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ENERGY SECURITY, ENERGY URGENCY:

KEY ISSUES FACING THE NEXT PRESIDENT

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P R O C E E D I N G S

MR. PASCUAL: Good morning. My name is Carlos Pascual. I'm the Vice President and Director of the Foreign Policy Program here at the Brookings Institution. It's a pleasure to welcome you today.

We have before us a discussion which I think will be tremendously interesting on energy security and its urgency as a policy priority for American prosperity and security and its centrality as a global issue and how energy security has increasingly come to dominate international security concerns, economic concerns, how it's influencing great powers such as the United States, China, India and Russia, just to name a few.

And, of course, we have the benefit of leading us in this discussion, Senator Richard Lugar.

Joining with Senator Lugar will be David Sandalow. David is a Senior Fellow here at the Brookings Institution, previously served as Assistant Secretary of State who was responsible for climate policies. He also worked at the White House on climate policies, and you'll see in front a book that he's recently done called *Freedom from Oil*.

A little bit later, David will be responsible for a plug-in hybrid that you will see in front of the building as you leave which gets, I'm told, up to about 150 miles a gallon, so an example of the future today.

Senator Lugar's speech today follows a landmark address that he

gave us here in this auditorium in March of 2006. At that point, he outlined six threats to U.S. and global peace and prosperity that are related to energy and security, and he set forth the challenge to the President of the United States and the Congress to demonstrate leadership on this issue.

I will let Senator Lugar give his own assessment on whether or not progress has been made on these issues. From my own perspective, I'll just say that I think that these questions of energy and security will stand as a challenge for the next President of the United States.

To put this in context, Steve Mufson of the *Washington Post* recently wrote that oil consumers pay four to five billion dollars more every day than they did five years ago. In 2007, this will amount to about $2 trillion in transfers to oil companies and oil-producing nations, just to give you a sense of what the volumes are that are involved.

Now, inevitably, this affects our peace and prosperity and security as a result of increasing oil and gas prices, as a result of limited investment that we've actually seen on the part of oil and gas producers. Because of limited short-term options that we face on both the demand side and the supply side of the market, because of the volatility that we face on critical transport routes, we've seen as well a tremendous transfer of power that has given states such as Russia, Iran and Venezuela a much greater degree of power than one would normally think related to

their per capita income and importance in the international community. What this has done is reinforce the urgency of conservation, of alternative fuel choices and of new technology.

Those very same issues also happen to be central to the debate that we have today on climate change. For many people, they have argued or felt that the issues of climate change are really quite far away, distant in the future.

But I think it's worth, again, recognizing two points. The International Energy Association, in its recent World Outlook Report, estimated that by 2030 there will need to be about $22 trillion in new investments in energy. That's over the course of the next 20 plus years. Over that period of time, the basic foundations will be made for the energy infrastructure that is going to carry us 40 to 50 years beyond that, into the future. So when we're talking about 2050 and 2070, in fact, it's actually over the next 20 to 25 years that we're looking at the fundamental issues that are going to be made and the types of investment that are going to take us through the rest of the century.

It's also not that distant from a geographic perspective. Sometimes people think of climate change and imagine, well, Bangladesh and Mali are going to be badly off as a result of either going under water or being permanently under drought, and that's terrible for those countries, but you

know maybe it's not so bad for us at home.

But let's remember the national catastrophe that we faced and the political catastrophe that that created for the President of the United States when New Orleans went through the Katrina disaster. Now, imagine Florida under water, South Carolina under water or go to the western part of the United States where already they're experiencing shortfalls in rain as a result of the reduced levels of snow that they're experiencing in the region, and this isn't such a distant issue.

In addition to that, it becomes a question as well of our global security. Ironically, one of the things that we face as a result of increasing oil and gas prices and volatility in international markets and even from a perspective of doing the kinds of things that are necessary to do on climate change issues, putting a price on carbon, inevitably what it does is it raises the attractiveness of nuclear power as an attractive option in the choices that countries are making about their energy futures. Today, there are 66 countries in the world that have some form of nuclear program -- arguably, nine of those, some form of a nuclear weapons program and the rest of them, some form of civilian program or research reactor.

But what happens when you have a doubling of that, perhaps more, of countries seeking civilian nuclear programs and how many of them are

going to seek to achieve control over the fuel cycle? What kinds of steps need to be taken today so that we create a firewall between civilian uses of nuclear energy and weaponization programs?

Again, that is an issue that Senator Lugar has addressed from the outset when we've seen these threats in the cooperative threat reduction programs that he and Senator Nunn began in the early 1990s.

So there's no better person to address this kind of agenda than Senator Lugar, the six-term Senator from Indiana. I would say that he has really been the consciousness of America on energy security. From his position of leadership, at times chairman of the Senate Foreign Relations Committee, he's put these issues in an international context, and he's helped us understand why they are so critical to the future of our country from a global perspective.

From the position of the Chairman of the Senate Agricultural Committee, he has consistently highlighted the impact that energy issues and climate issues are having on the agricultural sector and competitiveness in that sector.

As a citizen of the United States, you can see the vehicle that he drives outside and his personal concern for the consumption of energy and the conservation of energy.

And, as a visionary, he really had the audacity to believe that vast

expanses of the Soviet Union, which held SS-18s and SS-20s and SS-24s, could actually be converted into fields that were covered with sunflowers. That might have seemed like quite a dream to people in the 1980s and early 1990s, but it is a reality that we experience today because of this man with a visionary spirit, who now brings it to the topic of energy security.

Senator Lugar, we're delighted to welcome you here to the stage at Brookings.

(Applause.)

SEN. LUGAR: I am deeply grateful to my friend, Carlos Pascual, for his very generous introduction and to the Brookings Institution for this opportunity to speak again on energy security.

I want to congratulate Brookings for establishing a new Energy Security Initiative in which I'm proud to serve as an advisory board member. The initiative will take advantage of the broad expertise of Brookings' scholars across fields that intersect with energy security and will offer valuable analysis and policy options for the years ahead.

This is my second opportunity to come to Brookings to speak about energy security, specifically. In March, 2006, I asserted, as Carlos has mentioned, the exploding demand for energy, the vulnerability of energy supplies to terrorism and warfare, the increasing concentration of energy

assets in the hands of problematic governments, the growing willingness of these governments to use energy as a geopolitical weapon and evidence that climate change was accelerating had combined to fundamentally change the energy debate.

I contended that the balance of realism in U.S. energy policy had shifted from proponents of a fossil fuel-based laissez-faire approach to relying on market evolution to advocates of energy alternatives who recognize the urgency of achieving a major reorientation in the way the United States obtains and uses energy.

I said that, in the absence of revolutionary changes in energy policy, we would be risking multiple disasters for our country that would constrain living standards, our living standards, undermine our foreign policy goals and leave us highly vulnerable to economic and political disasters with an almost existential impact.

The new energy realist must ask, how can we shape our energy future before it shapes us in calamitous ways?

In the nearly two years since I gave that speech, public awareness of our energy dilemma has improved. Politicians understand that Americans care about energy security, the environmental and balance of payments impact of oil dependence, and the cost of energy.

Yet, despite the growing focus on energy issues in American

politics, we have not committed ourselves to the policy steps required to achieve a promising alternative future. In fact, advancements in American energy security have been painfully slow during the last two years, and political leadership has been defensive rather than proactive.

One can point with appreciation to some positive trends and initiatives. For example, the Energy Bill passed last week by the Senate included a substantial increase in the renewable fuels standard. It took Senators Daschle, Harkin and me five years to pass an RFS that was less than a quarter of the 36 billion gallons now agreed upon but compared to our acute energy vulnerability, progress in most areas of energy policy has been insufficient.

If we have to endure an oil embargo, if terrorists succeed in disrupting our oil lifeline, if we slide into a military conflict because oil wealth has emboldened anti-American regimes or if eventual scarcity of oil sends prices to unfathomable heights, it will not matter that before disaster struck, the American public and its leaders gained a new sense of realism about our vulnerability. It will not matter that we were producing, marginally, more ethanol than before or that consumers are more willing to consider hybrids and other alternative vehicles.

Achieving a positive trend is almost inevitable as long as energy costs remain high because these costs will lead to some improvements in

investment and conservation. We need to have the discipline to understand that a modestly positive trend line is not enough.

Now, last month, we received another wakeup call about exploding global energy demand. In its annual World Energy Outlook, the International Energy Agency offered several startling estimates. It predicted that global demand for energy will increase by 50 percent by 2030. Three-quarters of this demand growth will come from the developing world and 45 percent of it from China and India alone. Eight-four percent of that demand growth is expected to come from fossil fuels, translating into a 57 percent increase in carbon dioxide emissions.

The IEA projected that global oil demand will increase from about 85 million barrels per day to 116 million barrels per day by 2030. To meet surging oil demand, the world will become even more dependent on OPEC with more than half the world's oil supply coming from those countries.

Meanwhile, as oil prices have flirted with $100 per barrel, the income of oil-exporting nations is soaring. According to the United States Treasury Department, the number of sovereign wealth funds doubled between just 2000 and 2005. These national investment reserves now hold between 1.9 to 2.9 trillion dollars. Some estimates double those figures. Russia has $130 billion in its stabilization fund, and Venezuela

now has an estimated $18 billion.

These funds could be used to infuse helpful liquidity into international financial markets and promote local development, yet they could also be used for political manipulation and to undermine key United States' foreign policy priorities.

We can debate the margin of error in any of these projections, but the picture they paint is a bleak one for global stability and United States' influence.

In the absence of technological breakthroughs that expand energy supplies for billions of people worldwide, it will be exceedingly difficult to meet the world's energy needs. If concerns over climate change are factored into these policies, the challenge becomes even greater because serious efforts to limit carbon could constrain energy options, particularly the use of coal.

Now, we find ourselves in a situation that should be intolerable for a superpower and for a nation with such high economic expectations as we have. We maintain a massive military presence overseas, partly to preserve our oil lifeline. One conservative estimate puts U.S. oil-dedicated military expenditures in the Middle East at $50 billion per year, but there is no guarantee that even our unrivaled military forces can prevent an energy disaster.

We have lost leverage on the international stage and are daily exacerbating the problem by participating in an enormous wealth transfer to authoritarian nations that happen to possess the commodity that our economy can least do without. October trade figures show that our non-petroleum trade deficit shrank by 2.9 percent in just that month. But because of our oil import bill, the overall U.S. trade deficit rose 1.2 percent to $57.8 billion deficit in just one month.

Our energy vulnerability is intensified by the increasing percentage of United States' public debt, now 44 percent held by foreign entities, and the dimming luster of the dollar. A very significant recession could be triggered by economic or geopolitical forces over which we now have little control.

I do not believe these challenges are insurmountable, but it's unlikely we can address them within the prevailing political mindset that has proven to be incapable of more than incremental action on energy security. Today, I would state unequivocally that energy security and the economic and environmental issues closely associated with it should be the most important topic of the 2008 Presidential Election.

I say this deliberately, notwithstanding the existence of extremely important immediate concerns such as the War in Iraq, the performance of the American economy, persistent public policy struggles that we've

confronted for decades such as deficit reduction, healthcare and social security. I say this even in the context of my own longstanding evangelism related to nonproliferation and arms reduction, issues which I believe have not diminished in importance.

Three factors lead me to the conclusion that energy is the most vital topic of this presidential election. First, energy is the issue with the widest gulf between what is required to make our nation secure and what is likely to be achieved through the inertia of existing programs and congressional proposals. As such, it is the issue on which meaningful progress most depends on the great intangible in American public policymaking, the application of dramatic, visionary and sustained presidential leadership.

Congress and private enterprise can make evolutionary energy advancements, but revolutionary national progress in the energy field prominently is dependent on presidential action. Our energy dependence is perpetuated by a lack of national will and focus, and only the President has the visibility to elevate a cause to national status, and only the President can leverage the buying power, regulatory authority, legislative leadership of an administration behind solving a problem that is highly conducive to political procrastination and partisanship.

Second, transformational energy policies are likely to be a requirement for achieving our own economic and social aspirations here at

home. In an era when exploding global demand for energy creates high prices and fears of scarcity, the United States' economy is likely to continue to underperform.

Our ability to address social security, healthcare, education and overall budget problems will be heavily encumbered over both the short and the long run if we do not mitigate our energy import dependence. Almost any scenario for recession will be deepened by high energy costs. Moreover, many of the most severe recession scenarios involve sustained energy disruptions due to terrorism, war, embargo or natural disaster.

Third, energy is the underlying condition that exacerbates almost every major foreign policy issue. We pressure Sudan to stop genocide in Darfur, but we find the Sudanese Government is insulated by oil revenues and oil supply relationships. We pressure Iran to stop its uranium enrichment activities, yet key nations are hesitant to endanger their access to Iran's oil and natural gas.

We try to foster a global respect for civil society and human rights, yet oil revenues flowing to authoritarian governments are often diverted to corrupt or to repressive purposes. We fight terrorism, yet some of the hundreds of billions of dollars we spend on oil imports are diverted to terrorists.

We give foreign assistance to lift people out of poverty, yet energy-

poor countries are further impoverished by expensive energy import bills. We seek options that would allow for military disengagement in Iraq and the wider Middle East, and yet our way of life depends on a steady stream of oil from that region.

American national security will be at risk as long as we are heavily dependent on imported energy. Vigorous energy diplomacy of the type that only a committed President can ensure is required around the world. Even as we seek to reduce our foreign oil dependence, the United States will remain part of the global energy system and our foreign policy priorities will be affected by the production and consumption decisions of other nations.

A top priority in our relations with China and India should be helping them avoid replicating United States' dependence on oil and coal and guiding them to cleaner power generation technologies. Countries from Indonesia to Egypt to Chile are considering new nuclear power programs, creating new risks for proliferation of enrichment technology. Management of energy relations with Russia will remain difficult for our NATO allies, and any strategy for resolving the situations in Iraq and Iran must include a plan for stability of Persian Gulf oil supplies.

Making progress in Central Asia and the Caucasus is another case in point. Recently, President Putin of Russia sought to secure agreements

with Kazakhstan and Turkmenistan to ship their energy north through Russia rather than through alternative routes that would not be dominated by the Kremlin. Next month, I plan to travel to that region to demonstrate American interest in strengthening relations with these countries.

An east-west energy corridor would help reduce Russia's stranglehold on gas shipments in Europe. Diplomatic support for the Baku-Tbilisi-Ceyhan and the South Caucasus pipelines that have led development of the corridor was a bold initiative with tremendous strategic importance. Already, we have seen benefits for stability in the region and closer relationships with Georgia and Azerbaijan. Those benefits can also be reaped in Central Asia.

Whoever is sworn in as President in 2009 must now elevate energy security to the status of a core national goal and must directly engage all the American people in that solution. If the next President addresses energy through a familiar ideological prism, the chance to strengthen United States' security and economic prosperity will be lost.

To succeed, the President must be more than thoughtful and attentive to energy concerns. The President must be relentless. He or she must be willing to stake the reputation of the administration on politically difficult breakthroughs that meaningfully contribute to United States' energy security. The President must be willing to have his or her

administration judged according to its success or failure on this issue.

Politically, that is not an easy thing for any President to accept. The President will have advisors who will be whispering cautions about the risks of committing the prestige of any administration to aggressive energy goals. Those advisors will say with some credibility that a President can appear forward-looking on energy with a few carefully chosen initiatives and occasional optimistic rhetoric promoting alternative sources.

They will say the voting public's overwhelming energy concern is actually high prices for gasoline at the pump and home heating oil and that as long as the President appears attentive to these concerns, they can cover their political bases without asking for sacrifices or risking the possible failure of a more controversial energy policy.

They will point out that the core constituency of their party will have expectations on energy policy that would rule out entire categories of action.

The next President must reject this type of politically defensive posture. The President must be willing to operate outside the energy policy orthodoxy of his or her party. The President must avoid the temptation to substitute popular gestures like reducing gasoline taxes or using the strategic petroleum reserve to temporarily cut gasoline prices for a true security energy program. He or she must be willing to reject

subservience to the major energy and environmental lobbying groups without denying the contributions that each of these groups can make to the dialogue.

Now, with these reference points in mind, I would submit it is not enough for Americans to ask presidential candidates which energy solutions they prefer or what legislation they will endorse. Americans need to be able to measure the commitment of the candidates to changing the fundamental energy equation in the United States. Voters deserve answers from presidential candidates on questions such as these:

First of all, how will you involve members and groups of the other party in energy deliberations from the beginning of your administration and will you oppose members of your own party who stand in the way of broad energy achievements?

How often will you, personally, devote your attention to energy security and how often will you speak to the American people about it?

Will you feature energy security in your inaugural and State of the Union addresses?

Will you guarantee that your Energy Secretary will be the most talented person you can find, a visible big-leaguer who inspires public confidence and will not be relegated to the fringes of your administration?

How will you impress upon the rest of your cabinet, including the

Secretaries of State, Defense, Commerce and Treasury, that they must factor energy concerns into their work every day and be prepared to work closely with the Secretary of Energy?

Will you attempt to build a public pride in achieving energy goals and will your administration produce and publicize clear benchmarks of progress toward those goals even when progress has failed to meet public expectations?

Will you make clear to every member of your administration that achieving your energy goals is among the highest of administration priorities and will you dismiss advisors if they deliberately slow down or undermine progress toward your goals?

Despite auspicious words, Democratic and Republican presidential candidates are at risk of locking themselves into policies from their playbooks of the respective parties. Although there have been some exceptions, the major candidates have split along party lines on most energy issues. As reports by Edmund Andrews in the *New York Times* recently observed, “On oil, the parties fall into two camps: use less or find more.”

Republican candidates generally reject government market intervention and favor increased oil drilling. They point out that government regulation and mandates run counter to the entrepreneurial

forces of our market system. Yet, a laissez-faire approach is insufficient for bringing innovation, trial production runs and dramatic volumes in production quickly enough to meet looming energy challenges. It also fails to recognize that global energy markets are not free. According to PFC Energy, about 79 percent of the world's oil supply is controlled by state-run companies.

Domestically, new energy technologies face hurdles well beyond price. Our nation's infrastructure has been built around the premise of cheap and accessible oil, a premise that is no longer valid. Aside from the rare E85 pump, Americans are not free to choose fuels other than those based on petroleum.

Likewise, markets have failed to internalize the costs of climate change, a huge challenge. The market needs clear signals to guide investment and innovation toward the national interest. New energy technologies need a hand-up to prove their validity and to become price-competitive over entrenched market biases.

This does not mean endless subsidy. For example, to jumpstart biofuels usage, I advocate replacing the current static 51 cents subsidy for ethanol with a variable subsidy tied to the price of oil that includes a sunset provision. This will effectively serve as a price floor for oil.

Although we should look critically at proposals for mandates, some

may be necessary to overcome market blockages in the interest of national security. Mandates requiring production of flex fuel vehicles, installation of E85 pumps and increased CAFE standards are justified now, given the national security gains we would reap from significantly reducing oil consumption.

For their party, the Democratic platform of green idealism risks diverging from energy reality by the United States and the world. I share the view that the threats related to climate change are potentially severe, require international action, require U.S. leadership, but U.S. climate policies have to be synchronized with a sober evaluation of what is possible globally.

World demand for fossil fuel consumption, given the rapid industrialization of China, India and other emerging economies, will continue to be voracious as the IEA predicts. China's demand for power generation so far this year has grown at an astonishing annualized rate of more than 16 percent. In this context, long-range arbitrary targets for cutting global greenhouse emissions will be quickly overwhelmed without rapid breakthroughs in energy technology and much greater global coordination.

For some Democrats, nuclear power, coal and increased oil exploration are simply off the table. Yet, coal is the single largest source

of electric power in this country, and we have abundant reserves. Instead of aggressively pursuing technologies to capture and store or use greenhouse gases, some green idealists would have us stop using coal completely.

Domestic oil exploration will not solve our energy import dependence, but the extraordinary vulnerability of the United States and the machinations of unfriendly oil-rich nations necessitates that we attempt to maintain our domestic supplies through continued exploration.

Reticence toward nuclear power is equally problematic in a world of rapidly expanding carbon emissions. Continued progress on safety and waste issues is certainly necessary, yet nuclear power offers an abundant alternative to carbon-intensive fuels.

A credible energy security agenda demands that we break free from partisan divisions, and this will require tremendous leadership from the President who must speak plainly to the American people and to special interests. It also requires dogged devotion to solving specific energy deficiencies. A broad, unfocused campaign to achieve an ill-defined state of energy independence almost guarantees that no objective will receive the resources and attention necessary to overcome technological obstacles and societal inertia.

I believe the President should communicate in the early days of his

or her administration that the federal government will use every power to make competitively priced biofuels available to every motorist in America. Such an accomplishment would transform our transportation sector and cut our oil import bill dramatically. It would require multiple elements including ensuring that virtually every new car sold in America is a flexible fuel vehicle capable of running on an 85 percent ethanol fuel known as E85, that at least a quarter of American filling stations have E85 pumps and that ethanol production is rapidly expanded, especially ethanol from biomass.

None of these goals are easy to meet, but none are impossible if the weight of the federal government and high profile presidential advocacy are devoted to their realization. Brazil already has achieved the large-scale deployment of ethanol as a national transportation fuel, and its success is a source of public pride in that country. Brazil has also found and developed new offshore oil.

Equally important, the next President must ensure that improvements in gasoline and diesel mileage are not limited to the higher CAFE standards and the Energy Bill passed by the Senate. As one example, successful commercialization of a plug-in hybrid vehicle could make a 35 mile per gallon goal look archaic. The federal government has numerous tools to improve the mileage of the Unites States' vehicles from

direct federal support for research to government fleet purchasing to market regulations and incentives. Given that other developed nations have made great strides in improving fuel economy, this is fertile ground for rapid improvement.

In fact, achievements on this front largely would be a matter of generating and sustaining political will. Incredibly, cars in America today get less mileage per gallon than they did 20 years ago. Meanwhile, hybrids, plug-in hybrids and fully electric cars are at or nearly at commercialization, yet there is not enough incentive for consumers to buy them or producers to make them on the mass scale necessary.

The next President must begin a national dialogue on nuclear power that grapples with public concerns over safety and waste disposal and reaches decisions about whether the federal government will encourage the construction of new facilities through liability protection and loan guarantees. But after the dialogue, the necessary facilities must be built.

Similarly, the President must initiate a plan on how he will use America's vast coal resources. The United States must accelerate work on technologies to capture and store carbon that can be employed both in this country and abroad.

The President also must ensure that vital research and demonstration projects are not encumbered by bureaucratic inertia, red

tape and political resistance. During the last several years, for example, we experienced exasperating delays in the groundbreaking for the first commercial-scale cellulosic ethanol plant as investors waited for the federal government to establish the regulations and the applications procedures for loan guarantee program. The program was meant to jumpstart the commercialization of cellulosic ethanol, a key goal of President Bush and Congress, but despite the urgency of this mission the Energy Department's glacial implementation of a program frustrated potential investors and those of us who were urging the transition to gasoline alternatives.

This project is finally moving forward, but critical time was lost. The development and deployment of new technologies is likely to be the difference between success and failure of our efforts at energy transformation.

The next President must demand that research projects related to battery technology, cellulosic ethanol, carbon capture and storage, solar and wind power and dozens of other technologies receive the highest priority within the administration. We must be very clear that energy security is a political problem. The United States has the financial resources, the scientific prowess, productive land and industrial infrastructure to address our energy vulnerability.

The question is whether we will heed abundant warning signs and apply the leadership and political will to deal with this problem in the present rather than suffering grave consequences in the future. Meeting this challenge of statesmanship will be the defining test of the next President.

I look forward to encouraging whoever is elected to take up that challenge, and I am confident that you all will do the same.

Thank you very much.

(Applause.)

MR. SANDALOW: Well, thank you, Senator Lugar.

It is a very great indeed for me to share the podium with one of my heroes, Senator Richard Lugar.

I have been, in the past two months, in about a dozen cities around the country and in Beijing. Because Senator Lugar was good enough to do the forward for my book and his name is on the cover, I've had the occasion to hear many remarks about him, and I can tell you that the high regard that people in this room feel for Senator Lugar is certainly shared in many other places.

And, I haven't even been to Indiana, yet, Senator Lugar. So, thank you very much both for that extraordinary speech and for your record of leadership on this issue.

Thank you also to Carlos Pascual, my good friend and colleague who has brought smarts, judgment and real leadership to the White House, to the State Department and now here at Brookings.

Carlos mentioned the plug-in hybrid which you can see as you walk out of this room, out in front of Brookings. It's a wonderful car. I go home every night. I plug it into my garage, to a regular extension cord. It costs about the equivalent of 75 cents a gallon to fill it up, and it gets 30 miles on a charge.

After I had it about a week, I called the company that had done this conversion. By the way, it's a Prius with the spare tire taken out and a lithium ion battery put in, and the lithium ion battery is very light. Lithium is the third lightest element, the lightest metal, and it gets an extra charge.

I called the company, and I said I'm getting 100 miles to the gallon. I'm very excited about this.

They said, what? That's ridiculous. We get much better than 100 miles a gallon with that car. How come you're getting so little?

They came, and they showed me how to drive the thing so you can ride the hills and get at least 150 miles a gallon with this thing. By the way, this car is not flex fuel, although in theory it certainly could be, and if it were a plug-in flex fuel hybrid, you would be getting easily 800, 900 or more miles per gallon of petroleum products as you drove it along.

So, the technologies for making the type of transformation that Senator Lugar has been talking about are here today, and the only question is whether we can bring them to market in the time that's required.

In just the few minutes I've got, I thought I would tell two stories from my book, *Freedom from Oil*. One of the real joys of writing this book for me was traveling around the country and talking to the amazing Americans who are working on this issue of breaking our oil dependence. It just turns out that there are two of them that involve the State of Indiana, so I thought I would tell them today.

One of them involves Buddy Rice who won the 2004 Indianapolis 500. Some of you may know that the Indy Racing League this year is being run completely on ethanol, not a bit of petroleum products in the Indy Racing League, not only for the Indianapolis 500 but for all of the races, and Buddy Rice has been a real leader on this along with Jeff Simmons and some of the other drivers.

And so, I arranged to go see Buddy down in Richmond at the Richmond International Raceway when they ran a race this spring. I drove down there.

I don't know if any of you go to races, but I had done this some as a kid. I really haven't gone to races that much as an adult. But what I

remember very strongly is two things. The loud noise -- it is so deafening, you can't talk and you've got to use hand signals to communicate -- and the smell of gasoline.

So I went down to the Richmond International Raceway to talk to Buddy Rice after the race. It was just as loud as I ever remember, and it smells like a bakery. They're burning sugar as they run around that track at 160 miles an hour and not a bit of gasoline.

I talked to Buddy, and he and the drivers are very enthusiastic about ethanol. It's high octane. They are getting great performance. If our Indy racecar drivers can use ethanol as an alternative fuel, I think all Americans can.

My favorite trip by far in writing this book was up to Reynolds, Indiana, which is a town of about 547 people in between Indianapolis and Gary. Reynolds, Indiana has decided that they want to get completely off of fossil fuels. They want to rely only on renewable fuels in their town. It's actually not that easy for a little town of 547 people to make that transition.

But I went up there, and I talked to these guys about it, and they told me what they're doing. They're in the middle of corn area, and so they've had discussions with VeraSun Ethanol to come there. They're importing. They've got ethanol coming in. They talked to the one gas station in town and got them to make an E85 pump. They got GM to give them some

discounts on some flex fuel cars. They bought some more, and they're well on the way to transforming their transportation system to be completely independent of fossil fuels and rely only on renewable power.

Then they want to move to the electricity grid. They're a hog town. They've got about 100,000 hogs there, and disposing of the waste has been a real challenge for them, but now they've decided to build an electricity plant that will burn that waste. So they can make electricity from the waste, and they're moving on the way to solve this problem too.

The President of the town, Charlie Van Vorst, told me, sitting in a restaurant there. He said, you know the real issue here is it's hard to get people to believe in something that's never happened before.

I think when it comes to getting off of oil and transforming our oil infrastructure and indeed our entire energy infrastructure, that's the real challenge. It's hard to get people to believe in something that's never happened before.

I grew up in a world in which 96 percent of the energy in our cars and trucks is oil. My parents grew up with that world. My grandparents grew up with that world. But it doesn't have to be that way, and I think with determination we can make the change.

By the way, I see, standing in the back of the room, Les Goldman, who I've been working with at the plug-in car company, has just walked in.

If any of you have questions about the plug-in car on the way out, that I spoke about earlier, you can talk to Les.

On the way back from Reynolds, I had rented a GPS box from Hertz for $10 a day, and it was the first time I had done that. It was about nine months ago. I was driving back. The GPS box, as I was driving back to the airport, was telling me, turn right in 5 miles, turn left in 100 feet.

This actually was the first time I'd had a GPS box as I drove along. It's amazing. I was all excited about it. I went home, and I told my teenage kids about this who started making fun of me, saying, Dad, you're the last person in America ever to use a GPS box for the first time.

It was incredible, and I was thinking as I was telling my kids about this experience of driving along and the soothing female voice says, turn right in 100 yards. I was thinking it's not just that we didn't have something like this when I was a kid. It's that I never imagined the possibility of a technology like this when I was kid. It just never occurred to me that I might have this.

And so, I started wondering, so what is it that my teenage kids will say the same thing about 30 years from now? What will they look back on and say, when I was a kid, we didn't even imagine the possibility of something like that?

I just believe that with all of the political leadership that's going into

this issue, with all of the effort that's going into this issue, with all of the money and attention and creativity that the American people can bring to bear on this issue, that by the time my kids are my age, that we will indeed be free from oil.

So, thank you.

(Applause.)

MR. PASCUAL: David and Senator, thank you very much. First of all, thank you, both of you, for extraordinary presentations and framing, laying out the issues, laying out both the absolute critical necessity of vision and the absolute need for leadership on this issue.

Senator, you've just been a model of that leadership throughout your career, and we thank you again for the role that you've played in that.

Let me thank you as well for mentioning the Energy Security Initiative that we're doing here at Brookings, and this is a program that we've undertaken at Brookings to bring together our work on foreign policy and economics and governance in a way that brings all of these issues together and really interlinks them, much the way that you have in your speech.

The speech that you gave in March of last year actually was very much inspirational to pushing us in this direction because we realized you can't do this in one program alone. You can't just look at the foreign

aspects. You can't look at just the domestic aspects. But it's one interlinked world. And so, in many ways, this program is a tribute to you and your work, and we're very much honored by having you as one of the co-chairmen of that advisory committee. So, thank you for that.

I'm going to take advantage of having you both here and a microphone to ask a first question or two, and then we'll go out to the audience because I knew people are very anxious to be able to bring some questions forward to you.

I want to come back to this question of technology and politics and the importance of presidential leadership and focus on this a little bit more with both of you.

One of the things that we've learned over time from our basic economics is that it's not the only driver, but a critical factor in driving innovation and technology is price. Price is a big motivating factor. In the energy world and in the climate world, one of the things people often talk about is the importance of putting a price on carbon, whether that's through a carbon tax, through a cap and trade system, a tremendously controversial issue as well here in the United States.

In effect, what it's increasingly driven us to are policies that have to be driven as second best alternatives, and you've been great at pushing many of these through -- renewable fuel standards, renewable portfolio

standards, fuel efficiency standards -- which, in effect, require investments in technology that imply an implicit price on carbon, but it never lets us see what that price actually is to be able to drive markets in the way that ideally would be the case.

And so, we're in a political year here, and the last thing that any presidential candidate usually wants to do is talk about things like prices on carbon which could be interpreted as advocacy for new taxes. Yet, at the same time, reality is telling us we gotta confront these kinds of things.

Now, you just made the educated 30-minute speech on exactly why these issues have to be addressed in a serious manner. How do we put this in the length and the terms that politicians and the public can understand?

Is there a case that can be made here that makes these issues politically palatable and tangible to the American public and to our politicians?

SEN. LUGAR: Well, I would say, optimistically, the bill the Senate passed just last week and hopefully the House will pass today or tomorrow and the President will sign is a pragmatic illustration of how things finally occur. Now, you can go through the history of weeks and months of debate on all of these issues, and many, many people suspected the whole thing would collapse for a variety of reasons.

The reason it did not collapse, and there certainly is argument and sharp divisions in the Senate over this, is that essentially the alternative energy standards, often interpreted as wind energy, that aspect was finally removed from consideration. In part, this is because we have not really figured out how the wind energy or other alternatives can be produced in most states to meet a goal. Fifteen percent replacement was being suggested, and that is sort of out of sight for most states.

You then get into an income transfer. States really begin depositing, from their own treasuries, money into the kitty because they're not going to be able physically to get close to 15 percent. There is not enough wind in the place, and they haven't thought of other alternatives. There may be, and this is discouraging on one hand, but nevertheless pragmatically that was removed.

Even more controversial, the tax portion of the Energy Bill was removed. The $22 billion involved included several billion for incentives for new types of energy and fuels and various things but also $13 billion of incentives already given or royalties to oil companies that would be removed. The White House indicated that any tax element here was a sure veto. There were many Republicans, although not all, who likewise held that point of view. But, in any event, after a vote and with 60 votes as required, as most things are in the Senate these days to avoid a filibuster,

59 votes could be mustered for the tax situation and it was removed.

Therefore, these two elements are out of the bill which would have strengthened it in my judgment and the judgment of many, talking as we are today. But it does make possible an Energy Bill that is going to have CAFE standards for the first time and is going to elevate ethanol in the form not just of the corn-based but cellulosic and other things to a $36 billion as opposed to $7.5 billion. That's a huge change in, say, a 20-year period of time. When the 7.5 was adopted, that was seen as totally out of sight, and yet that's being exceeded perhaps in this calendar year or in a few months already as opposed to 2012 or whenever it was supposed to happen.

In short, these things can happen in government if people finally get serious about it. In most of our legislation this year, we have successfully checkmated each other in the various parties in both houses plus the two houses plus presidential vetoes so that virtually zilch is occurring. The public decries, but nevertheless we've not risen above this.

So, when I'm asking this President to do all of these things, I'm cognizant of my own personal experience day by day as a part of this milieu. This is all well and good, one would say. That is why, and I don't mean to compromise the message, but presidential candidates obviously are going to be very cautious about what they say during the campaign.

They are on almost all issues.

There have been charges in various newspapers that have shown what presidential candidates have said about specific issues. Most are in favor of ethanol as a general proposition, although they get caught up in various states with this idea of God meant corn to be used for food, not fuel. The fertilizer from corn fields now pollutes our waters. We're getting a whole long issue about all the reasons why corn is a bad thing and ethanol likewise, and here we are barely displacing with a small, single digit anything with regard to oil and pretty well exing out the one thing that we are doing. It's an unusual world, but that's the way it goes.

So this President, once he or she gets elected, has got to sort of rise above all this, and I suggest immediately identify people in both parties because it will create this. We could not have had this bill we've passed in the Senate without strong bipartisan work, and that extended over into the House side and finally even into the White House.

Absent that, why, our goose is cooked. People may be able to remain doctrinaire, but what we're talking about today is not going to advance, and then you're simply left with the consequences.

MR. PASCUAL: David, do you want to add anything on the smart politics of energy and the environment?

MR. SANDALOW: I share the Senator's view that the Energy Bill

that the Senate passed last week and that I understand the House may pass today is a good bill. It is, in some respects, quite historic. It's the first time in a generation that we've raised fuel economy standards.

I share his view as well; it would have been stronger with these tax provisions. Lost in the course of the tax provisions were some important incentives for plug-in hybrids like the one you can see outside and some other incentives as well. I would have liked to see a renewable portfolio standard or a renewable electricity standard as well.

I guess one lesson I take from this experience is the importance of bipartisanship. In Washington today, to get something done, it requires both parties. Our founding fathers, in their wisdom, designed a constitutional system that takes a lot of consensus in order to move anything, and it was quite deliberate on the part of the founding fathers. In the modern era, we've now added a de facto 60 vote requirement in the Senate, which isn't actually part of the constitutional scheme but is not a reality, and that means a lot of consensus is needed in order to get something done. And so, I think bipartisanship is critical and is part of the answer to your question.

A quick addition here, at the end of my book, I have a proposed speech by the President of the United States on what he or she might say on the energy topic. At the end of it, I have the President who's notionally

standing up in front of all of Congress, looks to the leader of the opposition and says, would you please come up here and share the podium with me and say what you think on this topic?

When I distributed my manuscript to a dozen or two colleagues and friends, this was the most controversial part of the entire book. Some people sent me back emails, saying, David, that is the stupidest thing I've ever seen. You have a serious book here, and then you have this kind of flight of fantasy about what might happen.

Other people said, that's exactly the type of thing that we need to do in order to move on this issue and so many others.

I think bipartisanship and building broad coalitions is essential to getting anything done in this country today and particularly in the energy area.

MR. PASCUAL: I'm going to resist the temptation of keeping the microphone to myself and share it with some others. So, let's start with a question over here, if you could introduce yourself and please make sure to ask a question.

QUESTIONER: I will. Sure. Tom Colina, 20/20 Vision.

Thank you all for being here and, Senator, thank you again for your leadership on these issues.

My question is on plug-in hybrid electric vehicles. My organization

is leading a national education campaign to educate consumers and hopefully prime the consumer pump for people to buy these cars when they're available. One of the frustrations we've had is working with Congress, and we just talked about how the tax package was dropped off the Energy Bill and how to get some tax incentives both for consumer purchases of plug-in electric vehicles and also production incentives.

As we try this again next year, what would your advice be to us to work with Congress to try to get some tax incentives passed on plug-in electric vehicles? Thank you.

SEN. LUGAR: Well, I think there's going to be an open season after the election and hopefully with strong presidential leadership, this is likely to encourage the bipartisanship which we've all been talking about. I think it's there, and I think we've seen that demonstrated in the past week. I was skeptical it was going to happen, given all the speeches that were being made on the subject and also very tough decisions Senators have to make.

For example, the leadership in the Republican Senate came to me and they said, now, we know how gung-ho you are for this Energy Bill and for all of these things, but you've got to vote against cloture on the tax portion because if you vote for that and it happens, 60 votes occur, the President is going to veto it. So, by your vote in favor of what you think

you ought to do here, you're going to exile all the rest of it.

Maybe out of sheer contrariness, I decided to take a chance. I voted for the tax thing anyway, but it got 59 votes. I thought after, what if it had got 60? Was the leadership right? Was the President then so set on it that he just exes it all out? Maybe, as we're seeing in demonstrations of vetoes in other things.

It's an excruciating process. If you have a President, however, who says I'm for all of this, this has to happen, that's a very different atmosphere in terms of the leadership on both sides, but it will take leadership on both sides.

I would just pay tribute to my Chairman, Joe Biden, on the Foreign Relations Committee. Very frequently, he introduces me as the Chairman. I say, no, no, Joe. You're the Chairman now. You've got to realize.

Well, he knows who is Chairman, but it's a very gracious act. Just to pick up the point David was making, maybe Presidents can't do this. Maybe just Chairmen of committees, but it still makes a difference in terms of getting some consensus and fairly broad majorities in our committee.

MR. PASCUAL: In the back.

QUESTIONER: I'm Bob Lieber, Georgetown University.

Senator, your talk and approach are absolutely admirable in noting the broad range of things that are needed, the urgency and priority of

them, but I want to push you on one, I think, vulnerable and highly questionable element within it, recognizing that there's plenty to debate across the board.

I also think you're right on target in noting that both Democrats and Republicans have these sacred cows that are going to have to be sacrificed if there's going to be significant progress. Nonetheless, let me go after your sacred cow, corn ethanol.

There are any number of studies that suggest that, at best, the net energy in terms of oil replacement impact of corn ethanol is very meager, very slight depending on the manufacturing process. There are even some studies that suggest, at best, it's a wash or maybe even has a negative effect.

You're absolutely right to emphasize cellulosic ethanol, but I wonder if it isn't counterproductive to push corn-based ethanol, not least noting in addition the impact on inflation, food prices and so forth.

MR. PASCUAL: Senator, why don't you start on that and, David, maybe you might pick up since you also pick up on issues of ethanol quite extensively in your book?

SEN. LUGAR: Well, it's a clear question of trying to balance equities here. My point, I suppose, has been that if we had various alternatives now -- the cellulosic, the other fibers -- that would be

wonderful, but we don't. So the fact is that corn, even with its deficiencies, as you've suggested in various ways, replaces a very small part of our oil dependence and is about the only thing we are going to have going for us, unfortunately, I think for the next few years.

Now, I say that, hoping I'm wrong, that somehow or other these cellulosic plants rise; that people find the formulas that really work best; that all the things we might have been doing and that I've criticized the Energy Department in my speech for failing to push could have been happening, so we finally get to some solution of that; and that somebody figures out with cellulosic, which they've not figured out yet with corn, how we ever collect the fiber, how we ever distribute the product, how anyone ever uses it, how many cars are available to do it, all of this.

We're struggling just with the very, very first situation in corn.

Now, you can make a good case why corn is not as satisfying as we wish it was and, maybe as you say, even is a wash. But it is our wash as opposed to an import of oil, if you have to finally get to that basic principle. In the meanwhile, we probably will get better with corn as we go at it.

I'm just simply of a mind that in my Senate office I cannot go out even to my home state of Indiana and demand everybody put up these pumps. We send out certificates, flags, everything to anybody who will do any of this, celebrating just buying a flex fuel car, finding out that you have

one. This is rudimentary, but that's the reason right now.

Just to pick up one further problem with ethanol is that the price has not been very good. Refineries call me and point out that they're not going to lose money producing anymore ethanol. The corn may be piling up on their lots that they are not refining. In other words, unless there is national coordination of any program, why, these failures are going to be abundant.

I would just add, finally, even in Reynolds, Indiana -- which my friend has highlighted and it is a wonderful case -- farmers sent in hay for the electrical production, and it's sitting there. Why? Because there are bureaucratic problems even in Reynolds. Despite the fact that the eyes of the nation and the world are on this place, there are some parts that don't work very well without extremely important leadership in this case by the governor of the state or his minions who are out there.

That's what I'm hoping comes from presidential leadership, not just from corn but from the process of getting any of these into a national program.

MR. SANDALOW: Just a few quick points, I've read the literature pretty extensively in the past year on this energy balance/greenhouse gas emission issue, and there's a big debate.

In my view, the best estimate is that using ethanol saves about 20

to 30 percent in terms of greenhouse gases as compared to gasoline, which is not going to save the world or solve the global warming problem on its own, but it's also roughly comparable to the savings from many hybrids that are out on the road that people are pretty enthusiastic about. So, I think, on balance, corn-based ethanol is a pretty good thing.

Second, its most important role is to help prime the pump or manage the transition towards a biofuels economy in which we have lots of different stages of the value chain requiring new types of infrastructure. If we wait until the whole cellulosic enzyme research has been completed to do that, it's going to be too late. So I think we should move along from that standpoint.

Two other quick points: I think the impact of the rising corn prices on food prices overall is often overstated. Corn prices are about 5 percent of the price of a box of Corn Flakes, for example. It clearly has an impact, but it's not as big as sometimes stated.

Finally, I think the key point on biofuels is they are not all created equal. Corn-based ethanol is a different product than cellulosic ethanol than sugar-based ethanol. I mean at the end they're all the same, but their impact on the environment is different. What we need to do is develop labeling systems and tracing systems so that we really give incentives to people to use the most sustainably produced biofuels, in my

view.

MR. PASCUAL: We'll come over here on this side.

QUESTIONER: David Waldon, Winrock International.

Following on a little bit from the last question, we've been doing some work recently that's part of the U.S.-Brazil biofuels program and, in particular, we've been looking at the possibility of opportunities for producing biofuels in the Caribbean and Central America. One of the problems that this raises is the concern the current administration has about importation of ethanol into the United States.

I think it might be useful to hear some views of the panel on this issue in light of the fact that I don't believe there's enough production possibility from corn in the United States to satisfy the situation, and there are severe restrictions of ethanol availability along the East Coast due to transportation issues of bringing ethanol from the Midwest to the East Coast. I'd like to suggest that perhaps importation would be something that should be looked at since oil is freely imported.

SEN. LUGAR: I think that's absolutely right, and I would be one that would advocate the end of our tariffs on any imports. The fact is that right now ethanol is very hard to transport. The number of rail cars that have been ordered in the Midwest has doubled, and we're way behind any possibility of trucks hauling off the rest of it. So we're in a 15-state market.

Now, the import coming into our coastal areas is critically important if we're trying to displace oil, to take up the theme of David's book. And so, as a result, we ought to get on with it.

Now, in fairness, I've heard the President, in private meeting with Senators, raise the possibility with Brazil, specifically, because he was interested in going there and so forth: How about raising the tariff?

So, cheerfully, I said, right on.

But that was sort of a solo voice, I think. There were other Senators who found all sorts of reasons why that would be terrible, to undercut a fledgling program in the Midwest, or just generally don't like the idea of tariffs be removed so peremptorily anyway. This is a matter of foreign policy in dealing with the Brazilians.

But we've really got to get serious if we're to take up this theme of replacement and moving toward some energy independence, even small parts.

Finally, our Latin American policy could really be enhanced. The fact is, with Brazil, we could enter into a partnership of helping a number of our friends in the Caribbean and maybe elsewhere in developments that would be important factors for income in their countries and certain their relationship with us.

Why Hugo Chávez in Venezuela should be left with a monopoly of

diplomacy in this situation is hard to fathom. We just are not very energetic right now and imaginative, I think, about what we can do in our own hemisphere.

MR. PASCUAL: Let me stay with you for one second and turn to an international topic that has a domestic link, China and coal.

Senator, you pointed out in your speech, statistics from the International Energy Association looking ahead to future consumption of fossil fuels. China being the lead. The majority of that being coal. Coal, obviously, having the biggest impact on the emission of carbon and the negative impact on greenhouse gases.

One of the critical technologies, perhaps the most significant technology that's been raised on coal has been carbon capture and storage. Yet, as we've had discussions with representatives of the industry and in academia as well, one of the issues that gets pointed out is this isn't going to be commercialized in any significant way unless there are major pilot projects that allow for better understanding of the risks and liabilities.

Then the industry comes back and says, we're not going to undertake any pilot projects on a major scale until there's legislation that absolves us from liability and risk because this is a global public good. Why should we absorb the risk from this?

How do we break this deadlock and is it possible to get legislation that makes some of these larger pilot projects possible?

David, I'll come back to you on whether this is something which is viable to put into the policy dialogue with China.

SEN. LUGAR: It's certainly possible to get this legislatively, but you're absolutely right. The coal companies would say, even if we believe something of what you're saying, until we know the rules of the game -- that is what the federal construct is going to be -- we're not going to move. This is very, very expensive. We're wrapped around a limb all by ourselves, and we want to know what our competitors are going to do and, furthermore, what other countries are going to do.

Well, that's a tall order before you take any action. At the beginning, we're going to have to offer incentives both to help with the research as well as to impel people to make fundamental changes, which will be very tough to do.

Now, if we're successful here, it will be even tougher, I think, in negotiations with the Chinese. Despite their diplomatic thoughts that they may be helpful with regard to climate change and may think about this, I don't know the number of coal-fired plants that have been developed in China this year, but it's a big figure.

MR. PASCUAL: It's two a week.

SEN. LUGAR: Yes, two a week. Well, a hundred.

So, even as we're all talking about climate change, this is happening. This is sort of the point of my message today which I'm certain all of you accept in a sense, that it's well and good to have discussion about it but without action and steps in which somebody actually does something it, why, the time is ticking away. The trend line won't get you there.

For the moment, it's not clear. I've not talked to that many Chinese statesmen, they don't come through that frequently, that are interested in this issue.

But some, if I could translate very liberally, would say: Get real. Here, we have a situation in which people are finally coming from the rural areas by the hundreds of millions for the first time, they might have a heated apartment or dwelling. For the first time, they might drive a motorcycle.

In other words, the change in life transformed for a huge percentage of the population of the earth requires huge energy, and it's wasteful energy. It is not directed specifically to what they're doing.

So, here we come along and say, too bad, but climate change is here, repent and so forth.

They're saying, in essence, we're glad to work with you on projects,

and we want to do a little bit of nuclear here and there and so forth. All things considered, that's not a bad idea. But, in the meanwhile, two coal-fired plants a week, so we finally heat up our country and get our country going.

I don't know whether our diplomacy ever will be sufficient to try to bring the scope of this, but we better try and very rapidly because the growth that I cited -- 16 percent increase in the use of energy in one year -- is huge with that percentage of the population in the world, and China is not alone really in that trend.

MR. PASCUAL: David, do you want to add?

MR. SANDALOW: Yes. There's no more urgent problem. This is the point of the spear when it comes to solving global warming. My own view is that looking at it just in terms of coal is a little bit too narrow.

China's energy inefficiency today is astounding, and this is something that they talk about. I was told when I was there last month that they use three times more amount of energy per dollar of GDP than India, not just developed countries, but they have enormous opportunities to dramatically improve their energy efficiency, thereby helping to speed economic growth while cutting back on coal usage. And so, I would start by looking at energy efficiency.

Then also look at renewable energy opportunities that could

displace coal. The big one here is solar thermal technology which is not photovoltaic cells but these big collectors in the desert, which have enormous potential for producing base load power at very cheap prices, about 5 to 8 cents a kilowatt hour in desert areas. China can get a lot out of that.

Then coal, as well, is absolutely critical. Here, we need enormous energy and money going into research on how to take the waste streams from existing coal plants and get them pumped underground. It's a big challenge, but there's no more urgent one.

MR. PASCUAL: Unfortunately, one last question I can ask just over here.

QUESTIONER: Senator Lugar, you told us what you want the next President to do, but we gotta get there first. I wondered if you could tell us if you see anybody in the field in either party who has the passion and the courage to do what you ask them to do.

SEN. LUGAR: Sylvia, I would like to say all of the above because one of them is likely to be President and, that person, I look forward to supporting and working with and trying to do the best we can.

I think it's fair to say that for the moment, most of the candidates have been given questionnaires by interest groups. I think the *New York Times* culled from this a chart one day in which they asked are you sort of

generally in favor of this or that, and people entered yes or no or so forth without having to make extensive essays about what they felt and how you get there.

In part, it's because the questioners in the debates have not really centered on energy issues. Occasionally, they bob up. Occasionally, they're volunteered by candidates.

For the moment, in their heart of hearts, I don't know the commitment of the candidates, and therefore I'm not going to be drawn into endorsement of anybody today on that basis.

But the purpose of my speech is to say this, I think, is the issue. I would like to hear a lot more. I think the American people would like to hear a lot more. But, even if we don't, somebody is going to be elected, and this person is going to have this situation which won't go away and which I believe, without solution, will undermine any discussion of Medicare, social security, balancing the budget, our foreign policy objectives. You may want to talk about everything else in the world, but unless you get back to this at the heart of it, you're not likely to have much success nor will the American people prosper.

MR. PASCUAL: Senator, we unequivocally and in a nonpartisan way are endorsing you and your message. What you've really laid out here is a combination of vision but practicality and also the importance of

leadership, and it's something that is going to be critical for the net President. I hope these are issues on which the current President might show a little bit of leadership as well before he leaves office.

We thank you for leading the way and shining light on that path forward because you've really been a critical force in helping us understand both these issues and the fact that there can be solutions if we put our minds to it and we unleash the incentives and the kind of ingenuity that we have in the United States to tackle these issues for the future. So, thank you very much.

SEN. LUGAR: Thank you.

(Applause.)

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