

**SPECIAL PRESENTATION**

**“AMERICA IN THE WORLD: FORGING A NEW VISION  
FOR FOREIGN POLICY AND INTERNATIONAL  
SECURITY.”**

**“ENERGY AND THE ENVIRONMENT”**

**MODERATED BY:**

**TOM DASCHLE, SENIOR FELLOW, CENTER FOR  
AMERICAN PROGRESS**

**FEATURED PANELISTS:**

**JOHN DEUTCH, FORMER CIA DIRECTOR**

**GEN. CHARLES WALD, FORMER DEPUTY COMMANDER,  
HEADQUARTERS U.S. EUROPEAN COMMAND**

**CATHY ZOI, CEO,  
ALLIANCE FOR CLIMATE PROTECTION**

**9:15 AM – 10:35 AM  
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SENATOR TOM DASCHLE: If I can have everyone's attention, we'll begin this part of the conference. Let me first introduce myself. I'm Tom Daschle. I'm a senior fellow at the Center for American Progress and delighted to be here with a very, very distinguished panel. After that stirring speech from Secretary Albright, it's certainly appropriate that we would begin our discussion part of the conference by talking about the national security implications of energy and climate change.

There was a day not long ago when the thought of using the concepts of energy, climate change, and national security in the same sentence was virtually unheard of, not to mention the subject of a panel discussion on national security with the former director of the CIA and a four star general. But today things have changed. There is almost a universal appreciation today of the circumstances we face from a national security perspective with regard to climate change. Just last week, it was a subject of the G8 discussions. The Congress is now on record in both the House and the Senate expressing the hope that we can better understand these implications, and the director of national intelligence agrees. And all for good reason: we find ourselves in greater competition for dwindling supplies of fossil fuel with India and China, we're told that more than 250 million people could be displaced over the course of the next four decades directly as a result of climate change. We're told that the implications of change as we look to crop production, especially rice, arguably the most substantial crop in the world today will diminish by 10 percent with every increase in climate of 1 percent.

Nothing struck me more personally than the map I saw in the *New York Times* a few months ago. It was a map that showed crop production over the course of the next four decades, and it indicated that we actually will see wheat crops in Alaska, and that while the state of South Dakota in particular is known as a wheat state with 3.3 million acres of wheat production last year alone, by the year 2050 – according to this story – it will be zero. I've always been known as an advocate for South Dakota family farmers, but when they get into the production of tropical fruits and vegetables, we're all in trouble. (Laughter.)

And of course, as we look to the repercussions internationally, one could argue the state that will, the country that will benefit the most geopolitically is probably Russia, in part because of the price of oil as a result of climate change, in part because their most abundant natural resource is natural gas, which will continue to increase in value, in part because they'll have additional sea lanes, and in part because their arable productive land will go up dramatically. Given what we witnessed just last week, that all ought to give us some pause.

As we watch the debate in the Senate about the implications for public policy and immigration, we also have to be concerned. Mexico and the Caribbean and all that could happen in terms of the challenges we face with regard to illegal immigration could be compounded and complicated as a result of the desertification of much of that land. So our challenges are extraordinary, and the implications for national security are only

beginning to be fully appreciated. Here to discuss all of those implications from a public policy perspective in my view are three of the most qualified people in the country today.

Starting on my immediate left, General Charles Wald was the deputy commander of the European Command. A highly decorated pilot, he was commander of the Ninth Air Force, as well as Central Command. I now have the good fortune to work with him at the center – at the Bipartisan Policy Center, and he’s the president of Chuck Wald and Associates. He’s one of the co-authors of “Climate Change and National Security,” a very distinguished report that was just released.

To his left, John Deutch, somebody with whom I’ve had the good fortune to work and know for many, many years. Professor since 1970 at MIT, the director of Central Intelligence from 1995 and ’96, before that, deputy secretary at the Department of Defense.

To his left, Cathy Zoi. Cathy is the CEO of the Alliance for Climate Change; before that, the executive director of an organization in Australia that worked on projects worldwide. She’s had a magnificent career in government, here in the United States in particular as the chief of staff for the Council on Environmental Quality – was the manager of the U.S. EPA and the founder of the Energy Star program. She’s written extensively, spoken around the world, and we are delighted that she could be with us here today.

Let me ask the first question of our panelists, and let me direct it first to John Deutch and General Wald. If we were to fashion a natural security strategy, should the United States reorient that strategy today to include energy and climate change? If so, why? And if we should, how would it be done? General Wald? Okay?

GENERAL CHARLES WALD: Thank you, Senator. I appreciate it. Pleased to be here and I was impressed with Secretary Albright’s speech, I have to tell you. But if you listen to what she said, I think she outlined why we have to have, I think, a new policy that looks at the world in a different way, but the reason I’m interested in this – I’m interested as an individual citizen, but as a military professional. In Europe, in 2003, General Jim Jones was the allied commander – the NATO commander in Europe and myself did a review of the strategy of why do we still have 115,000 U.S. troops in Europe and should we continue with that and what does the future look like, and in a good way, Iraq was good for us because we didn’t have any attention paid to us in Europe. It gave us time to do this without any meddling from Washington. But our conclusion was that there is a reason for the United States to be present in Europe, although at a much lower number of troops, and there are threats to Europe that the United States has a common interest in.

The 21<sup>st</sup> Century is not just a number that changed all of us, how we look at the world; it is physically a different place and it happened rapidly. I think the United States went through a period in 1990 or 1989 when the Berlin Wall fell where we went from a bipolar world to a unipolar world to a multilateral world in less than a decade, and it happened so fast, I think very few of us really recognized it. The post-Cold War, the

euphemism was, let's take a peace dividend. And I think most people in the Western world took a collective sigh of relief and sat back and said, as Francis Fukuyama said, it's the end of history and let's take advantage of it.

Unfortunately, we did not do a lot of work strategically to define what the new world is. The new world has new threats. Terrorism is easy to define from the standpoint of being a threat. It's hard to really define specifically. The proliferation of precursor elements for nuclear weapons is a problem. We consider that a huge problem in Europe. Energy dependency – energy security is a big problem, as well as failing states, and our definition of the new world was exactly that, and our feeling in Europe was Europe had to cope with that and start doing things of a preventive nature.

Now, there is still going to be a need for conventional military capabilities in the future, but there's a huge need for a more sophisticated approach to prevention of problems in the world – soft power, if you will – and the military needs to be part of that. Our new strategy needs to be inclusive. We need to be multilateral. We need friends in the world. The problems are too big.

One of our areas we worked with was Africa. We had 43 countries in Africa that we were involved with. Africa has huge potential and it has huge challenges. Africa has emerged as a strategic continent in the world, and the United States and the rest of the world is going to have to cope with that. We can either sit back and respond under crisis conditions, which very difficult, or we can start using preventive measures.

I think the new world we live in, Senator, is multilateral, it's sophisticated, it's going to require a new approach, interagency, and new friends in the world. And I'd end by saying, if I could draw out a architectural drawing of what I think our national policy should be, it would be, as Secretary Albright said, engaged in the world. It would be looking at new friends. It would be looking at a new alignment of friends. China, India, Brazil, Japan, Australia, South Korea, the European Union all have common interests in the standpoint of economic interests in the world and the stability will be a huge part of that. So I think now is the time, and I'd end by saying the only way this is going to happen in my belief – in the last four years I've traveled to 75 countries in our area is with U.S. leadership, and there's a yearning for that.

SEN. DASCHLE: Thank you.

John Deutch?

MR. JOHN DEUTCH: Thank you, Senator. We face really four energy challenges in our national security thinking. The first is dependence on oil and gas, the second is protection of our increasingly fragile energy infrastructure around the world, the third is nuclear proliferation, and the fourth is global warming. Why must global warming be considered a central part of our foreign and national security policy?

The first is that if we do not pay attention to global warming, the social and economic consequences for people around the world is going to be extremely severe. If

we don't act today, we are assuring that those costs are going to fall on people everywhere in the world in an unnecessary fashion, even in South Dakota. The third is global warming is one of the issues that stands between us and our closest allies, especially in Europe, and we must, as Madeleine Albright said in her remarks, work to move together with Europe.

And finally, the most dangerous security aspect of global warming from a foreign policy point of view is that it divides the developed world, the United States and other OECD countries, from the large, rapidly growing, emerging economies, especially China and India. If we are going to deal with global warming, if we are going to take measures that allow us to work with China rather than to work to get to confrontation with China, we must find ways to have a move together with China, India, Indonesia, Mexico, and Brazil to manage the global warming problem. It is not enough to say that that has to happen. There have to be specific policy measures put forward to assure that it does happen.

One of the matters I hope we can discuss on this panel are what are the specific policy measures which will bring the large, emerging economies together with the United States and others to go forward on combating the risks of climate change? Thank you.

SEN. DASCHLE: Thank you very much, John.

Let me advise the audience that we will shortly move to questions from the audience, so I hope you'll be thinking of questions that you may ask this distinguished group of panelists this morning.

Cathy Zoi, let me ask you, is there an opportunity to motivate Americans in particular on climate change with a further appreciation and understanding of the implications for national security?

MS. CATHY ZOI: Thanks, Senator. Well, The Alliance for Climate Protection is a brand new organization that I've just taken the reins of, and our central mission is to persuade the American people of the urgency in solvability of the climate crisis.

So we've just done some research, and it turns out that we have a bit of work to do on the link between climate change and national security, and I'll just tell you that we asked a bunch of questions of people, and we asked them how believable do you think this is, how relevant do you think this is, and how likely would this be to cause you to take action, and at the bottom of the list of maybe 25 or 30 messages that we asked about was a question that says – well, it was a statement – according to our top military strategists, climate change is going to become one of the top threats to our national security. A recent Pentagon report stated that climate change is a threat multiplier because of its destabilizing impacts on political systems and extremism. Despite its name, this is not just about the climate, it's about our safety and security. And at the moment, it doesn't test well. Now, that's okay, because there's a lot that can be done to connect to people.

We also found in the same set of research that during the course – and again, this is a national survey – during the course of the 20 minutes of this survey, there were a whole – 35 percent of the people moved up three index points during the course of the survey in terms of their belief in the urgency in solvability of the climate crisis. So the good news there is that the American people are persuadable. The bad news is that they're not there yet. So my organization is aiming to ignite people on all these issues.

Now, the messages that came at the top of the list – and, again, this is a subtle difference – are ones that relate to our overreliance on oil and gas, so there's a connection to feeling uncomfortable about overdependence, feeling vulnerable to fluctuating gasoline prices, to feeling like American technology is no longer at the lead. That's really fertile ground for right now. The link just a little bit further to national security, we have a bit of work to do.

SEN. DASCHLE: Speaking of a lot of work to do or a bit of work to do, it seems to me we suffer dramatically – and Secretary Albright addressed it this morning – from an image problem. Part of that image problem is driven by our reluctance to be engaged globally on climate change, and the national security implications for climate change not only from a U.S. perspective, but from a global perspective. I'd like to ask all three of our panelists: what would you suggest we do? What are the initial steps – the foundation upon which we could build better global interaction and a strategy internationally?

Cathy?

MS. ZOI: Leadership by example is absolutely first. It has got to be first. During the past few years that I've been participating in international dialogues, and I was living in Australia, it is impossible to get anywhere with the Indians and the Chinese and the Brazilians absent the United States taking meaningful, real action to reduce our greenhouse gas emissions here. That's just absolutely the first start.

GEN. WALD: I'll just put it from a personal perspective. In the travels I've had, as I mentioned earlier, it was noticeable – and I've spent 15 years overseas – and in looking back it felt good when I would meet with the senior officials from different countries that they actually deferred to us in a nice way for our opinion, the American opinion and leadership, and I didn't realize that until over the last few years when you'd walk into a room and they would not look you straight in the eye. It was almost as if they felt sorry for America. That's a bad feeling, particularly for a military guy.

So I think first of all, America has to show leadership. In my travels, again, I would ask people in the private civilian world, what would you like to do most? And invariably, I'd get the answer, I'd like to go to America. Now, as an American that makes me feel proud. That is power, that's a powerful thing, the image of America. Unfortunately, our image has been tarnished over the last few years, and that power, that subtle power, means a lot. So I think the first thing we need to do is join the international community and show leadership.

Now, I will just mention real quickly, the senator mentioned a national security study we did on climate change with 11 retired four star admirals and generals, and our conclusion is that you can argue whether it's 90 percent or 100 percent, that fact that there is going to be problems with climate change; in the military, if you give me a 90 percent problem, I'm going to consider it a risk, and smart money tells me that we need to be doing something about climate change from a national security perspective today not just from the standpoint of how we are perceived internationally, but for our own good. So the first thing I would do is I wouldn't think seriously about climate change; I would do something about it. And then, two, I would do better to join the international community in solving the problem.

SEN. DASCHLE: John Deutch?

MR. DEUTCH: Well, I share the view that nothing is possible unless the United States does something. Doing something I think means that you have an executive branch that puts forward a disciplined and comprehensive program which addresses all aspects of climate change. It's not going to be solved by a single piece of legislation. It's got to come from an executive branch belief in the problem and genuine policy measures to address it.

The second part, and here we're entering a post-Kyoto era, is the challenge about how do you get these large, emerging economies to join with you in restraining emissions of greenhouse gases, and that I still say is an extremely big challenge. We cannot solve the problem without encompassing China and India. I remind you that last year China produced about – built, operated, deployed about 90 large coal power plants. And neither China, not India or the other large economies are going to stop unless they are given very serious incentives for doing so. So it's not enough to chat among the leadership, wine and brie parties are not going to solve this. You have to put forward a series of serious measures to give the Chinese and the Indians an incentive to work with you. Absent that, we have an unfortunate future ahead of us, so that's what I meant we must find those measures and put them forward. The Bush administration has not done so, and we have to have serious measures on the table if we're going to have them join us.

SEN. DASCHLE: Let me pick up on that. As we find ways to reduce our dependence on fossil fuel and reduce overall carbon into the atmosphere, dealing with greenhouse gases in particular, some eminent scientists like James Lovelock have suggested that the only short-term solution is an increased reliance on nuclear. There are a lot of national security implications regarding our increased reliance on nuclear, including of course the proliferation of nuclear material worldwide in countries like Iran. How should we look at nuclear power today? Is it a partly a response, and what are the national security implications of greater reliance today?

MR. DEUTCH: Senator, nobody can be more favorably disposed to responsible nuclear power than I am. But if you take an optimistic view about how much nuclear could expand around the globe, you might have a tripling of the number of power plants around the world to the level of 1,000 throughout the world from 300 today. That, frankly speaking, does not change the global warming problem almost at all. It is a very

small percentage substitution for the greenhouse gas emissions, even if every one of those nuclear plants were to substitute for a coal plant.

So while nuclear makes an important contribution, by itself it is insufficient to really cause a – much less a reduction, cause a flattening of greenhouse gas emissions. So it has a role to play, it has to be managed properly, because many of those plants will be in parts of the world which are less stable than Europe or the United States, but it is not going to solve the problem by itself. In the very long run, nuclear is also important because it gives the prospect of electricity as a source of transportation, whether it's mass transit or electric cars that would substitute for petroleum use, but that's very much in the long run. In the short run, we have to deal with greenhouse gas emissions, including the assumption of greater deployment of nuclear.

SEN. DASCHLE: Any other comments?

GEN. WALD: I agree. I just – first of all, I agree that it's not the only solution but it's going to have to be part of the solution. The issue is – that I think you alluded to, is what do you do about the nuclear used fuel or the precursor elements? That's a huge issue and, as I mentioned earlier, our concern in Europe and I think globally is extremists that get ahold of some either precursor element or an actual weapon, and I was interested to see that the director of the FBI yesterday, Bob Mueller, mentioned that he is convinced that we're going to have a nuclear attack in America or someplace in the world in the not too distant future. Now, that's a pretty significant statement by the head of the FBI.

So I think your point that we have to do – first of all, it's inevitable, but we're going to have to diversify our energy sources, and it's not just nuclear. It's going to be renewables, it will be more efficiency in our vehicles, and alternate fuels. That's important, and it's important for us to get off this dependency of energy, imported energy. Only one of the top 10 holders of reserves in the world is a private firm, and that's Exxon. The other nine holders of the most reserves of energy in the world are all nationally owned companies. Most of them are in unstable countries or in countries that don't like us very much. We're being manipulated because of our dependency on energy. So that's just security.

And then you talk about climate change. This is a very elegant solution here. By solving our energy dependency you solve a security problem and you solve a climate change problem at the same time. So whether you're an energy – a security buff or you're an environmental buff, everybody gets satisfied. This is a perfect time in the world for that. But more importantly, I think this nuclear side – I think one of the most brilliant pieces of legislation from this national security standpoint has been the Nunn-Lugar Act, and what they've done to try to at least eliminate some of the former Soviet Union/Russian nuclear weapons. And recently the Proliferation Security Initiative is another good initiative, but it's not enough and they're somewhat unilateral. I think those have to be expanded and we have to work extremely hard to figure a way to help others, and in this case, potentially through technological transfer or whatever else, to do a much better job of securing either used or precursor elements for nuclear energy.

SEN. DASCHLE: Thank you.

Cathy?

MS. ZOI: I guess I come to this climate change issue – it's really a mobilization and transition challenge. It's not a technology challenge. There are a variety of technologies that are going to help us solve this. And if you look at it as an economist, there's a cost curve and there're are certain things that, frankly, we should have been doing for the past 20 years, like energy efficiency, which we haven't got off our bottoms to do very well, which according to the International Energy Agency can give us up to 80 percent of what we need. Now, I don't know if that's a little bit too rose-colored glasses, but let's have it and say 40 percent of the solution it's just going to come from improving the lights in this room and the widgets that are plugged in.

And then you march up the curve, and nuclear is somewhere on that curve, that cost of when you actually account for the insurance, the disposal and everything else. It's probably maybe equivalent to coal with carbon capture and storage. Maybe? Something along those lines. Essentially, what we need and what we need in all participating countries is to have carbon be priced somehow, and I don't care whether that a cap-and-trade or cap, auction and trade or a carbon tax; whatever is politically palatable for whatever nation in the world decides to play this game, but – I moved back from Australian and I live in the heart of Silicon Valley and those guys are jamming on finding solutions if the price is right. Everything that I've ever been involved in – and I was trained as a geologist many, many years ago and then as an engineer – everything I've ever been involved with the engineers and the technologists have been – they'd say, bring the problem on, we'll figure out how to do this. But they won't do it if – they can only go so far if there's not policy to support that.

So nuclear may or may not be part of the solution, I don't know, but I think right now it's frankly much more expensive than the other things. I'm a little worried about it being a red herring of a political debate because it's so charged, so we'll all – this is John's worry too, I think. We'll get into this big yes/no debate about nuclear when it in and of itself can't solve the problem.

SEN. DASCHLE: John?

MR. DEUTCH: Well, bravo. (Laughs.) Bravo. I think that this is exactly right. If we were serious about this, we would have a carbon tax around \$30 per ton for all admitted forms of carbon. So I'd like to ask you a question, Senator. (Laughter.) What are the political –

SEN. DASCHLE: Wait a minute, wait a minute.

MR. DEUTCH: What are the political prospects of such a significant tax, which will have the effect of reducing demand for electricity, shifting to non-carbon sources, and incidentally encouraging new technology? That's what's needed. What are the prospects?

SEN. DASCHLE: I'd say the prospects improve, and obviously, the next president is going to have a lot to say about what kind of an agenda we have. I have found increasing interest in both cap-and-trade, as well as carbon taxes as I traveled the country. I think the politicians are missing it if they don't fully appreciate what a dramatic difference there is in the electorate today. People are concerned about this and if it's a dedicated tax, they're prepared to support far more than most politicians give them credit for today. We're not there yet, but with some leadership and more opportunities for dialogue like this, I'd support you for the United States Senate, John, if you had this on your platform. (Laughs.) Yes, absolutely.

GEN. WALD: First of all, I think the senator has got it exactly right, but I will say one thing. In the discussion now, we kind of defaulted back to a domestic approach.

MR. DEUTCH: Yes.

GEN. WALD: And the fact of the matter is we don't control this in the world as much as we think we do anymore. The world has figured out there's money to be made in the cap-and-trade system, there's money to be made in being green. Whether you like that or not, they've figured it out. We were in London not too long ago with a group called the Climate Group, the major corporations in England. They were concerned about climate, no doubt about it, but they were also concerned about the other part of green, and that's money, and they are going to make a lot of money on this.

I agree nuclear energy is expensive, but when it becomes an international economic issue, people are going to default to where the money is. And it's more than just money, but we need to realize that our influence on changing this debate in the world has diminished significantly, and we need to start figuring out what's best for America.

SEN. DASCHLE: Let's open it up to questions from the floor. Question over here. Yes. We have microphones. If you wouldn't mind, you might identify yourself and then ask then question.

Q: Charlie Brown, Citizens for Global Solutions. Until this very last round of discussion, I was struck by the fact that we seem to be focused much more on the ends rather than the means, that is to say on the issue of climate, rather than the issue of energy. And I've also been struck by the fact that none of the panelists, and I would say to their credit, have raised the issue of energy independence and what the debate on energy independence is going (off mike). And we argue that energy independence is actually an argument for energy isolationism, and to go to General Wald's point that you can't these problems on your own, we have to work with the rest of the world. So I'd just like a comment on the debate on energy independence and how we move this energy solution to the climate change solution.

SEN. DASCHLE: Who wants to take that?

GEN. WALD: I will. I think energy independence would be the worst thing that could happen to America, personally, ironically. It seems very appealing to say, no, we don't have to listen to anybody, we're on our own. Hey, listen, we're in a global world – a global economy. If we're the only ones that use a certain type of energy in the world, that's not going to help us one bit, even if we wanted to. Number two is, I think, like was mentioned earlier, it is almost impossible to get there. We use 88 million barrels of oil a day, most of it in the transportation fleet – 60 percent of it; 97 percent of our vehicles use fossil fuels. We have 220 million cars or vehicles in America. To switch over is going to be significant. It's going to take time, as Secretary Deutch mentioned, and so I think we should become less dependent. I would like us to be less dependent.

It's interesting, today we import more oil from Africa today than we do from the Middle East, and by 2015 we're going to import 40 percent of our crude oil from Africa. I think when you start speaking in those terms, what the reality of the world is, what I think we need to do is exactly what's been pointed out a little bit, but we need to diversify significantly and we need to do it now. And it's going to take us probably a couple of decades at least to get to the point where we're even less dependent than we are today.

If we were to do fuel efficiency in our vehicles today, CAFE is what it's euphemistically called, by 2025 we could reduce imports by 4.5 million barrels. If we do alternative fuels, we do some renewables, we could probably get down to imports of many six million barrels a day by 2025. That's with a massive governmental regulatory effort. We import 12 million today. We're still going to have to import six million. If we did all those things, by 2025 we would still use as much oil as we do today, so it's a huge, massive problem that sounds good on paper but is unrealistic, so it's a global world and we need to face up to that.

MR. DEUTCH: Well, I share the view that energy independence is not a constructive idea. The first reason is that we are going to remain dependent on energy imports, and most importantly our allies are going to remain dependent on energy imports. And to bring it back to national security, a great deal of that oil is going to come from the most unstable part of the world which is the Persian Gulf, from Kuwait, Saudi Arabia, Iran, and Iraq. All the projections from the International Energy Agency, from our own Energy Information Administration, shows that production from the Persian Gulf will become progressively more important at least over the next three decades.

That has absolute national security consequences for how we think about our foreign relationships with these countries, but also how we deploy our military forces even in a happy world which does not involve us in Iraq.

So the dependence on oil is a reality, and our problem is to manage it over the decades that it's going to take to get away from fossil fuel dependence. I come back to the suggestion of a very significant carbon charge because it will introduce alternatives such as fuels from biomass. We could have two, three million barrels of oil per day in the next couple of decades, an important contribution, but the fact is oil and gas

dependence remains and talking about energy independence is not constructive in my judgment.

SEN. DASCHLE: Other questions? Yes. There's a microphone coming your way, and if you'll just identify yourself, that would be great.

Q: I'm Dirk Liebering (ph). Approximately 40 percent of our energy consumption is not in transportation, but in buildings. There's very little discussion at the national level about that. There's about a million, two, new homes built a year, mobile homes and commercial buildings, and it seems to me absolutely tragic that a piece of capital, which is what a building is, is being built as lasting 40, 60, 70, 80 years, and the technologies exist today on heating and cooling, on the thermal envelope that aren't being used, that aren't being adopted, that we're as a nation making such crazy decisions in the building sector. And I would think that through tax incentives and through some other things that we can change that, but also the market has to be pulled by the consumer.

When people go into a home, they need to go and ask what the building efficiency is and how much it's going to cost to heat and cool it and ask the builder to build the building so that it costs them as minimum as possible over a period of time. It's both good for them economically, it's good in terms of national security, and it certainly is good in terms of the environment. Cathy, I'd like you to address that.

MS. ZOI: Yes, well, I couldn't agree with you more. It's interesting; California has these amazing, compelling statistics that over the past several, I think, 15, 20 years maybe the economy has grown 60 percent and energy consumption hasn't, or maybe it was the population who (unintelligible) but the energy consumption – in California they have such successfully decoupled economic growth from energy growth, first place ever to do that. It is possible to do it, and one of the reasons that California was able to do it is the heavy investment in energy efficiency, and the investment wasn't necessarily dollars. Some of it was utility rebate programs and things, but it was regulation of buildings. They had Title 24, which meant every new building had to have the stuff that makes sense to have. It meant that utilities no longer make more money if they sell more kilowatt hours. They make more money if they sell a bit less. Their shareholders are happy because there's a very innovative regulatory scheme, but that sort of program needs to happen nationally. And it is within our grasp to be able to do that, and it needs to be done not just in the United States; it needs to be done globally.

When I've done work in India – again, huge growing energy appetites. Their demand management programs – I was working with the smart-metering company because smart-metering is a way to make energy efficiency happen quite easily. Anyway, I said to this fellow, look, we'd like to put these smart meters in so that you can reduce energy demand. They said, our demand management program is we turn everybody off on Tuesdays. (Laughter.) And that's what they have to do because they have demand that's outstripping supply. Well, actually, if you just used a better combination of technologies, you wouldn't have to turn off half of Mumbai on Tuesday afternoons. So I agree with you: the question is how to make it happen not just here, but in places like India as well, because when they need to build another coal plant every

month – shoot, it's pretty darn inefficient when you're sitting in those office buildings in Delhi right now.

SEN. DASCHLE: Just to add to that. I was in California recently at a conference and I was told that per capita consumption in the United States today is around 11,200 kilowatts per person, and California is today, as a result of the actions Cathy just described, around 6,700 kilowatts – dramatically below the national average.

There's a question over here.

Q: Can you hear me? Tom Collina, 20/20 Vision. Thank you all for being here. We work on security implications of both oil dependency and climate change, and luckily, as has been said, the solutions to these things are often harmonious and in synch with each other, sometimes they're not. So my question to you is, if there's something to help us on oil dependency but hurts us on climate, how do we balance these things? And there are a number of examples. The one I'll put out is turning coal into liquid fuel. Helps us on oil imports, hurts us on climate. How would you balance those things? How do you see the national security balance play out there?

SEN. DASCHLE: General Wald?

GEN. WALD: That's a huge issue, and I think it needs to be addressed immediately from the standpoint of what we're going to do. I was in the Senate testifying not too long ago, and the question was brought up by one of the senators. Why don't we just transfer clean coal technology to China? It was a great question, but the answer wasn't very good. The answer was, yes, we should do that. The problem is we don't have clean coal technology. (Laughter.)

So I think what we need to do is, first of all it's very appealing for the U.S. military – by the way, I'm a big believer in the U.S. military. Don't get me wrong; I haven't got soft in that, but to have an alternate fuel in case we get cut off. You know, there's the strategic petroleum reserve, et cetera, but it goes back to the independence question again. I think many people wish we could get away from this dependency on people that don't necessarily like us or have leverage on influencing our foreign policy, particularly the capability of our military to respond, so coal becomes very appealing. We have more coal than you could ever imagine in the United States. I think we have something like 250 years worth of energy of coal.

The problem with coal is it's dirty as heck when you burn it. The United States Air Force recently has flown an airplane with liquid coal. That sounds pretty interesting. The Germans did it in World War II, so it's not new technology and South Africa has been using it for years. The problem with it is, though, as was mentioned by Cathy is how do you sequester the carbon and how do you make that economically viable. And I think as a national program, the United States Department of Defense in conjunction with the Department of Energy and Industry needs to have a massive program for developing IGCC and sequestration and clean coal technology as an alternative, and that should be

done immediately. And until then, I don't think we should sanction any coal-to-liquid plants, frankly.

SEN. DASCHLE: John?

MR. DEUTCH: Well, first is I believe that coal to liquids in the United States and elsewhere should only be pursued if it's accompanied by carbon capture and sequestration of the CO<sub>2</sub> produced in the manufacturing of the liquids from coal. I regret to say that some of the measures under consideration on Capitol Hill don't make that required linkage between liquids from coal and carbon capture and sequestration for those plants.

And unfortunately here, Senator, I'm an old guy, so I was there in the Carter administration in the Department of Energy when we looked on synthetic fuels, not entirely successfully from the commercial point of view, but certainly from the technological point of view it is something that should be given attention to. A barrel of oil equivalent from coal is a much more expensive commodity currently compared to even the high prices of oil we have today. So if you go to China and talk to them about liquids from coal, China has enormous reserves of coal, they're tremendously interested, but the prices really have to come down before that technology gets exploited. But with carbon capture and sequestration, liquids from oil sands or from coal will eventually find their way to the marketplace as prices rise. And provided that one captures the CO<sub>2</sub> and knows how to sequester it, we should be encouraging that.

SEN. DASCHLE: Another question. Cathy, did you have anything to add?

MS. ZOI: Just quickly. And I agree with what these guys have said. I just again, at the risk of sounding like a broken record, there's things that you do first, like make every car that is on the roads going forward as efficient as the hybrids that we can get now, and that's a lot simpler and it's a lot cheaper. And, yes, I know that there are political issues with that, but that's why we should be investing our political capital in is improving the efficiency of what we drive, and I think if you do the numbers, that will have more impact than some modest coal-to-liquids plant.

SEN. DASCHLE: Yes. Please.

GEN. WALD: Just Secretary Deutch reminded me of something and it's somewhat related, but from a security standpoint it's interesting that in 1980 then President Carter actually articulated the Carter doctrine publicly. I think it's the last time we've heard a national doctrine articulated like he did, but one of the issues that President Carter brought up was that the free flow of oil in the Middle East and the Persian Gulf was a vital interest to the United States, and he publicly articulated we would use military force to ensure that free flow of oil. Now, if we said that today, we wouldn't look very good in the world, although I think there's some truth to it.

But the GAO did a study, and since 1980 we've spent between \$50 and \$60 billion maintaining a military capability in the Middle East, in the Persian Gulf

particularly, not counting the Iraq War, number one or two, and if you look at that, first of all, nobody else in the world is doing that. I mean, it's the Dial 1-800-U.S. Navy syndrome, I'd put it. Two, is if you really look at what we're paying for a gallon of gasoline in the United States, and you use that number, it's about seven to eight dollars a gallon minimum today. So just from that standpoint alone we need to do something. Now, the beauty of it, again, is that if you solve this problem, you solve it – it's an elegant solution. You get national security, you get economic benefit, you solve climate, so we just got to jump on it today.

SEN. DASCHLE: (Inaudible) motivation.

MR. DEUTCH: General, I just would like to observe that even if we didn't take one barrel of oil out of the Middle East, there would still be an American interest for being there and for having the strong presence in the Central Command region, and the history will show that there are many reasons why we want to be in that region, not least of all because of originally a Soviet threat, but today because of nuclear weapons, nuclear weapons ambitions of Iran. So while I think it is true that our military deployments there are in some sense are connected to our energy interests, I don't think it's exclusively the case, and I think unfortunate to give the American people the impression that if we had no oil imports, as unrealistic as that is, that we would not need to have significant military presence and programs available if necessary in the Persian Gulf and Middle East region.

GEN. WALD: I think to a certain extent you're right. You are right. I think it's going to be hard to go back and reconstruct history, but it would have been a lot different if there weren't oil coming from the Middle East since 1980. Now, Israel obviously to most of us is very important and the stability of the Middle East for that reason, but I think it's going to be hard to – when history shows how much presence we've had there, much of it has been because of this dependence on oil.

SEN. DASCHLE: I would agree with that. John, did you have a question?

Q: Just one point of clarification on the liquid coal, and then I want to ask John a question, because he raised Iran again. Even with carbon capture and sequestration in the production cycle, liquid coal produces more CO<sub>2</sub> than conventional gasoline, so until you put a price on carbon and think about the cost of carbon capture and sequestration and the cost of carbon, I think the prospects for liquid coal, other than through government largesse, are pretty slim and don't do much about the climate change problem.

I wanted to come back because you raised Iran again on what you think is happening there now, whether there's any prospect through diplomatic efforts to derail the Iranian nuclear program, and where you see the debate around either restructuring or strengthening the new Nuclear Nonproliferation Treaty?

MR. DEUTCH: Well, John, let me say it goes back to the question we had over here. Sometimes – always our different foreign policy objectives conflict and have to be managed. There couldn't be a better example than Iran, where we have these three tremendously important interests. One is they are producing and offering on the world

markets three million barrels of oil a day, which is significant and projected to go up. Two, we have this overriding concern to make sure that they don't proceed with their program to acquire a nuclear weapon. And number three, we would like them to be helpful as opposed to interfering in Iraq. And so we have to manage all three of those things.

There are two ways I'll answer your question. The first is I would turn to Sandy Berger and get his advice on how to do it rather than take mine. That would be a better way to go. But I will tell you: I think the United States is very likely to have to face a stark choice in its dealing with Iran. I think we should be speaking with them a lot more, discussing with them ways to resolve our differences, and in the course of doing that, we are not going to win all parts of that argument. We are going to have to have some very, very great concessions if we are going to come into a more civil relationship with Iran, which I think is absolutely essential, and certainly our European allies want us to see, but the balance between those three objectives is extremely important. And I'm not supposed to say this – it drives my friends nuts – but stopping the Iranian nuclear programs is going to be very hard to do indeed. It's a worthy goal, but it isn't going to be easy to achieve.

SEN. DASCHLE: Could I just ask somewhat a provocative question along those lines, because here we've talked about the need for the United States to possibly expand our nuclear capacity for energy purposes. Europe is doing that and will continue to do it, China is doing it. Are we not in a position of looking quite hypocritical by saying we're going to do it – we're going to expand our capacity, China is going to expand it, but you countries that we don't like or for whatever reason are causing us concern, we're not going to let you do it. How do we get away with that?

MR. DEUTCH: I don't think that's a fair characterization of what has been actually probably the only kind of bipartisan position that the U.S. administration has taken, both the Clinton and the Bush administration. I think there's been a real effort to work within the G8 to offer quite attractive terms to the new emerging countries who will be using nuclear power, who would like to use nuclear power in exchange for nuclear supplier states – whether it's Russia, the United States or France – giving quite attractive guarantees and support on the front-end of the fuel cycle; that is, through enrichment services, and especially in the back-end of the fuel cycle to avoid reprocessing. I think that that policy initiative has been really quite general, and the United States has been in both administrations quite firmly behind it.

The trouble is we don't have any good examples. We could have perhaps reached some sort of an arrangement in Iran. It didn't happen over the Bushehr reactors, it didn't happen because of their enrichment program. We took, I think, a wrong step with Brazil in permitting them to have an enrichment program, and the U.S.-India deal has both pluses and minuses in that regard, but in general the G8, the United States, and the other leading world countries, I think, have been responsible and correct in saying, yes, new emerging countries can have nuclear power, but let's do it in a way that minimizes proliferation risks, and I think we should all be behind that.

SEN. DASCHLE: There's a question over here. Yes.

Q: Hi. Sarah Mucenski (ph) at the Center for Naval Analysis, where I work on an energy program called Energy Conversation, a program that's funded by the Department of Defense. We hash out kind of all of the issues that have been brought up here in the Q and A portion, and you're all invited to come. My question is about the Montreal Protocol, which in its recent report says has done more to curb greenhouse gas, or greenhouse gases, and address global warming than any other international policy. Do you think that that's a good foundation to move forward from as we move kind into post-Kyoto talks? Have there been any people talking about what's worked out of Montreal Protocol and what hasn't worked? Thanks.

GEN. WALD: I'll just make one real quick comment and it had to do with chlorofluorocarbons I guess, but to me the difference that and the Kyoto is the decision by the United States to participate. And when you say regulation in America, a lot of people get real nervous, but, you know, we regulated refrigerators and sometimes you've just got to do it. And I think the best part of that model is everybody participated in it, and it wasn't a kind of voluntary program. It was regulatory and everybody agreed and it worked, and I think the same thing is going to have to happen with carbon capture and the next – it won't be called Kyoto, I'll guarantee you. It will be called something else – (laughter) – but it will be coming. And, frankly, when Kyoto first came out, I was glad that we didn't necessarily participate because I don't think China and India are emerging; they've emerged, so they're going to have to play too.

MR. DEUTCH: Well, the Montreal Protocol has been successful, but I think it's dangerous to take that as a model for carbon emissions. There are two reasons for that. First of all, there were easily available alternative chemicals that could be used for refrigerants that did not cost that much more money. If you were to do something similar with carbon emissions; that is, have a very strict protocol that said everybody reduce by this percentage every year, you'll have the issue about what are the size of the costs that it takes to make those adjustments and who's going to bear those costs, and they are much, much higher.

Remember, a coal plant with carbon capture and sequestration, for the consumer might mean electricity which is 20 or 25 percent higher if just paying the costs of the additional need to do the carbon capture and sequestration. That's a very, very big, big number especially for a country – an emerging country like India or China. And I will use emerging, because there are so many people in China and India who have no electricity and they want to have electricity. It is an indicator of social and economic development, so it's a much bigger bill to pay, and I don't think it's a good model about how we would have to handle it.

SEN. DASCHLE: Bill Holmberg.

Q: Thank you, Senator. The greatest carbon potential – the greatest potential carbon sinks in the world are the oceans, the soil, and biomass. How do we seriously take advantage of these potentials?

MS. ZOI: I think if we had a price on carbon, then we would probably get directed investment into a variety of solutions. Obviously, getting that to happen and happen reliably is going to require some more investment. Is that not so? So what we need is that investment to be directed appropriately. And, again, absent the political will and the financial framework underpinning that, then I don't think that we're necessarily going to be able to tap into that vast amount of potential resource.

SEN. DASCHLE: There's a question over here.

Q: Hi. Hey, Congressman. This is Paul Marino with EAR. I have a question for you on strategic policy. At the G8 this weekend, President Putin has offered to the United States to build the Bering Straits tunnel projects, and he sees that we, the United States can work with him on great projects for industrial development. And then going beyond that, they have a plan to build floating nuclear power plants for fresh water desalinization.

General Wald, yes, I agree that global warming is a huge threat. Now, every day there's this very hot, fiery mass that causes lots of global warming and it's called the sun, so do you think we should bomb the sun?

Mr. Deutch, a question for you. You asked for us to do something. I think that we should listen to Putin and go back to FDR's model exactly, but also first think about Cerberus and the recent takeover at Chrysler. For those of you who are not familiar with Greek history, Cerberus is the name of the three-headed hound that guards the gates of Hades, so for some strange reason some friends in our financial community have decided to name their financial entity that while they gobble up the last of U.S. industry. So perhaps you can address that.

And then lastly, Cathy, in your survey on global warming, did you ask people if they thought that global warming was true, and what are the scientific studies and so forth that validate this, because most people don't know that Al Gore is a hedge fund manager, and a lot of the intentions here are to remove U.S. industry by taxing an industrial base into the stone age. So thank you.

GEN. WALD: I'll start since you started with me. (Laughter.) I think in all seriousness that strategic doesn't mean that you agree with everything with the person that you're negotiating with or operating with, and I think we've fallen into a trap where we think if somebody doesn't agree with us and what we do in our country, then we aren't going to have a relationship with them. And there's been plenty good examples in the past where strategic relationships have been made where we don't totally agree in principle on everything, but on some of the most serious things we do.

And I think I'm disappointed a little bit with President Putin's – some of the things he's done, but I think we should have continued to work with Russia as a strategic partner over the last years, and I think his offer to participate in the MDA is really excellent and with Azerbaijan particularly.

Now, does that mean I agree with everything Russia's doing? No, not a bit. As a matter of fact, I don't agree with a lot of countries around the world with what they're doing, but we should make strategic partnerships where they make sense on things that make sense with us, and not necessarily think that we're only going to negotiate from a total position of advantage all the time. And, no, I don't think we ought to bomb the sun. (Laughter, applause.)

MS. ZOI: With respect to the – where the public opinion is on climate change, thankfully Americans now are in widespread agreement that the science is completely irrefutable and it's there and they are persuaded that, indeed, climate change is happening and then human beings are causing it because the evidence is just again, unfortunately, so abundant and mounting. What they are not necessarily persuaded of yet is the urgency in solvability of it, and so that's what the Alliance for Climate Protection is going to be spending time on.

SEN. DASCHLE: A question right here. Yes. There's a microphone coming.

Q: My question is about the rhetoric of adaptation, which I hear increasing, especially in the public. And it seems to me, as a non-technical observer, that the idea that we now have need to adapt to the effects of global warming is designed to derail the kind of rising consciousness that you're discussing. And so I wondered what your opinions were about the rhetoric of adaptation and whether there were then national security implications, or whether in fact adaptation is a part of a complex response that has national security implications. I'm Sue Thistlethwaite. I'm president of Chicago Theological Seminary, and if you'd like to talk to me about Hades afterwards, I'd be happy to do so. Thank you. (Laughter.)

SEN. DASCHLE: General Wald?

GEN. WALD: We looked at that as an issue during the Military Advisory Board study to the Center for Naval Analysis, and the fact – at least this is what we believe – in a way adaptation is giving up, if you think that's the only answer. But frankly, we'll have to mitigate and probably adapt both, because global warming is somewhat of a natural occurrence, and the climate change problems are multiplied by a man-induced issue. So we're going to have to prepare for adaptation and think about that in a strategic way, but the first thing we ought to be doing is mitigating now.

MS. ZOI: I agree with that. I think it depends on where the discourse is happening. In General Wald's word, I think the adaptation discussion needs to happen, and frankly, there are already places where adaptation is needing to take place. However, when we're trying to engage the public so that they take action in their own lives and they become politically active on the issue, the discourse that we are really engaged with them on is the solvability – the solutions that surround them in their daily lives, that are in their electricity system, that are in their cars, and the policies that they can actually say to their elected officials, "I want you to put this in place because darn it, I want to have access to a hybrid car," or whatever it is. And that's very much about mitigation so that we reduce our emission.

GEN. WALD: I'd just add real quickly that if we don't mitigate, there's not enough adaptation could be done in the long run.

MR. DEUTCH: Well, we're not making progress on the issue, so I think it behooves us to think about what happens if we don't mitigate, and we aren't making progress. We're certainly not making progress internationally, so thinking about the consequences of adaptation, as unpleasant as it is, is something that should be done, but even more worrisome than that are the proposals for geoengineering solutions, which is a little bit different than adaptation. That says where human beings will actually try and titrate the atmosphere to undo the effects of global warming.

So one of the ways of focusing the attention of the public and of our political leadership about the need to mitigate is to clearly show what adaptation, so-called, and geoengineering solutions really mean, so I think, first of all it's necessary, because we're not making progress and, secondly, maybe it will help cause some progress.

SEN. DASCHLE: We can take one last question, and we'll take the one right out in front here.

Q: Hi. I'm Jeff Evans (ph) and maybe I get to ask the softball closing question then. But I'm wondering if there's any hope coming out of this conversation or any call for optimism. And I'm especially interested in echoing some of the things I've heard about the problem is not solely a U.S. problem; it's a global problem, and that we need to convince other country to as they emerge, or whether they've emerged, to actually adapt practices that are in their economic benefit and then in the global benefit. So I'm wondering if there is one thing that each of you recommend to be done in other countries that we could support, recognizing that it might not be through government, but it might be through economic or other mechanisms.

GEN. WALD: I was driving in today and I got hope, I really did. I've been so depressed for the last several years – (laughter) – but frankly, I was talking to Mr. Leone about this earlier. I'm encouraged a lot. I think the debate that's going on right now is growing a lot. I think it's becoming a sophisticated debate, and I think the younger generation that's coming up is very encouraging to me. So I think there's a lot of good (unintelligible). Now, there's big problems, no doubt about it. It's going to take visionary, courageous leadership, but I think it's going to happen.

MS. ZOI: Can I have the last word? All right. I will go next. That's okay. I am optimistic. I definitely believe that the solutions are among us, and what I would hope is that if the United States can get going on its own, that we will have a bunch of really interesting technology solutions that we can share with the countries like India and China, and they will come into this mix and they will also be able to sort of join with the process as it's appropriate. So, again, I'm really bullish on technology, and it's not based on some airy-fairy dreaminess. It's because my 20 years in the industry – I know that it can be done.

I also am optimistic because I think that the world – the global population has caught on to this issue because it's palpable that climate change is happening. In Australia, they've in drought for 100 years. I'm not kidding you. There are towns that are emptying out and they're like, you know what, we really need to get on to this, so in cities and in countries all over the world people are now becoming aware of it, and the reason I wanted to end with this, because I don't want to trivialize the issue, but on July 7<sup>th</sup>, 7/7/07, the Alliance for Climate Protection is working with the guys who produce "Live Aid" to hold this concert called "Live Earth," and I just got an email two days ago: that concert is going to be streamed on MSN to all around the world, and it starts I guess in Sydney and then it goes Sydney, Shanghai, Johannesburg, London, Hamburg, Istanbul and then Giants Stadium in New York City. And in 24 hours, that concert about climate change, about responding to the climate crisis is going to reach three billion people. I know it's just a rock concert, but the idea of engaging the entire world in something like this, that – and the enthusiasm with which that is being embraced in Shanghai, where I have to go next week and do some stuff for the concert, the government officials are saying, we believe in this. You just feel like something's changing. So anyway, ending with a rock concert. (Laughs.)

SEN. DASCHLE: John?

MR. DEUTCH: I'm okay.

SEN. DASCHLE: Cathy Zoi, John Deutch, General Chuck Wald have been terrific participants. Let's give them a big round of applause. Thank you.

(Applause.)

(END)