

NATIONAL PRESS CLUB LUNCHEON WITH DR. SHIRLEY ANN JACKSON

SUBJECT: 100-DAY ENERGY ACTION PLAN FOR THE NEXT ADMINISTRATION AND CONGRESS

MODERATOR: SYLVIA SMITH, PRESIDENT, NATIONAL PRESS CLUB

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MS. SMITH: (Sounds gavel.) Good afternoon. My name is Sylvia Smith. I'm the Washington editor of the Ft. Wayne *Journal Gazette* and president of the National Press Club.

We're the world's leading organization for journalists. And on behalf of our 3,500 members worldwide, I would like to welcome our guests today. Thank you for coming. I'd also like to welcome those of you who are watching on C-Span or listening on XM Satellite Radio.

We're celebrating our 100th anniversary this year, and have rededicated ourselves, a commitment to the future of journalism through informative programming, journalism education, and a dedication to the free press worldwide.

For more information about the Press Club, or to blog about today's event, please visit our website at www.press.org. We're looking forward to today's speech. And I also will ask as many questions from the audience as time permits. Please hold your applause during the speech so that we have as much time for questions as possible.

I'd also like to explain that if you do hear applause, it may be from guests and members of the general public who attend our event, not necessarily from the working press.

I'd now like to introduce our head table and ask them to stand briefly when their names are called. From your right, Dan Rutherford, communications coordinator of Teamsters; Faith Bremner of Gannett News Service; Dan Berman of *Environment & Energy Daily*, the editor of that; Deborah Wince-Smith, president of the Council on Competitiveness and a guess of our speaker.

And skipping over the podium, Melissa Charbonneau, vice chairwoman of the speakers committee; and we'll skip over our speaker for just a minute; Donna Leinwand, vice president of the Press Club and a speakers committee member who organized today's event. Thank you very much Donna.

Michael Langford, national president of the Utility Workers Union of America, and a guest of the speaker. Thanks for coming. Bill Loveless, chief editor of *Inside Energy*, *Platts*; and Mark Wojno senior assistant editor of *Kiplinger Magazine*. Thank you very much for coming, all of you. (Applause.)

Public opinion polls this year find Americans far more concerned about energy and gas prices, even surpassing healthcare as a top concern. With oil at a hundred dollars a barrel, the country appears receptive to focusing on America's energy situation. Whether it's more corn turned into ethanol, more windmills, or more nuclear power plants, Americans appear receptive to almost anything homegrown. There's less of a consensus about drilling U.S. shores, of course.

At the Republican convention, a ubiquitous chant was, "Drill baby, drill." And when have we heard that at a political convention? But Barack Obama calls drilling a stopgap measure, not a long-term solution. That disagreement aside, it's clear from the campaign rhetoric that whomever is in the Oval Office next year plans to make energy independence a priority. And some would say that's none too soon.

Energy consumption worldwide has doubled in the past 40 years given the global population growth rate in another 40 years. The broad strokes of the presidential candidates' intentions will have to become more detailed plans. And that's where today's speaker comes in.

Among her other responsibilities, Shirley Ann Jackson is the vice-chairwoman of the Council of Competitiveness, where she co-chairs the Energy Security Innovation and Sustainability Initiative. The group has a 100-day action plan for President McCain or President Obama. The council says this plan

will help the U.S. achieve energy security and stimulate energy innovation without sacrificing the environment.

Jackson says the President should issue a national call to action to address energy challenges, saying that the energy security is the space race of this millennium. About a year ago, as gas prices were rising, the Council began developing its plan with input from more than 200 CEOs, university presidents, labor leaders, and energy experts. And I'd like to see all them in a room.

Dr. Jackson is uniquely positioned to weigh in on energy policy. The National Science Board last year, in awarding her the Vannevar Bush Award, cited Jackson's lifetime of achievements in scientific research, education, and senior statesman-like contributions to public policy. And when they said lifetime, they weren't kidding.

Jackson's scientific research began at an early age. As a youngster in Washington, D.C., she kept bees under the porch and observed how they reacted to changes in diet and environment. Her interest in science and math led her to become an MIT-educated physicist, first at Bell Labs, and then at Rutgers University. Now the president of Rensselaer Polytechnic Institute, New York, Jackson is the former chairman of the U.S. Nuclear Regulatory Commission, and president of the Association for the Advancement of Science.

She serves on the board of the Smithsonian Institution, and as a director for seven publicly-traded boards, including IBM, FedEx, and Marathon Oil. She's also the former director of a New Jersey utility company that operates nuclear power plants.

Please join me in welcoming to the National Press Club podium, Dr. Shirley Ann Jackson. (Applause.)

DR. SHIRLEY ANN JACKSON: Thank you, Ms. Smith, for that warm introduction. Good afternoon. When a great nation faces great challenge, its full capacity and talent are called into play. We confront such a time now. We are caught as never before in a double grip – the need for national and global energy security, and legitimate alarm over our planet's climate change.

Issues that ensue from these twin realities, complex geopolitical and geostrategic challenges, unprecedented wealth transfer from one group of nations to another, the profusion of investment choices before us, require vision, careful analysis, coherent thinking, and finally, action.

The question is, what action? A year ago, the Council on Competitiveness set out to find answers through its Energy, Security, Innovation, and

Sustainability Initiative. My colleagues in leading this effort are James W. Owens, chairman and chief executive officer of Caterpillar, and Mike Langford, national president of the Utility Workers Union of America.

Working with others in industry, academia, and labor, we have used the ESIS Initiative, as we call it, to examine in a series of progressive dialogues the implications of today's energy challenges for American competitiveness and the strength of our economy.

Two previous ESIS reports based on the dialogue underscore the lack of cohesive action in U.S. industry and government, the woeful under-investment in improving U.S. energy efficiency, and the urgent need for bold leadership and decisive action.

Today, the ESIS leadership is releasing an action plan for the first 100 days of the new administration. It reflects the thinking of a broad-based, multi-sector coalition of industry, labor, and academic leaders with significant participation from high level government, energy, and economics experts.

We will continue this initiative through early next year, holding regional dialogues, then releasing additional reports. Next spring, we will issue a complete comprehensive report. The action plan we released today is a beginning, and allows us to leverage the political capital afforded a new administration in its first 100 days.

Before I lay out the action plan steps, we must understand the broader context. On a worldwide scale, a seismic restructuring of the global energy system is underway. New energy markets are providing opportunity and options for new players. New major oil and gas suppliers are changing the terms of reference for traditional energy behemoths. Oil generated wealth and other energy-related economic factors are influencing the state of play in global financial markets. Nations are realigning, shifting old alliances. Corporations are adjusting priorities, changing business practices and investing to secure market opportunity.

Climate change mitigation is stimulating investments in new energy sources, new technologies, and driving new trading schemes. International energy markets, trading schemes, and realignment of nations are emerging because energy consumption is rising exponentially, driven by population growth, swiftly developing economies, improving global living standards, and the burgeoning use of ever more energy dependent technology.

It is not difficult to cite jaw-dropping illustrations of growth in energy consumption. For example, each year for the past few years, China has added

60,000 to 90,000 megawatts of electrical generating capacity, roughly the equivalent of the throughput of the entire electrical grid of England.

Consumption of nearly every major energy source is up markedly. If current trends continue, humans will use more energy over the next 50 years than in all of previously recorded history. Fossil-based energy sources, including coal, will remain a dominant part of the primary energy mix. In fact, because of demand, the market clearing price of coal, heretofore always plentiful and reliable, has doubled over the past year. We may only speculate on the effect of this growth in demand on the state of our planet's environmental health.

The original seven sisters, which became four after mergers in the 1990s, Western companies that controlled Middle East oil after World War II, are losing prominence to a new set of seven – Saudi Aramco, Russia's Gazprom, China's CNPC, NIOC of Iran, Venezuela's PDVSA, Brazil's Petrobras, and Petronas of Malaysia controlled almost a third of the world's oil and gas production, and more than a third of its total reserves. The remaining four old sisters produce about 10% of the world's oil and gas, and hold just 3% of reserves.

The International Energy Agency estimates that 90% of new production over the next four decades will come from developing countries, a significant shift from the past 30 years when 40% came from industrialized nations. This swing in fortunes is leading supply countries and their national oil companies to alter contract terms with traditional international oil and gas companies for greater ownership, greater operation of assets, and greater revenue share.

Increasingly they seek as well to develop their own integrated supply chains, from exploration and production to refining, marketing, and transportation.

Energy supply continues to worry European Union countries which import 80% of their oil and gas. Russia uses its oil and gas abundance to lock up deals with more and more European countries, even as many of them fret that Russia is using its dominant energy position as a political tool.

As a consequence, the EU is developing strategies for new and renewable energy sources, and for energy efficiency, both to assure supply through diversification and to mitigate climate change. Many speculate that Russia's recent invasion of Georgia was spurred by Georgia's role in developing energy roots to supply EU countries with oil and gas from non-Russian sources, reducing their dependence on Russian gas and oil.

China, too, has been on a worldwide march to lock up energy supplies and other resources such as minerals and heavy metals. We see this especially in

Africa where China trades infrastructure development, sometimes education, and always embassy presence and diplomatic recognition for such access.

Worldwide, the private sector is making large capital investments in renewable energy technologies. The United Nations environment program found that investment capital flowing into sustainable energy, especially wind, solar, and biofuels more than doubled in just two years from \$28 billion dollars in 2004, to \$71 billion dollars in 2006. The International Energy Agency estimates that as much as \$16 trillion dollars will be invested in the energy sector through 2030.

All of this deserves a more complete examination than I can give today. But even within this limited context, it is clear that it is time to move beyond the term energy independence. The global trading system, global dispersion of energy resources, globally linked energy and other supply chains, and the effects of natural disasters, terrorism or war, all tell us that we are globally interlinked with regard to energy and our overall economy.

Our focus then must be on energy security with as much national energy self-sufficiency as we can muster. The United States must shape more comprehensive national energy goals and strategies, taking greater account of the global energy system restructuring, its impact on energy markets, and on our foreign policy.

Of course our national energy challenge is not new. In 1973, President Nixon called for energy independence in response to an OPEC oil embargo. Project Independence lowered highway speeds, converted power plants to coal, prompted completion of the Trans-Alaska Pipeline, and diverted Federal highway construction funds to mass transit. Sound familiar?

The Ford Administration attempted to secure our national oil supply. The Strategic Petroleum Reserve was the result. While President Carter was mocked for characterizing the energy problem as the moral equivalent of war, his administration produced a broad-based national energy plan stressing conservation, renewable energy, and research.

Although the plan soon lost momentum, some proposals such as standards for building appliance and automobile fleet efficiency were enacted and have endured to our benefit. This remains, however, an area ripe for additional enhancements.

This energy policy advance and retreat has been repeated in the decades since. Every few years, an event — the Iraqi invasion of Kuwait, brownouts in California, drill rig and refinery damage from hurricane Katrina, skyrocketing prices at the gasoline pump — stirs attention, trepidation, and limited action.

Meanwhile the U.S. has gone from importing about one-third of our oil in 1973 to nearly three-quarters today, for which we paid out \$327 billion dollars last year. And that is before the price of oil doubled over 2007 levels with significant economic consequence.

This is the briefest snapshot of a highly complex picture. It will require a correspondingly complex response. And this time, we must get it right. To jumpstart U.S. action toward a comprehensive energy security roadmap, the Council on Competitiveness has extracted from its ESIS work a first 100 days action agenda for the 44th President of The United States and the new Congress.

Some of the key elements are these. First, the new President must mandate that Federal procurement for goods, services, new construction and facilities retrofit lead the market toward higher energy efficiency standards with concomitant reduction of carbon load. Such leadership by example and requirement will encourage the private sector in this direction.

The next administration must encourage the development and utilization of all energy sources in a sustainable way by equalizing energy source subsidies and by creating incentives for discovery and deployment of new energy sources. One means to accomplish this is to direct the Office of Management and Budget to create a cross-governmental task group to identify barriers to various sources of energy production and to issue a presidential executive order, or to propose legislation as necessary to construct a consistent investment framework for clean energy development.

This framework must require a full life cycle analysis, including cost and environmental impact for each energy alternative, as well as regulatory requirements, legal liabilities, tax incentives, accelerated depreciation for outmoded assets, and market distortion from global trade subsidies and tariffs.

The next administration must ramp up investment in energy research, development, and commercialization. This means at least tripling (some say more) the current Federal investment in basic and applied energy research and development, creating public/private partnerships with baseline Federal funding to be matched by state and private sector investments, to create regionally-based research and development test beds and large-scale commercial pilots for new energy technologies. It means expanding Federal programs and creating new initiatives that provide financing for clean energy startup businesses, support for existing small and medium-sized businesses in the development and deployment of clean energy technologies, and funding for pre-commercialization of technologies for clean energy.

So the next administration should establish a \$200 billion dollar national clean energy bank, modeled on the U.S. Export/Import Bank and the Overseas Private Investment Corporation, OPIC, to provide long-term financing for private sector investment in sustainable energy solutions that reduce, avoid, or sequester carbon for their deployment to market and for development of supporting infrastructure.

This approach recognizes the crucial role of private sector demand and action in driving energy system transformation, a role largely unrecognized and unaddressed in previous policy initiatives. These measures begin to address our national need for redundancy of supply and diversity of source, to provide protection against supply disruption, whether from natural disaster or geopolitical instability, and against price volatility.

These are pathways to greater energy self-sufficiency. They also offer an entry point for linking optimum source to sector of use, in other words, for thinking strategically about how each sector is best matched to its supply source for efficiency, sustainability, reliability, and cost effectiveness.

For example, both presidential candidates have advocated greater use of plug-in hybrid and electric vehicles. This would reduce carbon emissions from the transportation sector. But we will need to account for the correspondingly greater burden on the electricity generation and transmission sectors, as well as the potential need for new sources for generation.

The new President must mobilize an energy workforce, a subset of the invaluable science and engineering professionals who comprise our national innovation engine by creating a \$300 million dollar clean energy workforce readiness program, augmented with state and private sector funding.

This would foster partnerships with the energy industry, universities, community colleges, workforce boards, technical schools, labor unions, and the U.S. military. Within the context of providing support for advanced study across a range of fields, creating competitive portable undergraduate and graduate fellowships for study in energy-related disciplines for American citizens should be a special focus.

This is a necessary part of maintaining and enhancing our national capacity for innovation by developing our own talent, including the underrepresented majority — women and underrepresented minorities — while continuing to attract and retain exquisite talent from abroad.

The new President must begin the creation of a national electrical transmission superhighway by engaging governors and state regulatory authorities

to focus on the current regulation oversight patchwork for transmission within different states and interconnection between states. To develop better interoperability standards for the national grid, the President should competitively incent the creation of consortia of national laboratories, universities, and corporations to model and simulate the characteristics of an intelligent, self-healing electrical grid with the ability to connect multiple new energy sources and devices to the system.

These steps begin to address our need, to renew and update our existing national grid, and to invest in the full spectrum of sound infrastructure for energy generation, transmission, and distribution, with the necessary regulatory and operational protocols to assure the safe, secure, and reliable performance of refineries, pipelines, power plants, and other facilities.

Again, this is a brief summary. The full text of the action plan for the first 100 days of the new administration is available here today. The priorities outlined here are a subset of a more complete report which the Council on Competitiveness will release next year. This first 100 days agenda is an initial step to address some of the critical aspects of the energy crisis we face. The action agenda would start us toward a comprehensive national energy security roadmap, one that must be globally linked and globally aware, and as environmentally benign as possible.

To chart such a roadmap will require the full weight and leadership of the nation's chief executive, strong, coordinated leadership in the Congress, and at state levels. We invite the next administration within its first 100 days to draw on the resources and work of the Council on Competitiveness and other coalitions of leaders across multiple sectors concerned about our energy future.

The good news is that energy has begun to garner focus that it is imperative that focus become action. We are a great nation. We have immense initiative, strong financial capacity, creativity, exceptional talent, strong capital markets in spite of what we've seen, and a shared history of uniting around difficult and complex challenges. We split the atom. We put man on the moon. Energy security is the greatest challenge and the greatest opportunity of our time. A national call to action will ignite our collective imagination, spark a new era of innovation, stimulate our economy, open new markets, unleash our national potential, and enhance our economic and national security.

But we must begin. The next President must send a clear signal in the first 100 days that will move us from rhetoric to reality. Thank you very much.
(Applause.)

MS. SMITH: On your last point, is there one thing that the next President could do to signal to the country that he will make this a major, dominant initiative in the first 100 days? What would that one symbolic thing be?

MS. JACKSON: Well, many people say (and I agree) that energy use avoided is energy gained. Federal procurement policy is something the Federal government can do straightaway. And to use that to drive greater efficiency standards for those who wish to do business with the government is an important thing. But fundamentally, all of these things are actionable within the first 100 days.

MS. SMITH: So on that point, the government could say, “We’re only dealing with businesses that need some energy efficiency level.” Give us some other examples, some concrete examples that The White House could direct in that regard.

MS. JACKSON: Well, you know, the government builds buildings. Contractors could be asked to meet certain building efficiency standards. The government procures vehicles. One can use that to extract greater efficiency standards. Such standards can be put into place for retrofitting existing buildings. These are some of the things that are obvious and could be done.

MS. SMITH: So if the reporters in the room were going to be interviewing the presidential candidates, what three questions should they say, “Will you do this, this, and this? Will you directly order in the first 100 days that all U.S. fleets be hybrid cars or” [simultaneous conversation]--

MS. JACKSON: ...(inaudible) question.

MS. SMITH: Okay. What are two others?

MS. JACKSON: Are you going to level the playing field in a true way for the development of energy from multiple sources? Are you going to make the investments that really need to be made in research and development and pre-commercialization of technology and the development of people that must be made? You see? Because then, the end, it’s not about one silver bullet. It is about developing a panoply of solutions.

And the last time I checked, innovation is at the root of it. And the last time I checked, people are at the root of innovation.

MS. SMITH: When you say ‘level the playing field’ are you talking about the subsidies that are provided for ethanol? Or are you talking about something else? Could be a little more explicit on that?

MS. JACKSON: Well, you know, there are subsidies that are inherently in any number of different arenas. There are loan guarantees that are provided in some areas and not others. And so without picking out a given one to [simultaneous conversation]--

MS. SMITH: ...(inaudible) (Laughter.)

MS. JACKSON: --to point a finger at-- I'll pick one that I think is an important part of the energy mix, which comes from my own background. And that's nuclear power. I think nuclear power has to be a necessary part of the energy base. But nuclear power, for reasons that actually people need to think more about, has certain kinds of insurance and loan guarantees built into it. Not all people who are looking at other sources of energy, like that.

And so we have to have an open discussion about where things are. Certainly biofuels have an inherent subsidy built into them. But I think the real point here-- And of course not being a politician but a mild-mannered physicist for *The Daily Planet* who is a university president and vice chair of the Council on Competitiveness, I say that, let's not just look for the easy silver bullet. But let's get started on those things that are easiest to do, which I've already discussed.

MS. SMITH: We have several questioners who've asked about nuclear power along these lines. Why haven't Americans embraced nuclear power as Europeans and Canadians have done? And what should be done to change nuclear power's image?

MS. JACKSON: Well, other countries in many ways have had less options, fewer options than the U.S. has had, less opportunity. I mentioned the fact that Europe imports, you know, 80% of its oil and gas. Now, we import 75% of our oil. But we do have an abundance of various kinds of resources.

But with respect to nuclear power specifically, I think some of it is historical. Some of it is economic and some of it has to do with lessons that other countries have learned from us. So let us talk about that. The historical part is that people are very sensitive about nuclear power. I've said nuclear people feel so strongly about it, it's like it's a social issue. And maybe it is.

But we have had the accident at Three Mile Island. And there have been-- There was the accident at Chernobyl Nuclear Plant, although they were very different. But those in the nuclear business, at least in the nuclear regulatory business, always say that a nuclear accident anywhere is a nuclear accident everywhere, because of its effect on public consciousness.

People worry about proliferation concerns that have to do with the fuel cycle. But more importantly (which actually gets overlooked) is that the economics of how nuclear power really got going in this country and the cost that went into building a lot of the early plants really puts the nuclear industry on an untenable footing.

Now, I'm happy to say that the safety and the operational performance of nuclear power plants in this country today is such that nuclear, at least on an operational basis, is very competitive with any of the cheaper power sources. And so in the end, I think that nuclear power is and will be on the horizon. And in fact the NRC, the Nuclear Regulatory Commission, is reviewing applications for combined construction and operating licenses for 21 nuclear power reactors.

MS. SMITH: There are quite a few other nuclear-related questions. But there are a couple areas that people want to get into. One question is, why include controversial energy sources such as coal and nuclear in the list of sources that should be developed? They're so controversial with environmental groups.

And sort of as a corollary to that, not much happens in Federal government without consensus. And yet you called for bold and dramatic action. Are those absolutely mutually exclusive.

MS. JACKSON: Let me answer the last part of your question first. Having been a government official and having run a Federal agency, no, I do not believe that consensus building and bold action are inconsistent. I think one has to lay out a bold idea and bring people together to think about what it means and how it might be implemented.

You know, the question of, what is a controversial energy source and what is not, is interesting. Because 53% of our electrical generation in this country today is from coal power. Parenthetically, 20% is from nuclear. So that means that nearly 75% of our electrical generation is from these controversial sources. And one person's controversy is another person's solution.

Nuclear certainly has much to commend it in terms of mitigation of carbon load in the atmosphere. And not everybody wants wind farms where they are. But we know that wind and other renewable sources of energy have to part of the picture.

MS. SMITH: Maybe you could show us how that kind of consensus can be reached or overcome with an illustration of some controversial or bold recommendations that perhaps members of your Competitiveness Council didn't agree on. I assume there might be some.

MS. JACKSON: Well, we agree on so much. And I think we've laid out a consensus document that actually covers a broad range. And the very fact that the document says, "Let us consider the use and best utilization of all energy sources in as an environmentally benign way as possible"-- And that then include nuclear. It includes wind and solar. And it includes clean coal. And so I'd say to you, that in itself is the inherent example of how people can come together.

MS. SMITH: Questioner says, if nuclear power is really going to be part of the next energy plan, what can be done about the waste problem? Do you think Yucca Mountain will ever get built? And can there be a nuclear energy program without something like Yucca Mountain?

MS. JACKSON: Well I think the correct statement is that if there is nuclear power generation based on fission, nuclear cycle, there will be nuclear waste, what we call high level nuclear waste generation. And so the future of nuclear power is linked to the ability to, what people refer to as, to close the fuel cycle. And that means that something has to be done with the waste. We generate about 2,000 metric tons of spent nuclear fuel per year in this country, worldwide about 10,000. Yucca Mountain is sized to hold 70,000. But we already have 50,000. And that includes of course military high level nuclear waste.

And so the answer is ultimately no. But the NRC does what it calls a waste confidence decision that it revisits periodically, and has said repeatedly that, at least for now, nuclear fuel can safely be stored both onsite in spent fuel pools, but more importantly, in dry casks onsite, and for at least 100 years. And I hope that within that period of time, we have the opportunity, but in a much shorter period of time, to come to closure on these issues of closing the fuel cycle, whether it's through a deep geologic repository for spent nuclear fuel, or through some other form of reprocessing or closing the fuel cycle.

And I say that knowing that reprocessing is a no-no. But in fact, the Department of Energy has the GNEP program, the Global Nuclear Energy Partnership, with a number of other advanced nuclear countries, looking at questions of advanced fuel cycles, looking at reactors that can-- and fuel design whether the fuel can last for much longer periods of time, sort of avoiding having to pile up the nuclear spent fuel. So all of these things are in play as we speak.

MS. SMITH: Do you agree with the NRC's assessment that the spent fuel can safely be stored onsite for that long a period of time? Or is that simply an answer to a political problem?

MS. JACKSON: Yes. I believe that it can be. We actually-- constantly revisited the waste confidence decision when I was chairman, even though we

didn't have to do that. I think of course that has a presupposition that things-- that the fuel is properly stored and that there are the appropriate safeguards that surround that storage.

MS. SMITH: America's electrical grid dates from the 1940s, this questioner says. What would need to be done to the existing infrastructure to make it more efficient and able to handle new sources of energy?

MS. JACKSON: Well in the short, intermediate term, we actually need to increase the density of high voltage transmission to be able to have less congestion and fewer bottlenecks in the national grid. Secondly, we need to increase the ability for states to interconnect with other states. Because there are states that have very shallow and thin connectivity to others. And so more power could theoretically get into certain states from other places where there's generation if the interconnectivity. But there have to be better and more connected interoperability standards for that.

So we have to beef up the existing grid and we have to improve the interoperability. But on the longer term, as we look at the creation of a broader range of fuel sources, including renewables, as well as how more energy efficient and even electronically controlled devices get added to regional and the national grid, then we have to think about this issue of the smart grid, the self-healing grid, the one that can accommodate itself. And that's both an engineering, a computer science, a material science, and so on linked challenge.

MS. SMITH: And the interoperability, is that something that only the Federal government can step in to require? Or is that something that, left to their own devices, utility companies and states could make happen?

MS. JACKSON: Typically FERC has the responsibility for long-range (the Federal Energy Regulatory Commission) the long-range transmission, national transmission system. The distribution within states tend to fall under state authorities and utility commissions and so forth. And so obviously the Federal government has to work with the governors of the states, as well as with state regulatory and other authorities in order to work through these issues of interoperability and how they affect the overall national transmission system.

MS. SMITH: Questioner says, do you endorse a carbon tax? Do you endorse a ten-year goal of energy independence or of carbon neutrality? And then I'd also like to ask, what do you think of carbon trading?

MS. JACKSON: Well, I think where the one is talking about a carbon tax or a cap-and-trade or some other kind of trading scheme, one is looking at stabilizing initially the carbon load, and ultimately reducing it. Because the

carbon tax has, at its root, costing, providing a cost to carbon so that businesses and other entities can figure that into their planning. And if that cost is high enough, then people will look to other alternatives.

Cap-and-trade systems look to build a combination of some actual regulatory limit on the carbon emission with the ability to have companies trade those, trade emissions credits, but over time ratcheting those caps down. So both of them, in the end, have the same goal of reducing the carbon load.

MS. SMITH: What do you think of the idea of taking the entire amount of the U.S. Ag subsidies and saying that anybody who generates enough power on their own land could receive a subsidy, like, say, by a windmill that operates your farm and then turns some back to the grid?

MS. JACKSON: Well in fact, things like that happen now, in the sense that if-- There are individuals or companies and other entities that actually generate some of their own electricity. And at times, if they have an excess, sell it back to the grid. And so they, in that sense, I don't know if you'd call it a subsidy, but they actually are able to sell it into the broader electrical network. In order for that to be accommodated to a greater degree and on a broad basis, it requires these investments in the infrastructure that I talked about.

MS. SMITH: How should Americans behave on an individual basis to work toward energy security? And should developers in cities change the way they build their buildings and plan their land use?

MS. JACKSON: Yes. You know, there's an area called built ecology, which we happen to have a focus in at Rensselaer Polytechnic Institute. And it focuses on the issue of smart buildings — what kinds of materials are used for cladding, the responsibility of that cladding to various environmental conditions, how light and shading and illumination are all blended together in the design of buildings, as well as looking at how one can use more renewable sources.

Obviously smartness about conservation, about putting more controls in existing buildings to cut down on unneeded energy draw, all of these things are possible. But you know what? We have a presidential campaign going on. So we have the opportunity to query the candidates-- okay?-- over the next 60 days to ask them if they're going to act on the Council's action plan.

MS. SMITH: Speaking of the Council, it's a largely business-oriented organization. What has it done to educate and incentivize alternative energy use among its corporate members?

MS. JACKSON: Well, it's done a lot. I mean, first of all, the initiative itself has brought together, as we indicated, representatives from over 200 organizations, many, many of them heavily from the corporate sector. And the very process of the initiative and talking about what is possible helps to do that. But frankly, you might be amazed at the degree to which the private sector itself and corporations themselves are taking steps on their own, whether it applies to supply chain and supply chain economics and environmental impact, how they power their various operations, powering their corporate fleets with different kinds of vehicles, hybrid, compressed natural gas, and so on, as well as making investments themselves in new and different energy alternatives.

MS. SMITH: There indeed is a lot of that going on. How come we see so few E-85 tanks in the country?

MS. JACKSON: E-85 is one thing. And as I said at the outset, this is a complex issue. And it requires a complexity of response that most people don't want to deal with. And interestingly enough, I think people are focusing very heavily on the use of renewables and other kinds of alternatives as part of the solution.

MS. SMITH: Question sent in was, Americans could certainly save millions of gallons of gas by telecommuting. Your Council made up of dozens of corporate CEOs, how amenable are they to that idea? And how many of them are already promoting that type of conservation at their companies?

MS. JACKSON: I can't give you a specific number in terms of how many, but we can provide that for you. But in fact, I would say that many of the corporations are very much supporting telecommuting. They're also supporting removing energy and energy costs from their supply chains. They are looking at alternative ways, as I've said, to power their own operations. And many of them are quite amenable to telecommuting and people working from home. Even universities are doing it.

MS. SMITH: So tell us about RPI's fleet.

MS. JACKSON: Well, we have a fleet that, you know, ranges from conventional power sources to electrical. We also have turbine power on the campus. We have solar power. We're retrofitting-- You know, Rensselaer is almost 200 years-old. It was founded in 1824. So universities have very old physical plants. We tend not to tear them down. It's very expensive.

And so our focus is on how we retrofit facilities. And then as we build new ones, we build them for LEED certification, even our research facilities.

MS. SMITH: If American companies implement some of these tougher fuel and environmental standards that will bring us energy efficiency in the long-run, how will the companies stay competitive with foreign companies in the short-run?

MS. JACKSON: Well it turns out that a number of countries and companies that emanate from other countries already are moving down these pathways. So they're making investments themselves. You know, I live in upstate New York. And upstate New York is home to a number of wind turbines. The companies that are building those wind turbines heavily are non-U.S. based companies. And so I think with making the proper investment, with innovation and drawing on our talent, I think given where the world is going and the state of play-- And frankly, you know, the energy costs for the use of conventional fuels, at least in the way we use them today, is driving up costs anyway.

MS. SMITH: Question says, if everyone is talking about renewables, why is Congress reluctant to pass an extension of the renewable tax credits that the solar, wind, and other sectors desperately need to stay competitive?

MS. JACKSON: I never answer questions about why Congress does or does not do certain things. (Laughter.)

MS. SMITH: How about a little speculation?

MS. JACKSON: Well, at the moment, Congress probably has other things on its mind with its members working to be reelected. But I do believe the following. I think the fact that energy and energy security have garnered as much attention as they have, the fact that you do have a broad-based consortia such as the Council on Competitiveness initiative, the fact that our economy and our citizens are suffering because of the run-up, particularly in petroleum-based products, really give the new administration, the next President and the next Congress essentially a mandate to do something, to get started, to take bold action, if they'll do that.

MS. SMITH: Question says, last year President Bush signed the Energy Independence and Security Act, which requires fuel producers to supply at least 36 billion gallons of renewable fuel in 2022 and establish a mandatory fuel economy standard of 35 miles an hour by 2020. Why isn't this sufficient? If this is what Congress arrived at, is there political will to do more?

MS. JACKSON: As I said, I can't speak to political will. But I can speak to opportunity and the potential mandate. It's interesting that the fuel economy standard of 35 miles per gallon by 2020 has been-- was built into this particular legislation. Now of course that's a corporate average fuel economy standard. But

you know that we already have car manufacturers advertising cars with differences from last year with their fuel efficiency already going from in the 20s to 35 and more. So in fact, the standard probably is already out of date.

MS. SMITH: Does America have-- You mentioned this a little bit, but the questioner I guess is hungry for a little more details. Does America have the scientists to conduct the research you describe? Does academia need to shift its research emphasis to meet these goals?

MS. JACKSON: Well, you know, this is something that I, on multiple fronts, have been concerned about for a number of years. And the truth of the matter is that, if you look at oil or petroleum engineering programs, and you look at geological science programs across the country, since about the mid-1980s these programs have dropped off the map, by on the order of sixty to seventy percent of the programs going away.

You have an aging energy workforce. And they're aging and coming up on retirement and beginning to retire, just at the time when we need them most, so just on that side. And in the end, in order for us to really have the actualization of all of these visions for various renewable energy sources will take a high degree of innovation. And that requires a talent that has not been focused in this area.

But a number of universities are building and have very strong programs of research focused on energy and the environment. We're one of them. But I could rattle off a large number of them. Nuclear engineering programs are experiencing a bit of a renaissance. The real challenge is finding the faculty to teach them. And so a number of energy companies as well are beginning to provide internships and financial support for students.

But, you know, it takes years to really educate and develop a high performing nuclear engineer or geoscientist. And that is why you hear many, many university presidents, even corporate leaders and others from multiple sectors, the Council itself, call for investing now and in a consistent way in the education of the next generation of scientists, but also to restore the level of funding, and even go beyond for research and "little D" development that we really need to both sustain programs in universities, educate the next generation of innovators, and make the breakthroughs that we need.

MS. SMITH: We're almost out of time. But before asking the last question, a couple things I wanted to remind our members of. Future speakers include tomorrow, Secretary Michael Chertoff of the Department of Homeland Security who will talk about all of the above, our strategy against terrorism.

On September 19th, we have the president of Columbia, president Uribe. On September 22nd, we have T. Boone Pickens, chairman of BP Capital Management. And this Saturday is the Press Club's 5K run/walk, which raises money for our scholarship fund.

And I would also like to present our speaker with the NPC centennial mug.

MS. JACKSON: Thank you.

MS. SMITH: And now for the last question. Your fondness of honeybees from your childhood, I wonder if you had any thoughts currently about the disappearance of honeybees, and whether that is a message to us that also involves the kinds of issues that you've brought to our attention today?

MS. JACKSON: Well, what Ms. Smith is talking about is what's called CCD. It stands for Colony Collapse Disorder, where bee colonies are just disappearing. In fact, the gentleman who works for me at the university has honeybees. And from one year to the next, the size of the colony dropped by two-thirds.

So people don't totally know whether there's some kind of a virus or if there's an environmental effect. It's interesting that you ask that because I gave the commencement address at the University of Rochester about a year ago, and I talked about this disorder. But the point I made was, that it is a bigger-- issue of greater import than most people believe. Because bees are very important for crosspollenization (sic) of crops. And so they're very important for our agriculture, not just for honey extraction.

But the solution has to come from very fundamental research, and how that translates into what we can do today. And so it plays into what we've been discussing in terms of the importance of scientific discovery and technological innovation and how it gets married with public policy to help provide solutions to what may appear to be challenges of mysterious origin and challenges of origins we understand, but whose solutions are mysteries today.

And so we have to have the research, the development, the people, the incentives, the unleashing of the private sector and government leadership to make everything come together. Thank you very much. (Applause.)

MS. SMITH: Dr. Jackson, thank you so much. Thank you very much, Dr. Jackson, for coming. I'd like to thank you for coming today. I'd also like to thank National Press Club staff members, Melinda Cooke, Pat Nelson, JoAnn

Booz and Howard Rothman for organizing today's lunch. And thanks to the Press Club Library for its research.

The video archive of today's luncheon is provided by the National Press Club Broadcast Operations Center. Many of our events are aired on XM Satellite Radio and available for free download on iTunes, as well as on our website. Non-members may purchase transcripts, audio and videotapes by calling 202.662.7598 or going to archives@Press.org. For more information about the Press Club, please go to our website at www.press.org.

Thank you very much and we're adjourned. (Gavel sounds.)

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