

ALAN HEGBURG: As the secretary said, we are the nerd agency and I'm clearly not the nerd, because I don't even know how to push the button.

Thank you very much for the invitation to be with you today and for your kind words, which I will certainly pass on to the secretary.

I would just like to say a couple of words about how we look at this period of transition that we are in from the marketplace that we're in now to the marketplace that we hope we'll be in the future, particularly as alternative fuels penetrate the market and greater efficiency shows up in the marketplace, and a variety of other things.

But I think I'd just like to say a couple of things about we have to keep in mind that we live in a hydrocarbon economy and will for some period of time, and there are sort of two ways to go about dealing with that.

One is to try to adjust that economy very quickly and the other is to try to influence it to change. I think it's important to try to influence it to change, because I think it will be longstanding change that we will get as opposed to abrupt and disruptive change.

Over the next 25 years, there is an estimate that just to sustain the hydrocarbon economy we have in oil and gas, the investment required will be on the order of \$8 trillion, and that means that oil and gas worldwide will require over \$300 billion a year in investment, and that's across the board, refining, production, transportation infrastructure and all those things.

All the things Greg mentioned in his testimony about pipelines, increased production in the Caspian is part of that estimate and that is an expensive place to do business. And those investments are likely to be made in the short-term, but there are some things that sort of have an influence on the way in which that investment is made and the degree of penetration in the marketplace that oil and gas will show.

First, there are, I think four issues on the table that we have to deal with when looking forward on the oil and gas supply-demand balance and those are climate change, which is obviously a significant one and has a significant impact on the way in which this investment takes place.

One is energy security, obviously, which everyone has referred to here. But the other two, which are ones I would like to mention in passing, are the question of governance and the question of the erosion of globalism.

If you go back and look over the past 30 years, the energy economy in the United States has become fully integrated into the world. As everyone knows, we import a great deal of oil. We are an attractive investment environment for foreign investors who have actually invested in our refineries, our production and all those kinds of things.

We have gained efficiency in the marketplace, largely as a result of the removal of price regulation on oil and price controls on natural gas. And the industry

and people in general have responded by investing. In other words, that marketplace was competitive, it was international, it was global, and it was generally open.

We are seeing now some changes which suggest that globalism is eroding. We see a fair amount of resource nationalism in the world and that's not just in the way of extracting additional rents out of producers and investors, but also actually turning the country around to pursue a kind of energy nationalism that is counter to their interest. Venezuela is, of course, a very important example here.

As that country decided to essentially nationalize the industry, the industry and investing industry started to accelerate the repatriation of their capital and withheld investment.

And one thing that happens in the oil and gas sector is you have to continually reinvest to maintain production, because it is a declining asset. It continues to decline from the first day of production. So there's a constant need for reinvestment.

And so Venezuela, as you've seen over the past year or so, has eroded in terms of both the share owned by the state and now the shares in heavy oil owned by the investors. And that is a serious potential problem. It is a problem that we see elsewhere.

We may even see it in Russia, which has serious problems with sustaining oil production and gas production and is in the process of changing the nature of the investors' relationship to the state, and I think that's something we need to pay a fair amount of attention to, because it raises political questions, it raises investment questions, it raises commitment to the international economy that we all share and hope will benefit us all.

I would just like to say briefly something about natural gas, because that is relevant obviously to the Caspian, to pipelines and to future production. Russian gas production, as controlled by Gazprom, is in decline and it's in decline for several reasons, partly because they have not invested in new developments.

As the super giant fields decline, their share of production is going down. That means the question of their meeting their contractual obligations to the countries of Europe is in question, unless they can find alternative supplies.

And there are some alternative supplies out there for them. One is the independent gas producers in Russia are increasing production and although they're quite a bit smaller than Gazprom, they are making up some. The government has decided to increase prices in the domestic market, which has been essentially a free good for most of the Russian economy. And so the industrial sector will receive -- gas prices will go up to the industrial sector.

There will be shifts away from natural gas in the power sector, which is a quite large user of gas, to natural gas to coal and nuclear. And, of course, they will have to rely on increased deliveries from the countries of Central Asia, particularly Turkmenistan, and that is actually, I think, the core issue for Russian gas supplies is to what the net level of production in Turkmenistan will be to supply the Russian

market, and if all that gas will go to Russia or some of that gas will go west, as has been mentioned, through some of the pipelines.

Those I want to sort of put on the table as concerns, because I think it relates to the question of how we relate to Russia, but also how Russia relates to the world energy economy, and that's something that I think deserves our attention, your attention and others.

I think I'd just like to say, in closing, one thing about energy economies. We tend to look at energy compartmentalized, but the energy economy in this country is really quite impressive in a lot of different ways and it can be even better, and it should have several characteristics and we have what we call -- these are not the 12 Commandments nor the 95 theses of Martin Luther, but there's some things that you would hope that the energy economy could be.

The first is innovative, and this is a very innovative economy. And we talk about technology, but the idea is to be innovative in a way that that technology comes to the marketplace as quickly as possible.

It has to be clean. It has to be inexpensive. It has to be available. It has to meet the questions, as you've referred to, of people saying how much it costs to fill up their gas tank. That is clearly a concern.

And I think we can do that. We can go through the transition and reach those kinds of goals. It's not going to be easy and it's going to require a fair amount of work, but I think it's important and I hope we can discuss that and what the role of the Caspian is in meeting those goals.

Thank you very much.