for something that consumers do not have an option to buy. **It is time for the oil companies to make E85 available to the consumer. If these companies do not take advantage of the incentives Congress has provided, I would be in favor of legislation mandating that they install E85 pumps in appropriate markets.**

There is still more work to be done to tilt our energy balance toward alternative fuels. That is why **Senator Obama and I will soon introduce a new bill that will promote other means to move these fuels into additional markets and make them more widely available for consumers. Among many provisions, the Obama-Lugar bill would create an alternative diesel standard comparable to the renewable fuels standard that I helped put into the 2005 energy bill. It would also provide new incentives for the production of flexible fuel vehicles. We believe that U.S. national security will be served by more robust coordination of all the elements that contribute to energy security. Consequently, the bill also would establish the post of Director of Energy Security, who would answer to the President.**

Energy Partnerships

As we pursue energy security at home, we must seek energy partnerships abroad. This week, I will introduce framework legislation that calls for a realignment of our diplomatic

priorities to meet energy security challenges. Partnerships with foreign governments can help speed our conversion to real energy security, rebalance power in geopolitics, and open new markets for fuel technologies.

The “Energy Diplomacy and Security Act” calls upon the Federal Government to expand international cooperation on energy issues. This bill will enhance international preparedness for major disruptions in oil supplies. A particular priority is to offer a formal coordination agreement with China and India as they develop strategic petroleum reserves. This will help draw them into the international system, providing supply reassurance, and thereby reducing potential for conflict.

The bill would also stimulate regional partnerships in the Western Hemisphere. Most of our oil and virtually all of our gas imports come from this Hemisphere. The bill creates a Western Hemisphere Energy Forum modeled on the APEC energy working group. This would provide a badly-needed mechanism for hemispheric energy cooperation and consultation.

Finally, the bill calls for international partnerships with both energy producers and consumers. In addition to seeking new avenues of cooperation, the bill is intended to give focus to existing bilateral energy dialogues, which have lacked clear objectives and political backing.

We must engage major oil and natural gas producers. We should advocate more transparency, improved investment climates, and greater infrastructure security. Oil exporting states wield power for which we must account. Not working with these states will lead to unproductive political showdowns and conflict. Even in challenging relationships such as Venezuela and Russia, we must explore how to improve our energy dialogue.

Strategic energy partnerships with other major consuming countries are crucial for our national security. Energy security is a priority we hold in common with other import dependent countries, which constitute 85 percent of the world’s population. Strategic partnership for energy security with the world’s largest consumers will increase leverage in relation to petro-states. In November, I introduced S. 1950, a bill that specifically targets India for enhanced cooperation on alternative energy sources, such as clean coal technology and biofuels.

To close, I would like to express my optimism for the future. Our current energy balance is the result of industrial and consumption choices of the past. Despite our import dependence today, the U.S. is in a strong position to choose a different path, a path toward real energy security. Success would free future generations of Americans from the energy dilemma that threatens to compromise our security and prosperity. It could also lead to opportunities in many new industries that could reinvigorate our economy. These are problems that can be solved. We must act now. We must act together.

Thank you.

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