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Economic, Environmental and Security Risks

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Conference Keynote Speaker  
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U.S. Deputy Secretary of Energy

**THIS IS AN UNCORRECTED TRANSCRIPT.**

MR. : [In progress]--going to hear out the contending interests and points of view and to advance a policy and to advance the policy of the Administration which is never easy under any circumstances in this town.

I have a particular regard for Kyle because of some of his previous experience, one, that of working on Capitol Hill. He had worked extensively on the Senate side with a distinguished majority leader, such as Bob Dole and Trent Lott. In case you don't know, I am a Democrat, so this probably carries a higher praise than what might otherwise be presumed kind of thing.

In particular, I find something for which he deserves a great credit is that he ran for the United States House of Representatives in 1992 and 1994. Now, I didn't win until my third time, so I am very sympathetic to anybody who is willing to stick their necks out and try to engage in the public policy process in that way.

So, we are very pleased to have with us Kyle McSlarrow, and I think it is particularly appropriate that we have now the administration and the people at Department of Energy work very hard. It is very hard in this country for either the media or the Congress to recognize the efforts that they make, so I want to particularly say we ought to thank them as public servants because the Department of Energy and the Secretary of Energy in particular play a very special political role in America, and that is, when gasoline prices go up, when natural gas prices go up, when oil prices, whatever it is, anything that gets the mass media and the public's attention, it is time for a public flogging, and administrations of both political parties and Capitol Hill forget who these people

are and send them out to take the flogging on behalf of the American--and then we flog them, then, the market gets itself straightened out, and we go forward.

So, they perform a very great service to a market America, and I want to particularly thank Kyle McSlarrow, more seriously for his very serious leadership of the Department of Energy.

[Applause.]

SECRETARY McSLARROW: Phil, thank you. I think it depends on the crowd whether or not what you said about me is praise or going to permanently damage me and my party, but I am going to assume for this crowd a somewhat bipartisan hue, so thank you very much, very gracious.

I couldn't help but think of when you were talking about the floggings and the inevitable political maelstroms that develop about price hikes, that Spence Abraham is fond of saying that, you know, when the price of gas or any other commodity skyrockets, it is his fault, and when it plummets, it is the market at work. So, somehow he and I have not yet figured out how to change that paradigm.

I appreciate an opportunity to be here. Obviously, there are a number of people in this room with whom I have worked very closely. It is good to see all of you, and I appreciate the interest in all these topics. I am going to try not to duplicate the other distinguished speakers that I have seen on the list. It is probably inevitable, I suppose, but I will try not to.

I would like to make a couple of observations about how we in the administration have approached and are approaching the energy challenges

that face the United States. Our approach really has a couple of fundamental elements.

First, our energy strategy is a global strategy. It has a healthy dose of self-help, of course, but we have an aggressive focus on international cooperation, as well.

Second, all the threads have to hang together, which is why it has to be a comprehensive approach. Those of us who are in the energy field tend to use the term "interdependency" in the context of energy security, and we know what we mean, we mean when the lights go out, we worry about whether or not there is an impact on the water system or in hospitals.

I can actually recall during the blackout on August 14th of last year that I was on the phone worrying about whether or not electricity is going to get to two refineries in Toledo that were critical for the Midwest supply, but there is actually an interdependency at a higher level than that among all the fuels and how we use energy, not just in this country, but globally that I would like to talk a little bit about.

The third, it has been our belief, and continues to be our belief, that an energy strategy has to be staged, that is, both the opportunities and the challenges have short, medium, and long term horizons.

Let me first run through the challenges we face, and I know Guy Caruso was here earlier, and as I said, I am going to try not to duplicate by running through a bunch of numbers, but let me just sort of hit some highlights.

The way I am going to approach this is to think about the problems and the opportunities in terms of fuels. Mentally, there may be aspects

to energy policy that that misses, but it captures a lot, as I hope I will have an opportunity to show you.

So, let's just start with oil, why not. You all are undoubtedly aware and have heard many, many times we are importing 55 percent, say, today, of our petroleum, and it is projected in 2025 to rise to 70 percent.

There are a lot of environmental issues associated with petroleum, and we are now in an interesting perennial but recently interesting debate about the status of reserves in the world.

On one hand, every time we have this debate, those of us who believe in a free market, are usually proved right because price signals do actually spur more production, so in the one sense, I take with a grain of salt those who are worrying that right around the corner is a massive falloff in our ability to produce globally.

On the other hand, there have been some interesting debates, and people have probably read about the debate with Matt Simmons and Saudi Aramco about the state of Saudi reserves.

What is interesting to me is, without taking sides, that for all of the forecasting, you know, if you go to EIA and you say show me where the oil is going to come from, they can show you where all the oil comes from out 20, 25 years.

If you actually go to each one of those countries and you add up what they think they are going to produce, it doesn't really add up too well after about 15 or 20 years. We are running out of oil. As I said, I think price signals

matter a lot, but it is an environment that is probably much more challenging than I think people understand today.

The other aspect to it is that the mix of imports is going to change. I think most people know that OPEC's share of imports hit a peak of 70 percent of our imports in I think 1977. It fell to about 40 percent in 2002, but it is forecasted to go back up to about half our imports over the next 20 years, and if you actually focus on Persian Gulf producers, the same phenomenon occurs. It was higher, it has been lower in recent years, and now it is forecasted to go back up.

The other aspect to the mix of imports is because we don't really expect any new grass-roots refinery facilities. The existing ones will expand, but no new grass-roots refinery facilities to be built.

Refined petroleum products will be an increasing percentage of imports. Today it is about 13 percent, and that is probably going to double in the next 20 years. Why is this important? It is important because increasingly, given all the specs that we place on refined products, increasingly, other people outside the United States are going to be responsible for, and have control over, how those supplies make in the market.

I don't necessarily know what that means, but it means something, and it is something we have to keep an eye on. If you take natural gas, switching away from oil, we are all aware that natural gas is the fuel of choice for electricity generation.

What that has meant in recent years is the traditional double hump that we had of electricity generation and usage in the summer, and then

the same thing occurring in the winter for home heating or heating in general, is starting to smooth out as increasing numbers of natural gas-fired plants are coming on line and you are starting to have just a lot of demand all year long.

Traditionally, people worry about whether or not we have 3 tcf in the ground at the end of the storage season on November 1st. Big debate going on right now whether or not that is actually a relevant number, and last year was kind of a scare that we have gotten through okay this year, but all of this is just a harbinger of what Alan Greenspan, the National Petroleum Council, the Energy Information Administration, and a host of others have said for the last several years, which is we have got declining production in the United States.

More than that we have got declining production in Canada, which has in recent years supplied about 15 percent, and most people assume at some point we are going to have the Alaska Gas Pipeline, most people assume that we will build on our existing four LNG facilities, but both are challenges in and of themselves.

There is a huge debate in Congress on the energy bill about what kind of incentives would be supplied for the gas pipeline, and as we have seen recently with LNG facilities, that is not slam dunk either.

The interesting thing is if neither of those things comes to pass, you can add another buck 20 to the already high forecasted wellhead price in 2020. So, we are living through a very high baseline in terms of natural gas prices, and there is hardly any scenario that suggests that it gets much lower, and there are quite a few that suggest it gets worse.

Coal, pretty straightforward. We have got 250 years of reserves. This is our ace. We only have one or two or perhaps three problems, and they all start with the word "environment." We know what the challenges are that we have to confront, and we know that the uncertainties surrounding those challenges is itself an impediment.

Nuclear power, obviously, what do we do with the waste is a huge issue. The industry has had trouble figuring out how to jump-start new builds with what we tend to call generation three and a half, that is, technology that is available, designs that are available and being built other places, but not yet in the United States.

They face a lot of uncertainty of regulatory and licensing regimes, and in recent years, trying to come to grips with what a new build means in the context of moving from a regulated environment, when it was a little more straightforward on how you would recover your return on capital to a competitive environment is something that has yet to be straightened out.

Then, you overlay all of that with concerns about safety and nonproliferation depending on the fuel cycle that you might be talking about. If all of that wasn't enough, this all takes place against a backdrop of uncertainty of investment in infrastructure especially in electricity transmission, uncertainty of the regulatory environment, and uncertainty about where we are and where we want to go in terms of competition, whether it is electricity or others, all of which is locking up capital.

So, that is the backdrop. So, what do you do? Well, you could start with the short term and just work forward, or you could start with the long

term and work backward, I suppose. You can't ignore the political dimension of the short term. We were just talking about the gas prices in recent weeks and obviously, what is being forecasted to come in April and May.

I have to say, though, I am sure a lot of you have read--I think, Dan, you even spoke earlier, right--probably most of you have read *The Prize*. I read it a long time ago and then re-read it after about a year of being at the Department of Energy. I have to say when I got to the part, which I had forgotten about, where about 50 years ago, he writes about the gasoline price spikes and then the inevitable investigations on Capitol Hill, I had to laugh out loud that we have just been doing this over and over and over again. It seems to work for everybody, right?

But it highlights in my mind the fact that these really are long-term systemic issues, they have to be approached that way. Of course, we have to approach both, the short term and the long term. You are just not going to be able to skip over and say, hey, we will get back to you in 10 years, we are going to have to do things along that front, but we have really tried not to miss the long-term nature of these challenges in terms of developing the strategy.

I would say that as we pursued both the short, medium, and long term, we have really tried to use a phrase, that is sort of a catch phrase that people have used, which is a diversity of supply and a multiplicity of fuels. It kind of rolls off the tongue, but it does capture in some sense what it is that we have been trying to do.

So, in the short term--and I will get to the energy bill in a minute--when you focus on oil, what I think about when I think about oil is today,

where probably the goal of production is about 82 million barrels a day, it is roughly 78 to 82 depending on the time of year, and that means that in terms of spare capacity, that capacity that is available, but not being used in the world, if you look back five years and you look forward five years, and assuming the forecasts are roughly accurate, I think beyond those points of time they might not be, but I think within that band, they probably are, you are talking a maximum of spare capacity of 4 million, maybe 5 million barrels a day, often, as is the case right now, maybe 2 or 3 million barrels a day.

That is an important point because when we think about what it is we are trying to do, often people think that what we are trying to do is throw the long ball and figure out how we are going to find 10 million barrels in one field that can produce 10 million barrels a day.

It is not going to happen obviously, there is no field like that, but the point is on the margin, where we can make a difference is the effect on spare capacity, because obviously, Saudi Arabia is the swing producer, but as more of the non-OPEC producers are entering the mix, the more on the margin you can affect the ability to ensure supply and you can affect price, so it matters a lot.

So, when you say you can bring a million barrels a day onto the market, the right comparison, in my view, isn't a million barrels vis-a-vis 80 million barrels, it's 1 million versus 4 million of spare capacity, that is, 25 percent of spare capacity has been brought on line, so these numbers may sound small in some context, but in other contexts are hugely important.

So, therefore, we have immediately--and this is a continuation of the policies of the previous administration, at least on the international front, we

have been very aggressive about working with Russia, and in the Caspian, we have been very aggressive in West Africa. Obviously, this is industry, industry mostly, but it does matter in terms of the government-to-government discussions about how we can address investment.

There are some real opportunities that we are pursuing now, and there has been some good news. A lot of uncertainty right now obviously in Russia, but over the last two years--and I say this as somebody who has served as the U.S. co-chair of the Russian-American Energy Working Group--I think we have seen a lot of new opportunities whether it is in the Northwest in Murmansk, the Shtoteman [ph] gas field Timomperture [ph] or in the East with the Sakhalin Islands, a lot of things are happening, a lot of good things are happening, and some of the obvious challenges that have been there for the last few years is still going to be present and we just have to work through them, but I feel good about how we are moving forward.

The interesting point about new oil, if you will, is really what the role is for Canada. Dan Yergin and I have been laughing for the last couple of years because two and a half years ago, it seems like he and I were the only two people who would continually list the Oil Sands, about 180 billion barrels, as real reserves, and now increasingly, it is starting to slip in there, so now you are starting to see Saudi number one at 250 billion barrels, Canada next with 180, and then Iraq with supposedly 112.

There is still technological challenges to go there, but you can imagine for the United States, if and when the Oil Sands really open up as an opportunity, that is a huge important part of our energy portfolio with our next-

door neighbor and is something that we in the North American Energy Working Group have been focused on.

So, we have done it on the international side. We in the administration also said we need to do more on the domestic side, so we have been pushing ANWR, and all of you can probably attest to the success of that so far, but as I said before, the significance of ANWR, and I think it has been unfairly treated in a number of ways, but for the purposes of today's discussion, unfairly in one narrow sense, is that it really could make a big difference when it comes to the spare capacity in the global market, and it is not anything to sniff that. It doesn't matter where you come out in the debate on what the size of the reserves are. Even if you just take the median estimates by the U.S. Geological Survey, there is still a heck of a lot of oil and important.

So, we are not planning on giving up, but it obviously has not been greased very well out there on the Hill. We also can't forget about energy efficiency, and this administration right off the bat asked Congress to lift the moratorium on doing something about fuel economy standards. We have actually proposed increases on light trucks, and we have moved forward pretty aggressively on trying to fund the research and development that goes into hybrids both in terms of the R&D dollars that we spend at the Department of Energy, and also by proposing tax credits that would deal with them.

The next way we have tried to address the challenges is we have thought about this in terms of reducing the pressure on natural gas. Now, that happened several ways, one, figure out how to produce more, the other is how to figure out not to use it so much.

We are in this very odd position where, for environmental reasons, we have driven people--after the Hughes Act--we have driven people toward the use of electricity generation and for environmental reasons, whether or not we are placing moratoria on drilling, on E&P, or what have you, we are keeping people at bay from finding it, so it is sort of this odd policy situation.

We tried to reduce the pressure in short term by streamlining the regulatory side, by helping make the possibility of expansion of LNG facilities more likely, that is, FERC's decision on open access that they made, I think it was a year a half ago now, for new terminals, which would encourage investment in LNG facilities, but obviously, there are other concerns as I mentioned before.

We just saw within the last week what happened to Marathon's project in Baja, California. That is not going to be the last LNG facility that runs into challenges, and we are just going to have to work through them.

But there are a lot of other things that affect natural gas, as well. The administration's Clear Skies proposal, renewable tax credits, electricity reform, all of them are important in their own right, but the interesting aspect to them is they all have, to one degree or another, some effect on the use of other fuels and lessening the continued just almost myopic focus on the use of natural gas when it comes to electricity generation.

On nuclear power, obviously, Congress has approved moving forward on Yucca Mountain, but the real news in terms of the short term is the continued success of up rates and the continued success of relicensing before the NRC.

So, that is kind of the short-term activity, but ultimately, when thinking about the future, we decided we wanted game changers, long-term challenges and solutions with potentially payoff that required decisions today, and this is where I think this interdependency of fuels is acutely important.

If you think about power generation and if you looked out, say, 50 years, and you said what is it going to look like or what could it look like, I think our answer for the administration would be potential fusion, a long way off, but it is why we joined last year, ITER, the International Thermonuclear Experimental Reactor, which is an international consortium.

We think something has fundamentally changed in the last decade that allows us more confidence in moving toward what essentially is a burning plasma to produce fusion power. That something, by the way, is actually computer power, and our ability to model and simulate things in a way that gives us a lot more confidence.

So, that would be way out there, and in the medium term, for power generation, we still believe we need a strong role for coal, so we proposed FutureGen, which is a billion dollar, 275-megawatt reactor that is designed to gasify coal, produce hydrogen, allow us to sequester carbon, and it is something that the President announced last year, and over the next 10 or 15 years, we are going to try to build this plant. At the end of the day, it is something with zero emissions.

Our believe is coal has to be in the mix. The idea that we can walk away from coal, given the reserves that we have in this country, when we

do have the technological ability to confront what are admittedly tough challenges is we think foolish.

So, we are going to go for it, we are going to try to produce what we think will have to be the future of coal in the country. We think we have to have a strong nuclear mix, and that is why, in addition to trying to help with regulatory and licensing challenges that we have had over the last really 20 years, we are also going to continue looking past just the designs we have today and looking toward what we call "generation 4 designs," and looking at advance fuel cycle all with the goal really of trying to achieve low cost uses of nuclear energy that are both safe and proliferation resistant.

We are going to continue focusing on renewable and energy efficiency. The interesting thing is that our budget requests for renewable energy and energy efficiency at the Department of Energy since we have come in and each year been more than the combination of fossil and nuclear energy combined. I am not sure exactly what that means, but I do know that it is a little bit different than is often printed in the papers, and there is a reason for it, not because I just love renewables, but because I think the government's role in trying to get the cost down for renewables is a completely appropriate one, whereas, I suspect oil and gas is a lot more mature.

I think that is where we actually do our best work, so we are focused on the kinds of basic and, in a lot of cases, applied scientific R&D, to try to do everything we can to make these technologies work in the free marketplace.

Finally, in the short and medium term, we obviously do think it is important to move forward with LNG and the Alaska Pipe Line, but we would also add in gas hydrates as a promising avenue for R&D. We are not exactly sure where it takes us, but it is one of those things where the numbers are so huge about the gas that is involved, that if you had a payoff, it would really be huge.

So, that is power generation. So, now think about transportation. The relationship between domestic and foreign sources of energy is not often well understood, but it is particularly not well understood in the context of the relationship of electricity generation and the transportation sector.

Here is what I mean. I just ran through all these electricity generation sources. Nuclear provides about 20 percent, coal provides 50 percent, renewable energy is a portion, probably 10 percent if you are including hydro power, natural gas is in the 20s, but increasing.

Then, you took over to the transportation count, right, it's all petroleum. What we are trying to do when we talk about moving to a hydrogen economy is more than just talking about how we move to a cleaner environment. That is obviously a hugely important point, but for the purposes of today's discussion, it is about something different, which is hydrogen is an energy carrier, it is not a source. It has to be produced.

Right now, on one side of the count, on transportation, it is all oil and it is increasingly imported. Now, I don't know that there is ever going to be a consensus on what is too much imported oil, but I have yet to meet anybody

who actually thinks 70 percent imported oil is a good thing for this country or for any country. You just can't put all your eggs in one basket that way.

So, what we are trying to do with hydrogen is essentially to shift from the domestic production, which we have loads of, whether it is coal or nuclear or renewable energy or natural gas, once you get everything else into the mix, and use that, not just for the production of electricity, but for the production of hydrogen, too.

The good news is you can do that. For example, the FutureGen plant that I was just talking about is designed, not just to show that we can burn coal cleanly and produce electricity, it is designed to separate the hydrogen, as well, which you can then use in the transportation side.

We are also pursuing the next generation reactor, a very high temperature reactor, which is going to essentially just crack water and produce hydrogen up at our Idaho National Lab, because we think there again there is a significant role for nuclear in the future, and if we can combine that role with the role of producing hydrogen, so much the better.

That is really what is going on with the hydrogen economy is a fundamental shift both to make the production of energy cleaner, and also for us to make it more secure.

There are a lot of challenges, and I don't mean to gloss over them, but in the interests of time, I will just say that the National Academy of Sciences just did a report on our road map and our pathway on hydrogen.

They had some recommendations on how we might change things, which is fair and in many cases we will probably do that, but they also essentially validated the road map, and we are very pleased by that.

The last point on that, that I will say, is that in all of these things, we are not doing it alone. On the generation 4 future nuclear plants, we are working with a consortium of international countries. Obviously, ITER is an international consortium, but we have also established the Carbon Sequestration International Forum for people to participate both in sequestration technologies, and if they want to, in the FutureGen plant.

Last year, we also established the International Partnership for Hydrogen Economy, so we could leverage the work particularly that is being done by the EU, but other countries around the world who have an interest in hydrogen and in fuel cell work, so that we are not all duplicating each other's activities, and we can leverage it and focus on things, sort of the mundane but important things like establishing codes and standards, so we can actually build an infrastructure.

So, if I could just summarize the points that I was just making, I would say what we focused on is we are trying to create power and transportation fuels at the same time, we are trying to maintain a diversity of fuels and enhance flexibility or even fuel switching.

We obviously seek to promote our energy security. We are trying to use our competitive advantage, which is technological solutions to complex problems, and we are trying to leverage international partnerships.

Let me just close with the point, since it would be odd if I didn't say anything about the energy bill, and just say this. We really do have to act this year. Congress needs to pass an energy bill.

I don't know how it is that members who are trying to hold up an energy bill can explain to their constituents the price spikes that have gone on for the last three years, whether it is gasoline to natural gas to home heating oil, and then we start all over again, and we know it is not something that is going to be fixed in the short term, we know it is a long term.

We know the energy bill won't solve all the problems, but it is going to get us down the road toward addressing them. I don't know how they explain that. I don't know how they explain to constituents who suffered the blackout in August 14th. I don't know how they explain to people in the chemical, fertilizer, and aluminum industries who lost their jobs and had wipeouts because of the high price of natural gas in this country.

I don't how they explain to the poor who pay a higher proportion of the energy commodity process than anyone else. There are fair grounds for debate about what the energy policy must be with the idea that we have gone all this time, and worked bipartisanly, and haven't yet done a bill, I think is unacceptable.

It also needs to be comprehensive. Some want to pick, you know, cherry-pick energy policy, and, of course, we all have our pet projects and our pet peeves, but it really is true, you know, the old canard, you walk down all the fuels, nuclear is too dangerous, coal is too dirty, wind energy kills birds, solar uses up too much land, you know, hydro kills fish, we just go on and on, and

there is not a single energy use or source that doesn't have an advocacy group against it, and if you listen to all of them, of course, we would get nothing done.

Our view is we need it all. It is interdependent, as I hope I have shown a little bit today, but we need more energy. We need more choices and flexibility, we need it to be cleaner, and we need to use it more efficiently.

Of course, all of this is a hugely complicated subject, and that may be one reason why it is so hard to get people to act, and that is why I personally am very grateful for all of you who have come together to help us think through these problems, so thanks for having me today.

[Applause.]

MR. : I want to thank Secretary McSlarrow very much for being with us this afternoon. Now, I turn it over to David Sandalow.