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Brussels Forum

Energy Security: Politics, Policy, and Geopolitics

Mr. Craig Kennedy: We're ready go to. Afternoon session. You know what, it's Saturday afternoon. I would say we can all take our ties off now. You can just relax a little bit. Nik Gowing is already there. So just relax a little bit. It's Saturday afternoon. We're going to have a great discussion on energy with a fantastic panel.

And we've asked Sylke Tempel to lead the discussion today so it's over to you.

Ms. Sylke Tempel: Thank you very much. Thank you and welcome back after a lavish lunch. And it's, of course, due to the infinite wisdom of the organizers to have a panel on energy after the lunch break because I guess we all need a little bit of recharging here.

Energy, of course, and for you, all of you have attended the panel before the lunch break, energy is the crucial issue when we talk about development, when

we talk about growth. Energy has been the key to the economic success ever since industrialization. And of course, here we are talking both things. We are talking innovation, but we're also talking, of course, energy security.

Energy security will be exactly the topic of our panel this afternoon and I have the great pleasure to introduce an, indeed, very revitalizing panel to you.

I'll start at the left with Nikolay Mladenov who's been mentioned today here a couple of times, but now he's here on the panel. Welcome, Minister of Foreign Affairs in Bulgaria.

Next to him, we have Iain Conn, who is Chief Executive Refining and Marketing and Group Managing Director at BP. I'm glad I got all the Ns here in the right order.

We have Julia Nanay, Senior Director Markets and Country Strategies Group, PFC Energy and probably the most knowledgeable person about pipeline issues, especially in the Caspian area.

And we have Ambassador Richard Morningstar, who's Special Envoy for Eurasian Energy at the Department of State in the United States. And you are very familiar with Brussels because you have been Ambassador to European Union in 1999; is that right?

So welcome to all of you. I'd like to ask Iain Conn first, because you're in the energy business as a provider, actually, of energy. What, to you, really is energy security?

Mr. Iain Conn: Well, let me start by defining how I think of energy security. But I want to get at a why question, why is it so important right now, if I may. So energy security is about access to energy (technical difficulty) sure that it's accessed at a cost to the economy that allows the economy to function.

Now, there are three why questions that I think all of us should have in our minds as we're getting into this conversation. The first one is demand and dependency on energy. The demand for primary energy is going to go up by 39 percent worldwide between now and

2030 and 96 percent of the growth is going to be in the non-OECD. And most of it, about 80 percent, will still be coming from fossil hydrocarbons in 2030 so demand and dependency on fossil hydrocarbons is the first driver.

The second driver is the energy intensity of our GDP. It may interest you to know that, roughly, the world is converging on using one barrel of oil for every thousand dollars of GDP. When oil was $25 a barrel, it didn't matter. When it's $125, it does matter. And for China, it's about $200 per $1,000. So the energy intensity of GDP is also a big driver.

And the last thing that's a big driver is the price of energy, which is significantly driven by demand, of course, but also by the economies of producer nations and of course tensions in the world right now.

When you combine these three things, that's why energy security is top of the agenda today or certainly close to it.

Ms. Sylke Tempel: But you probably would agree that

we are in the field of geopolitics pretty soon because, I mean, we do have limited resources for that demand, don't we?

Mr. Iain Conn: Clearly, joining the resources to the markets in an effective way is fundamental and it's not just about technology and engineering. It's clearly about politics.

Ms. Sylke Tempel: Here we are right at the U.S. energy council, Ambassador Morningstar. Quite a bit ago, this council was founded and one probably could call it as one more transatlantic bridge between the U.S. and the EU. A not very small bridge, I'd say. But why exactly is it so important to you to see to it that there is a European and United States energy security?

Amb. Richard Morningstar: Well, I do get the question often about why would the United States be interested in European energy security. I might say, first of all, I like my job and that I would like to continue to have it so I feel very partial towards European energy security.

On a more serious note, it's important, I think, to us for many reasons. And I think the EU/U.S. Energy Council--of course, in the Unites States, we call it the USEU Energy Council, so it, you know, depends where you're sitting.

Ms. Sylke Tempel: We won't have a fight over this one.

Amb. Richard Morningstar: Right. But anyway, I think it's important for several reasons. First of all, as you all know, the economic relationship between the United States and Europe is huge. People forget sometimes that the U.S. and Europe has the strongest trade and investment relationship in the world, particularly on the investment side. And energy security relates directly to economic security. And so an energy-secure Europe is in the U.S.' interest and an energy-secure United States is in Europe's interest.

Secondly, technology is advancing. The EU/U.S. Energy Council gives the opportunity for us to work on research and technology issues, as well as regulatory

issues, which can help both sides of the ocean. We work very closely on some of the more political issues relating to energy security. We've synchronized our views, I think, with respect to how to deal with the southern corridor, for example, working with Ukraine, working with Russia, any number of other issues.

And finally, I think that the European energy security is critically important because whether it's the United States, Europe, Russia, whoever, it's important to have a balanced and diversified energy policy. And we need to work together towards achieving that in Europe, The United States and, frankly, the rest of the world.

Ms. Sylke Tempel: If I may do so, I would like to pick up the balance in diversified energy and try to focus it a bit more. In preparation for this panel, what occurred to me again was a couple of decades ago, a German Chancellor, when asked about what he sees as the threat of the future, very ominously said, I only say it's China, China, China.

Now, when we were having this panel last year, we talked about the importance of natural gas. And then the opinion on this panel was clear, it's Russia, Russia, Russia. Are you Americans or is America still as worried about energy dependence of Europe when it comes to Russia?

Amb. Richard Morningstar: I wouldn't frame it that way.

Ms. Sylke Tempel: I thought so.

Amb. Richard Morningstar: Well, I try to be a diplomat, even though I'm not a professional diplomat. No. Seriously, I wouldn't frame it quite that way. Russia is going to be an important player in world energy markets and in Europe for the foreseeable future.

But I do think that it's important that, for any number of reasons, that an energy policy be diversified. And when you look at countries, whatever country it may be, take Bulgaria with Foreign Minister Mladenov, that it's important to have that balanced

policy. And what the EU does internally, I think, is a lot more important than any individual pipeline, whatever pipeline, for example, were to come from the Southern Corridor.

So I think that when one looks at energy security, one has to think more than just pipelines. In the case of Europe, one has to think about interconnections, one has to think about more LNG, about unconventional gas, such as shale, nuclear in certain countries, renewables, energy efficiency on down the list. And I know when President Obama is asked, well, what sources of energy do you support? He'll say, all of the above, because there is no silver bullet.

The key is diversification. And I don't think it should be necessarily put in terms of dependence on Russian gas. I think that may be a fact of life, that in some countries Russian gas is the sole source and it should be diversified. But not to be anti-Russian, but just because it makes sense.

Ms. Sylke Tempel: You make the job really easy for

me because the only thing I had to do right now was to watch the expressions and the faces of Julia Nanay and Mr. Mladenov, who, of course, is also diplomat and probably more restrained also in his facial expressions here. But I'd really like--we'll get to the shale gas and renewables and infrastructure and no silver bullet and diversification, but I would really like to stay for a moment in the pipeline business and ask the two of you when we talk about diversification, especially when it comes to natural gas, unfortunately we do not have a global market where we can--this has to be transported. And in the transport lines are, to say the least, very concentrated right now.

Now, Mr. Mladenov, perhaps I ask you first because, you know, you're in the middle of it actually in a way. How good are the chances to diversify when it comes to pipelines, especially from the Caspian region or from Russia, for that matter, the southern way?

Hon. Nikolay Mladenov: Well, first of all, I'm more of a politician than a diplomat. So as a politician…

Ms. Sylke Tempel: What exactly is the difference?

Hon. Nikolay Mladenov: Oh, plenty of differences. I think politicians speak more frankly and are held accountable…

Ms. Sylke Tempel: Notice that, please. Notice that.

Hon. Nikolay Mladenov: …and are held accountable for what they say. As a politician, I sincerely love my country, but I also love Europe. And I want to see that both my country and Europe get the energy at the lowest possible price so that this helps our economies grow. And I link these two particularly because I think when we talk about diversification, we need to think particularly about two things, one is how we diversify the routes through which we get our energy.

Now, whether this is pipelines or LNG is now an option that we must seriously be discussing. A few years ago, we'd have only been talking about pipelines. But it's also about how we get different suppliers. And in Bulgaria we have a specific challenge with this. We need to address both. We need to get different routes.

We need to get different suppliers, not because we don't like our suppliers, but because it's simply not good to have only one supplier.

This is very much valid for Europe, as well. But what is even more valid for Europe is that if we want to have a really integrated Europe with its own foreign policy and everything, we need our own energy policy as Europeans, a common energy policy. And this is a big challenge for all of us and that means effectively not just the interconnectors, but it also means linking our both electricity grids much more closely as well as our gas grids, increasing our storage capacity in certain parts of Europe, particular challenge indeed. Because when one talks about the dependency of Europe as a whole on a supplier, that dependency varies. It varies from country to country, from region to region.

When you talk about a particular pipeline, that particular pipeline might mean, you know, 10, 15 percent of European gas consumption. But for countries like mine, it may actually mean more than that. So this

is a very big and very, very important challenge. What we need to do is we need to make sure that we have a much more cost effective way of getting gas into Europe now, particularly in those part of Europe that are dependent on one single supplier, through different routes and through different suppliers. And I'm sure we will get into the different suppliers part because I think that's a fascinating part of our discussion.

Ms. Sylke Tempel: We do in a moment. We do in a second because I now will spell out the dirty N word. How likely is it that we get to Nabucco pipeline, Julia Nanay?

Ms. Julia Nanay: Well, I'm not going to focus just on Nabucco. I'm going to focus on the fact that a lot of countries in the Caspian region, including Azerbaijan, which has been a very important ally for Western oil industry interests and also for Europe because of oil, is going to depend on gas in the future.

So really what we see as the driver here, in terms

of the initial supplies of diversification for Europe, if it's going to be pipelines, and I agree LNG is important, and will be Azerbaijan and Azerbaijan's gas. So the question is what will that gas do to reach markets? And I don't think that the issue of whether it's Nabucco or another pipeline is going to be as important as making sure that that gas is able to get out across Turkey and into Europe. And I think that's what a lot of the debate is about, is how is that going to be done. A lot of pieces of this puzzle have to fall into place, not just Bulgaria, but Turkey. There's a lot of unsettled issues, in terms of how this gas will get across Turkey. But I have to say that, in terms of both oil and gas, BP has been a driver of this because they are the ones involved in the most important projects in Azerbaijan along with Statoil and…

Ms. Sylke Tempel: Is that looking at gas fuel?

Ms. Julia Nanay: ...Total. The gas and also in oil. I think BP and Statoil are critical interests in terms of both of the largest projects there in total, in

terms of gas and future gas.

So you have European companies that are really driving this, together with the countries. And the U.S. interests are interesting to watch because in the end, its U.S. oil companies that have gotten very much involved in the unconventional gas in Eastern Europe. So there is a distinct interest of the U.S. oil industry and basically realizing some of these shale aspirations, which may be slower, but U.S. companies are involved in. Also in Central Asia they're involved. So the U.S. has a lot of commercial interests that are part of this, as well.

Ms. Sylke Tempel: Ambassador Morningstar, you wanted to remark a little and then, of course…

Amb. Richard Morningstar: I'll, you know, go again to the, you know, the premise of the question and I agree pretty much with what Julia said. And I think the policy has evolved over the last few years, both in the United States and more recently perhaps in Brussels. And I think that we were perceived, certainly three

years ago, that we were very Nabucco-centric in looking at the Southern Corridor. And from a strategic standpoint, you know, Nabucco is a good thing. They get 30 BCM of gas at probably does a lot in creating more diversification. But like any pipeline, Nabucco has to be commercially viable. And I think it's become apparent that, at least in the first instance, that there is not enough gas to fill a full Nabucco pipeline.

So our policy, which I've stated and others in the U.S. government have stated now many times, is that we support the Southern Corridor. And any pipeline coming from the Southern Corridor in the first instance is acceptable to us. But we always say it with two conditions, that gas would be supplied to vulnerable countries in the Balkans and that there be clear guarantees as to how any new pipeline would be expanded as more gas becomes available because there will be more gas. There's going to be a lot of gas, but it may not be--we'd have maybe 10 BCM coming to Europe in 2017

or 2018 and maybe in the early to mid-2020s it'll get up to 25, 30, 35, maybe more. And a lot of that gas will come from Azerbaijan and projects that are known today, but still have a long way to go.

Ms. Sylke Tempel: Mr. Conn and Julia Nanay, you wanted to comment directly on this. Mr. Conn, why don't you go ahead?

Mr. Iain Conn: Well, I wanted to come back to the job we're trying to achieve here, which is to clearly increase the gas-on-gas competition in Europe. Why? Because luckily, Europe's surrounded by gas and secondly, because natural gas is going to take market share. It is definitely going to take share over the next 30 years. Europe's very fortunate because it's surrounded by gas. It's pipeline-connected to Russia. It's pipeline-connected to North Africa. It's pipeline-connected to the North Sea. So our job is to encourage gas-on-gas competition, as the Ambassador says.

I think the second point I'd make, if there was a mistake made, and I'm going to get into trouble for

saying this, it was to name the Southern Corridor Nabucco. The Southern Corridor is a gas corridor and no one knew how big it was going to be or indeed, who was going to build it. And the reality is, the most important thing, is that Caspian gas is opened up to Europe. Now, BP is the largest foreign investor in the Caspian and the…

Ms. Sylke Tempel: You've just--a year or two ago, you started to develop a new fuel that is bigger than just the Shandonese (ph), too, I gather, right?

Mr. Iain Conn: So we are the largest investor in the Caspian, but actually we're the largest foreign investor in Russia, as well. And I know some people therefore worry that we can't manage the two. I want to make the point that…

Ms. Sylke Tempel: Can you?

Mr. Iain Conn: Yes, I think. But this is all about both, it's all about and. This is about expanding and diversifying pipeline routes from Russia and from North Africa and from the North Sea and from the Caspian. BP

is absolutely committed to the Southern Corridor. The question is how do you make it the most cost-effective in the first phase? And in the first phase, there's only 10 BCMA available from Shandonese into Europe. However, the great thing about gas is it's compressible and as long as you get the piece of pipe in the ground at roughly the right size, you can make these pipelines grow. And we are very excited about what could happen in the Caspian. We believe we'll find more gas in the Caspian. We just haven't found it yet.

Ms. Sylke Tempel: Can I ask you next year again then?

Mr. Iain Conn: Sure.

Ms. Sylke Tempel: Okay. Julia?

Ms. Julia Nanay: I think there is more gas in your ACG oil fields already. There's deep gas coming on, there's Absherone, which Total is developing. But I think the other question that the U.S. has tried to address is how can you bring Turkmenistan into the European equation? Because if you look at the country

that’s sitting on the largest gas reserves, one of the largest in the world, it’s really Turkmenistan. And it has enough gas to feed a pipeline across Afghanistan. It could feed a trans-Caspian pipeline and it feeds China. It can feed Russia.

I mean, Turkmenistan is really the country the West would like to unlock in some way and tie it--because, you know, when you tie these countries to Europe, it’s a matter of values, as well. You know, one of the things that the U.S. always stresses, in terms of Europe, is we share values. These are democratic countries and we want to make sure that Europe thrives. And that’s another reason the U.S. is interested because energy, as Ambassador Morningstar pointed out, is at the heart of economic development. And so in order to, you know, get these countries to share values with Europe and to make sure Europe can develop, we want to bring more gas in. And the question then becomes, how can you get Turkmen gas into a big enough pipeline and get the Azeris and Turkmen to work

together? So, yep.

Ms. Sylke Tempel: Minister, I don’t know if you wanted to remark on this

Hon. Nikolay Mladenov: Just to stray away a little bit from Turkmenistan. For the first stage of what we’re discussing on the Southern gas Corridor, the key question right now is how do we make the interconnectors between the various countries along the way that still haven’t been built? We face a particular challenge. We can transit Russian gas to Turkey, but if the tap is switched off, for some ungodly reason, which we hope will never happen again, there’s no way for us to actually get gas from Turkey or from Greece into our country and north because the way that the system is designed, it doesn’t work.

Now, focusing on these interconnectors will, I think, help us bridge this period and the first stage in which we need to have the ability to pump in more gas and then perhaps move to bigger pipelines. But when we talk about Turkmenistan and other options, I think

we should definitely look into the option of Iraq. Iraq is right out there for us. It's very close, historically connected to Europe. It shouldn't be that difficult in the longer run, perhaps in the medium run when we solve the security issues. But there are sources. There are sources to get gas in, but we lack the connectivity for it. A little bit like an electricity, except vice versa. We lack the connectivity to get electricity to places where it is needed and we have plenty of it in places, you know, where we have the capacity to make it. So it's a bit of a new challenge for Europe, how to get more gas-on-gas competition, as you said, but also how to make sure that we get more electricity to other places where that is needed.

And in the Balkans we have both challenges. In the Western Balkans, we have the electricity challenge. In the Eastern Balkans, we have the gas challenge.

Ms. Sylke Tempel: I'd like to throw in yet another key word that leads us away a bit from the field of the

great game into your politics, into Europe itself or the United States. To all four of you, how do you think will shale gas, either in Eastern Europe or in the U.S., have an impact on the way you define energy security? Mr. Conn, perhaps you would like to start.

Mr. Iain Conn: Well, I think first of all, shale gas needs to be put in context. It's not a new product. It's methane and it's has all…

Ms. Sylke Tempel: But a new technology.

Mr. Iain Conn: We've always known it's there. The thing is that technological advances have allowed us to access it commercially. Shale gas is clearly going to revolutionize the supply of natural gas in North America, which, in turn, is going to give the world more LNG that was heading to the US. There's a big question about whether the U.S. will permit export of natural gas. I believe it will happen either as natural gas or as petro chemicals made from natural gas or the Canadians will do it. So I think that's only a matter of time.

Now, back to your question about shale anywhere else. I think there is shale in Europe. What no one knows at the moment is how big it will be. It will need to be very big to make a really big difference. And let's not forget that Europe's lucky enough to be pipeline-connected to large gas resources already, so making shale competitive will also require it to be tied into the European infrastructure. The reason it's been developed so quickly in America is that the private individuals that own the land also own the mineral rights. In Europe, that's not the case, so trying to persuade a farmer in the U.K. to allow someone to drill for shale on their land and then put pipes all over it is a bit of a different thing when they don't get the rent from it.

Final point I'd make is shale, if there's going to be a big change in the world to do with shale gas, it's going to be if and whether China can find large shale because right now, there's a war for hydrocarbons going on in the world for the reason of the drivers I gave

you earlier. And the one superpower that doesn't have enough energy is China and she's buying up hydrocarbons everywhere. If shale is found in large quantities in China, and there certainly is shale in China, that would certainly change the game for the way natural gas would change the world's energy security.

Ms. Sylke Tempel: Mr. Morningstar.

Amb. Richard Morningstar: I would agree with that. Let me say a couple of things, one with respect to U.S. shale production. One thing it shows, if nothing else, is the huge unpredictability in global energy markets and how difficult it is to forecast, looking out 5, 10, 15, 20 years.

We have an independent bureau within our department of energy called the Energy Information Administration, which some of you may have heard of. In 2005, there were projections of huge imports of LNG into the United States. By 2010, the projections would be that there'd be virtually no LNG imports into the United States

because shale had developed so quickly. As Iain said, that certainly has freed up a lot of LNG.

As far as exports of shale being liquefied and exported from the United States, it's definitely a possibility, but it's still, we have to wait and see how much and there are issues involved. Anybody who would be exporting from the U.S. has to get a license. The license, in granting the license, I believe it's the Department of Energy that does so, they have to look at what the effect would be on domestic U.S. markets, what the effect would be on price and so on. So I believe there will be exports from the U.S. In fact, there has been a license, at least one license that's already been granted.

I think the question that we don't know is going to be how much. Now, with respect to shale in Europe, let me just very briefly state what our policy is on that. First of all, member states actually make their own decisions in cooperation with Brussels as to what they want to do with respect to shale. The only thing that

we hope is that as those determinations are made--and there are environmental issues. There are the issues that Iain brought up. There are geologic issues with respect to shale in Europe. But that whatever decisions are made, that they be based on some kind of scientific evidence.

I might add that there's time to put regulatory structures in effect. It's going to be years before there's any meaningful production of shale in Europe. There's time to set up the appropriate regulatory structures. And I think it's also important just from an energy security standpoint to at least know it's there before making final determinations as to what to do with it.

So clearly, these are issues for the member states. There are issues. There need to be appropriate regulations. It has to be done safely. We hope all that's done in the right way.

Ms. Sylke Tempel: Can I broaden your definition of costs involved as a part of energy security a bit when

it comes to shale gas? Because the process, the technology to get out shale gas is called fracking and it might have quite an environmental impact. And I'd like to ask you, Minister Mladenov, because Bulgaria, from what I know, it does have obviously some shale gas resources there, but that's something that you have to explain to your constituency here. That's environmentally speaking. That's not an easy thing to do to push huge amounts of water and chemicals into rocks in order to get the shale gas out. So there might be costs involved if you cannot over see right now. How do you feel about that?

Hon. Nikolay Mladenov: Well, particularly, if you have to do it in a tourist or agricultural area, and I think that this is--part of the problem that we have with shale gas in Europe is defining the debate and defining the debate is extremely important. And really now is the time to do it because if the debate is not defined on the basis of what is the cost, the environmental cost, the risks, the technology, et

cetera, but also the benefits that shale gas would bring to the energy independence of a country or a region, then we are likely to end up in a situation in which there will be endless opposition to shale gas in Europe at a growing rate without an informed choice, without an informed debate.

And this is why that the government has now suspended shale gas research in Bulgaria, precisely for the environmental reasons. But what we'd like to see is a very strong, very active debate that looks at the pros and the cons, that looks at the environmental impact on the technology before a decision is taken because obviously this is a resource for independence. It's a very important resource. However, it touches on issues that are extremely sensitive to public opinion.

As Iain said, if you're a farmer farming your lands, you wouldn't be happy to have somebody start drilling in the middle of them if you don't see the reason for that, the immediate benefit of that. If there's a risk for that in destroying your tourist

industry, again, there'll be a lot of opposition. So an informed debate is very much needed and we still don't have that Europe. The commission has undertaken some excellent legal studies, the European commission, on shale gas in various countries and all that. The European parliament has taken a lead on debating this, but we need to now translate that to our domestic environment and put it in a much more informed framework.

Ms. Sylke Tempel: Mr. Conn, I can see you want to contribute to this debate right here, right now.

Mr. Iain Conn: Well, firstly, BP talking about drilling being safe might seem a strange thing to do, but I do want to be clear with you. Of all the companies in the world that is committed to being safe in drilling, I can assure you it is BP. In fact, my colleague, Bernard Looney, is here today who actually drills every single well, not himself I should add, that BP does in the world.

I should just give a couple of points of view. We've been drilling wells for 120 years and the technology for drilling for shale gas is no different from the technology of drilling for other gas so that should give you some comfort, in terms of actually drilling. And when we drill for natural gas, we drill through layers, we drill through aquifers that people get drinking water out of. We drill through saline aquifers that have got salt water in them. We drill up to 30,000 feet. The shale gas deposits are typically hundreds to thousands of feet away from any source of drinking water. That's the first thing.

Second thing is when you plan a well, you have to plan it really carefully to make sure it's in the right location and that there are impermeable layers between the hydrocarbons and anything that man might use. Where there's any risk associated with that, we do something called zonal isolation, which means we actually isolate off to make it impossible for one layer to flow to another.

And then this subject of fracking, fracking is simply putting a large amount of pressure onto rock so that it breaks open so that there's more surface area so that the gas can flow out. The chemicals used, if they are used in fracking, along with water, are mainly chemicals that are registered under Reach already in Europe, for example. And normally when we use water in fracking, we often use brine. So we use subsurface water that's not potable for use as drinking water in the first place and it's reinjected.

Are there risks? Yes, there are risks, but actually they are very, very manageable. And I totally agree with the minister that we have an education campaign to go through in Europe.

In the U.S., it has been generally broadly accepted as being safe and desirable. We have an education campaign to do and now is the time to do it.

Ms. Sylke Tempel: On this rather reassuring note, of course, I'd like to open for the panel. We haven't talked renewables, we haven't talked nuclear, we

haven’t talked all sorts of things. I have a first question here and then we go over here, third question somewhere over here. I’ll take you in the second round, if you don’t mind. Thank you. So microphone goes over here, please.

Peter Vis: Hi, I’m Peter Vis from the European Commission working climate change. I was struck by the ambassador’s remark that the EU’s policy should be based on scientific evidence. That’s welcome, of course, but I’m thinking we’ve been talking about gas pipelines infrastructure that is expensive to build and which runs across a number of countries. Arguably, we could be creating risks in that sort of project. But my question is, where is the energy efficiency story and where’s the renewable story? Surely that is a major part of our energy security agenda. Thank you.

Ms. Sylke Tempel: Is your question directed to a panelist specifically? Because it would make things a lot easier because the field is so broad. Who do you want to answer this question?

Peter Vis: I wonder if perhaps the ambassador and the minister would reply from different perspectives.

Ms. Sylke Tempel: Okay. You get the energy efficiency. Here's the second question. Can we have the microphone over here?

Andreas Kramer: Andreas Kramer, Ecologic Institute and I direct my question to Ambassador Morningstar, and Minister Mladenov for the second question. One year after Fukushima, I think it is fitting to talk about nuclear in the context of energy geopolitics and that is where I'm leading to. Now, after Fukushima, we have taken stock of the economic case and the risk profile of nuclear power and what we found is that it has not outgrown the need for subsidies for liability waivers, for debt guarantees or whatever. With the economic case out of the picture, what are the other important strategic reasons for the US to cling on to nuclear power?

And the second question to both you and Minister Mladenov, given that there is no economic case, no

commercial case for nuclear power, where does that leave the remit of the international atomic energy agency? How do we reform it? And with the third pillar essentially cut out of the non-proliferation treaty, because there is no case for civilian nuclear power, how do we reform that? How do we rearrange the geometry of the nuclear non-proliferation treaty if the third pillar is out of the picture? Thank you.

Ms. Sylke Tempel: Yes.

Charles Grant: Charles Grant from the Centre for European Reform. It's a little unfortunate to discuss energy questions in Europe without any Russians being around, which is just a shame, but let me just bring them into the conversation. They've often said to the Europeans, you'd better treat us well on an energy relationship or we'll send our gas east to China and other markets. But now it seems in Central Asia, not only the Turkmen, but other central Asian countries plan to send their gas east to China.

As Iain Conn has said, the Chinese are beginning to develop shale gas and the Chinese are not prepared to pay the kind of prices that the Russians are asking for gas anyways. Does this mean that the Russians cannot impose this choice on us, in fact, they're obliged to send their gas west, and therefore we can be more relaxed about any relations with Russia? We're in a much stronger position in Europe.

Ms. Sylke Tempel: Thank you very much. Can we perhaps start on the issue of energy efficiency? Ambassador Morningstar, would you like to begin?

Amb. Richard Morningstar: Oh, okay. I'd love to make a few brief comments on all.

Ms. Sylke Tempel: Go ahead. Please do so. We're not going to restrict anyone.

Amb. Richard Morningstar: But basically, first of all, on energy efficiency, I mean, that has to be one part. When we talk about balanced and diversified policies, that has to be one part. Energy efficiency sometimes is called the low-hanging fruit.

Unfortunately, it may be a low-hanging fruit to some extent from a technical standpoint, but it's not a low-hanging fruit from a political and a cultural standpoint and I think that those issues have to be addressed.

I think that your question leads to a whole other question that we hear sometimes, that is that if we create a whole lot of gas infrastructure, does that destroy the incentive to do some cleaner forms of energy. I don't want to get into a long answer. I think, again, it has to be balanced and that, yes, that has to be taken into consideration. But I don't think that we can take the chance of not working on gas, which is a lot cleaner than oil and coal.

The question - I'll remember the second question in a second.

Ms. Sylke Tempel: It was the energy question. Why…

Amb. Richard Morningstar: Oh, nuclear energy and then Russia. Briefly, on nuclear energy, I'm not sure I agree with the premise. If you're right that nuclear

power is uneconomical, then they're not going to be built because there won't be anybody who will take the commercial risk to build nuclear plants.

If in fact, they are commercially viable, if all of the appropriate safety standards are met, if there's a regulatory structure in the places where nuclear power might be used so that there are assurances that plants can be maintained, that they're safe and that there are emergency plans and so on, all of those conditions can be met, nuclear is still one of one of the cleanest forms of energy, and it can't be ignored.

Ms. Sylke Tempel: That's a lot of ifs, though.

Amb. Richard Morningstar: They're ifs, but we'll see how it works out. The third point, with respect to Russia and China, Russia and China for years have been trying to negotiate--Russia's been trying to negotiate a gas agreement with the Chinese. They can't agree on price. And China's going to continue to insist on low prices from Russia, and they'll say, hey, you don't want to sell it at that price, and you know, we'll

still use coal. We'll look at, you know, we'll look at other alternatives like shale.

I don't think that Europe should ever let itself be, for lack of a better term, blackmailed, and I'm not saying they are. But if they were to be, they just shouldn't let that happen. Europe is still the best customer Russia has for gas, and they're not going to give that up. And therefore, I think it's important that Europe continue to do what--the EU continue to do what it started to do, utilize the third energy package and to enforce their regulations. And I think Russia will be customer--or will be a supplier for a long period of time, whatever it sends to China.

Ms. Sylke Tempel: Is there anything you want to put up on the Russia case?

Ms. Julia Nanay: I'm going to mention also on energy efficiency, I think high prices help people use less and become more energy efficient. I think that's true on gas and oil. And one of the issues for Europe, of course, is that we can't get a handle on what gas

demand numbers will be in 2020 and 2030 because they keep being lowered. And that's a problem for Russia as well, because it hasn't been able to ship as much gas as it thought it could ship into Europe year after year over the last couple of years.

On the Russia-China question, I think what's interesting about it, and they may end up reaching an agreement at some point, but the oil indexation and Russian prices is not something that the Chinese are willing to work with for gas.

And so if Russia goes and sells gas to China under a different contractual or indexation terms than it does to Europe, then it sets kind of a prerogative. And I think that's a problem for how this relationship evolves. Now, obviously, for the time being, Central Asia is able to supply quite a bit of gas to China. And there is the shale issue, but Chinese gas demand is growing very quickly and China needs to also diversify away from coal. So you can see that the Chinese use of

gas is going to be important. And who knows when the shale equation will come in in a big way in China?

That's also the issue for Europe is that all of these alternative pipelines that we're talking about are not going to be in place until like 2018, 2020, so there's a lot of years to get through here that will be interesting how Europe then solves the energy equation in the interim.

Ms. Sylke Tempel: I just would like to Minister Mladenov to perhaps pick up also the question on nuclear energy. I know we are jumping from energy to energy and place to place here, but obviously we have to do a bit of jumping here. IOEA and the third pillar non-proliferation are the key words. Would you like to pick up this question?

Hon. Nikolay Mladenov: Well, let me, first of all, also start on energy efficiency because I think it's very important. I can't say that I disagree with anything that has been said. Just to point that in

particular cases, it's an issue also of what are the costs and the economic efficiency of what we do.

And this is one issue, for example, in which we will now be, over the next year, focusing particularly in Bulgaria because have an extremely energy efficient industry. And part of solving our own energy dependence depends also on how we address the energy efficiency question ourselves.

A quick point on nuclear, extremely important as well, particularly, I don't think that nuclear energy is over. What I think, however, is that Europe must live up to the challenge that we have now after Fukushima and really come up with common standards on nuclear energy and use. And I know that certain countries have abandoned the use of nuclear power or are aiming at abandoning it. Others will continue, but we need to have common standards that are as high as possible. And this is important for everyone.

We are also in a very complicated project on whether to build or not a second nuclear power station,

which we've inherited from the pastures of Bulgaria and Russian project. They were very careful with it. I don't think it will go ahead as a Bulgarian/Russian project. We'll have to restructure it in a manner that is both effective financially, economically, but also lives up to the absolutely highest standards possible of nuclear safety.

On the non-proliferation treaty, that is the million dollar question, isn't it, that we've been struggling for about a million years now? It is in terms of what are the international challenges politically, this is the most important question today. We face global non-proliferation regime, which has been consistently challenged and undermined by states and non-state actors.

We need to--we are seeing, because of that, how nuclear--how energy issues are becoming a part of our security agenda. We have now a NATO security concept that talks about energy security as part of our own understanding of security and political consultations

within the alliance. We need to get back to where we got to at, I think, what is it, a year ago, at the NPT review conference, or maybe two years ago, and pick it up from there in a very, very strong manner, notwithstanding the fact that we will have certain countries around the world that will not want to subscribe to an updated regime.

This is one and they're all--this also relates to all kinds of other issues that are in the international security agenda, but they've been there for too long. But go back to where we got two years ago and understand that certain countries will not live up to their commitments, understand that this is, in fact, a security challenge today for us and take the debate from there. Because if we go back to the question of, you know, the North Atlantic Alliance and the fact that we have energy security as part of our political agenda for security today, we've put that on paper, I think, about a year ago. I don't think we've done much. We haven't even thought about the consequences of what it

means to put that in our agenda. We will work very hard to get it on because we believe that this is a case having been a country that has suffered so many energy security problems. But we need to get a broader consultation with partners on that means.

Ms. Sylke Tempel: Thank you. Mr. Conn, too, did you want to add something onto that?

Mr. Iain Conn: I just wanted to come back to Peter. This is an excellent question about energy efficiency. I'm going to say something that wouldn't surprise you, which is that I think high energy prices are a good thing. I am going to say a couple of things that may surprise you, which is that BP made 16 percent return of $20 a barrel and we make 16 percent return on $125 a barrel, and there are two hidden ends.

One of them is costs. Costs and price follow each other. And the other one is governments, who tend to follow around excessive rent quite well. So you don't need to worry about us profiting from it. Why are high prices good? Exactly, as Julia said, it really does

change behavior. And I believe that energy efficiency is--there is a silver bullet in all of this and it is that only one is energy efficiency.

The second reason for us pursing it very strongly, as I said at the beginning, Europe and the U.S. use about $130 worth of energy for every $1,000 of GDP. China uses $200. It's one of the only competitive advantages against China we still have. Our jobs should be to driving down the energy intensity of our GDP.

That may surprise you coming from someone who looks for and produces energy, and I'm really excited about what's happening because there are behavior changes happening right now, and they're being induced by a combination of price and the climate change debate.

Motor manufacturers are now making electric cars because their customers want them, not because they're being incentivized to do so. I think that's very good. And the world is starting to find new sources of gas, which is going to, in turn, drop the cost of energy intensity of our GDP. So I just want to underscore that

natural gas will be really important and we've got to focus on keeping the energy intensity of our GDP falling and falling faster than places like China.

And my final comment, just on Russia, and Charles, thanks for introducing that. I mean, Russia--this may also surprise you too. Russia has been a great friend of Europe in the matter of energy. I know that we've had a couple of difficult moments in the last decades, now that all the way through the Cold War, Russia kept energy flowing to Europe.

And the other, this is just an engineering fact, once you join a gas field to a market with a piece of pipe, the incentives are so strong to keep the gas flowing, and Russia's entire economy depends on oil and gas. We are really lucky to be pipeline connected to Russia, but we also need to be, as the ambassador says, able to demonstrate that we can use less energy when we want to and we can diversify the energy routes when we find out the sources because that keeps everyone honest and keeps our cost of energy in our economy down.

Ms. Sylke Tempel: This is going to allow me to say this. I begin to wondering who really is a diplomat on the panel. We have a question over here. You've been waiting for quite some time. Then we have one here, then we have one here. The second round, I'll keep you in mind, certainly.

Trudy Rubin: Trudy Rubin, the *Philadelphia Inquirer*, I'd like to a question about a more literal issue of energy security. How much of the current high oil prices do you attribute to the situation with Iran and the possibility of war? And on our Iran panel, one of the panelists said that those risks had already been factored into the high oil price. I'm wondering what you think if this situation remains unstable for several months, how would that affect prices? And in the event of a conflict, even if, as U.S. military claims, A, they don't think the straits would be closed and B, if they were, they could open them quickly, but how do you think the various possible scenarios, a

strike on Iran and its aftermath, would affect prices, and what would that do to Europe's economy?

Ms. Sylke Tempel: I'm following (unintelligible) Second question, over here, please.

Alfredo Valladao: Yes, I'm Alfredo Valladao from Brazil. As you all know, there has been humongous discoveries in Brazil (unintelligible) to deep water, but not only in Brazil. Now we have a lot of discoveries also in Argentina and on the African coast. And if we add to that the Venezuelan potential and the new contracts with Mexico and the United States and the Gulf, et cetera, how do you evaluate the possibility that Atlantic hydrocarbons, and particularly South-Atlantic hydrocarbons, can change the picture of security?

And second thing is about biofuels. As you all know also, Brazil is very important in the biofuels fuels with ethanol from cane and Brazil is trying to develop in Africa, too, biofuels from cane. So how all this

picture goes can change the whole picture on energy security.

Ms. Sylke Tempel: Thank you. We have a third question over here.

Steven Everts: Yes, thanks very much. My name is Steven Everts. I work for the EU in foreign policy. A fascinating discussion, which I think has underlined what all of us sort of knew already, that there are all these interconnections in energy choices and foreign policy. And I wanted to take that a little bit further and connect this panel's discussion with the one that we had earlier this morning about sort of the Arab Spring and where that's going next 'cause it's well known that the resource holders of energy have often had some difficulties in this sort of governance, be it in internal aspect and also their external behavior that we found sort of problematic. And I sort of wonder if the panel, particularly Iain Conn and Minister Mladenov and perhaps also others, could talk a little bit about, as the Arab revolution unfolds to its next

stage in Egypt or in Libya or in Iraq, as Mladenov mentioned, there's another sort of aspect to this, How can we ensure that the energy choices that got made there prevent sort of a repetition of the situation that we found in the past, so that energy resources are used in a better way for the broader sort of political society's needs that meets our energy objectives for sure, but also makes sure that it fits with our broader political shared objectives of underpinning the exciting and positive changes on the way in North Africa, in particular?

Ms. Sylke Tempel: Are you talking fossil fuels or are you talking also variables?

Steven Everts: Also, I very much include the renewables agenda because as everybody knows, there are exciting ideas out there about, you know, solar and how do you connect that with the European grid and things like that. But that could, indeed, be part of this more forward-leading, positive agenda.

Ms. Sylke Tempel: So, yeah, Julia Nanay, do you want to…

Ms. Julia Nanay: I'll do the Iran question first because that's the short-term issue is supplies. I think the market has factored in that there's enough spare capacity to deal with the current situation. You have outages in Sudan, you have outages in Yemen. Iran is certainly selling less. But the question going forward is how much spare capacity will there be if there is a bigger disruption from Iran than we expect? You know, once the EU stops taking Iranian oil in July and then you have some Asians that are taking less, the question is really how much spare capacity is there? It's how will the markets deal with--and if there's any other outages, like Nigeria. I mean, there's always the unexpected.

And I do believe if there were to be any sort of military strike, that, clearly, the prices could shoot up from where they are. And, you know, the issue of South America, I'll also touch on that. I think it's--

and also East Africa. Those are two big areas that are coming on. But you always have to, again, expect the unexpected because you're dealing not only with private companies developing these resources, but governments. And certain things happen in these countries that can, you know, political risks increase. It's hard to say how quickly these resources will get developed, to what extent.

But they will make a difference. There is no question that the world is going to benefit from additional gas from East Africa and also from Brazil. I mean, Brazil is going to be, you know, one of these very, very important producers, but, you know, how much and at what point is going to be the interesting question. Governments control resources and that's what determines it.

Ms. Sylke Tempel: Mr. Conn, would you like to also add something to this question or also take up the Arab Spring question?

Mr. Iain Conn: Okay. A minute on energy prices for oil price. There are four things driving the oil price. Clearly, demand. The cost of the marginal barrel, which actually has now got up to about $90 a barrel, and thirdly, the fact that the economies of many producer nations can't be balanced at less than $90 a barrel, notably Saudi Arabia.

And, of course, fourthly, the tensions, notably the one you've just eluded to with Iran. I'm a former oil trader. I think that, well, you should never underestimate the effects of uncertainty on people's minds. I think if there is a major disruption, there will be a spike in the oil price.

And from what I've eluded to, I don't think there's much major downside in the oil price. I think the oil price is going to stay moderately high and it will have spikes upwards, depending on situations. I do think, if you look back at the mid '80s and the early '90s, you don't have to shut the Strait of Hormuz to cause quite a lot of problems. You just need to fire the odd

surface-to-ship missile at a few tankers to make it quite uncomfortable for people to want to move through it. But I think the international community will do something to secure it, but you should expect volatility.

On the Arab Spring question, I think it's a bit like--China's the last place you'd make biofuels because they don't have the land and they don't have the water. Probably, most of the producer countries in the Arab Spring area, if I can define it that way, are mainly going to be about hydrocarbons. It's very unlikely. I mean, yes, there could be concentrated solar-thermal developed, et cetera, but actually, I think the local choices will be about hydrocarbons. The best thing that our industry can do immediately in the aftermath of any of these dreadful situations is to demonstrate our commitment to the country and get the infrastructure working again. We did that in Egypt. We are the largest foreign investor in our industry in Egypt and we are going to go back into Libya. We have a

job in actually developing the natural resources safely and getting the economies flowing again.

And, yes, I think, locally, people need to use oil and gas for the local community, as well as for the foreign exports of oil and gas. And that's something which these countries are incentivized to do, anyway.

Ms. Sylke Tempel: Mr. Morningstar, I'm sure you would like to say something also in Iran, as well as on the Arab Spring question.

Amb. Richard Morningstar: I don't know that I really want to say a whole lot more about Iran. I honestly…

Ms. Sylke Tempel: Do us a favor, please.

Amb. Richard Morningstar: No. Because I really don't think I have anything to add beyond what's already been said. But I would say a couple of things about some of the other issues. One, on the Arab Spring and Steven's question, I think it's hard to predict because politics are going to have so much to do with what ultimately happens in these countries.

Libya's doing quite well. Libya's doing better than expected, as far as their hydrocarbon production. Iraq, hopefully, will continue to increase production, but there are any number of internal problems that have to be worked through. So I think that the, you know, what we all need to do from a governmental side and also from a business side is engage, engage, engage with these countries, encourage them to do what's in their interest, to encourage as transparent regimes as possible and to eliminate obstacles. Easy to say, but hopefully, those things will work and it is hard to predict.

I want to take the South Atlantic question and, in fact, defer it back to Iain for his views. You know, as non-experts, really, in the government, you know, we've been of the view, oh, LNG is going to be just a big, big deal, you know, with all of these finds that you talked about, as well as in other parts of the world. We've seen that LNG has already had an effect on pricing in Europe and has actually driven some of the

piped gas pricing down from gas (inaudible). But then when I've talked to various companies, not BP so much, but some other companies, say, oh, yeah, be careful. You know, LNG, it's not all that it's made out to be. The costs of LNG production are skyrocketing. The cost of shipping is tremendous in going long distances from one place to another, the ships themselves, the infrastructure. All of which are very expensive. Yes, it will increase, but don't expect it to increase much greater than, you know, any of the other possible sources.

And I'd like to, you know, ask Iain, from a BP standpoint, if you agree with that or do you think that it's going to be a really big deal?

Mr. Iain Conn: Well, first of all, there are some fundamental rules about gas. If you can sell it locally, that's the first thing you should do. If you can't sell it locally, you should sell it internationally through a pipeline. If you can't do that, you should sell it internationally through LNG.

And if you can't do that, then you'll have to convert it into petrochemicals or something.

And that hierarchy is also a hierarchy of increasing cost. So LNG is not cheap, it's just a mobile pipeline. That's all it is. But if you look at the U.S. natural gas today at $2, roughly, $2 per 1 million BTUs, and you look at India importing at 15, It'll probably cost you, I'm going to guess now, about $8 to $9 to compress it in the United States, pay for the rent of the equipment in the United States, put it on a ship, transport it to India, re-gasify it and sell it into the market. Now, that still means there's an arbitrage there, but, you're right, LNG is quite an expensive way to get gas from A to B. But it is going to for the period until the world builds out more of its pipelines. It will be a very important inter-linkage of gas between different regions.

And just a comment on Brazil, if I may. You are blessed with huge hydrocarbon resources, a lot of land and a lot of sunshine and a lot of water. So we are

very keen to be in oil in Brazil, which we are, and we're very, very big in biofuels in Brazil. I think Brazil is going to be very important for the Atlantic Basin. And the part of your question that wasn't answered, the Atlantic Basin is going to go long oil or long liquid hydrocarbons. Oil's a biofuel, it's just been around for 65 million years. So the Atlantic Basin…

Ms. Sylke Tempel: That's a way to put it.

Amb. Richard Morningstar: …is going to be long biofuels of varying ages sometime in the next 20 years.

Ms. Sylke Tempel: Minister Mladenov, I don't know if you wanted to add something here.

Hon. Nikolay Mladenov: Two brief points. Firstly, on Iran, in a different world, in a better world, Europe and Iran have the makings of a strategic energy relationship. And all of our pipelines would look quite different if we were living in a different world with a different Iran. So I do hope that somebody in Tehran, when they're thinking about their nuclear files,

actually is calculating the horrendous loss at which Iran is right now, both economically, technologically and in terms of providing opportunity for its own people by missing out on this wonderful relationship that they can have with Europe had it not been for a whole basket case of issues that we need to deal Iran, starting from human rights and ending with the nuclear file.

But I think the question that Steven asked on the Arab Spring is extremely important, and this is perhaps one area where we need to start thinking right now. Because if people in the countries of the Arab Spring, for lack of a better term, rose up against the dictators because they wanted to see a fairer distribution of national wealth, we should be in there helping them in developing those tools. And unfortunately, oil or gas have the tendency of damaging democracy if the money of that is not managed well. So what we need to do is help each and every one of these countries develop a tax base so that its citizens feel

part of their own government and manage the resources that they have from hydrocarbons and distribute them fairly.

And there's been plenty of thinking out there, transparency and extractive industries initiative, a number of other initiatives that have thought about this in different scenarios which we need to pull together and actually put into some sort of a framework program for countries in the Arab world. I think, in the long run, that would be quite important so that we don't end up in a few years down the line with a different sort of dictatorship and wait for a different Arab Spring.

Ms. Sylke Tempel: And here we see that energy security is not only a field of strategic planning, but of some visionary thoughts, as well. There was a question over here, please, and then we go on to you and then we have a third one I have here on my list.

Terri Givens: Hello. Terri Givens from the University of Texas at Austin. And coming from Texas, I have lots of questions but I'm going to stick to one.

Ms. Sylke Tempel: Please.

Terri Givens: As I was driving through western Texas recently, on one side of me, there were oil derricks and on the other side, there were wind turbines. And it seem to me that, in Texas at least, the government is, both at the local and the state level, is really investing heavily in wind turbines and other types of renewables. And I'm wondering what kind of focus there is. I know Germany has invested heavily in wind, as well. To what extent are the oil industry types looking at these issues more--what are the potential for these types of investments?

Ms. Sylke Tempel: Thank you. Question over here, the gentleman with the red tie, yeah, I have you on my list.

Bruce Jackson: I just wanted to come back to the question of the southern corridor and sort of ask

again. It was once said in America, the Southern Corridor was a way of responding to instability of one transit country by building a pipeline through eight of the most unstable countries in the world. And I'm just trying to figure out in what sense does this improve the European energy security?

Turkmenistan, until recently, was run by a madman. Baku is a hereditary autocracy. The Russian troops are still in Georgia after the last war. And last time I checked, Turkey had decided they weren't in Europe and they were on their way to be a regional power in the Middle East. Also, we can get through the Balkans to interconnector degrees, which defaulted last week. I mean, is this a business plan? I mean, are you serious that this is going to work?

Ms. Sylke Tempel: Thanks. We'll take a third question over here. Yes.

Harlan Ulman: That's a tough question to follow up on.

Ms. Sylke Tempel: Try your best.

Harlan Ulman: I'm Harlan Ulman and I want to ask about a potentially game-changing technology. The context is in the 1880s, you could go back and read New York City Newspapers, believe it or not, the biggest problem in New York City then was horse pollution. And there were so many horses and they're going to have war horses, that everything above 90th street would have to produce the grain and so forth for them to eat and Connecticut was going to be the dumping grounds. And along came Henry Ford, and voila, changes occurred.

We all know that the largest potential producer of energy is the sun. There is a flying technology that's actually working right now in which a machine can take off like an airplane and end up like a rocket, which can lift heavy stuff into space and it's actually feasible to beam down an awful lot of energy produced by the sun. Are any of you aware of this technology, which has been proven? And if you are, do you have any doubts or questions about whether it has any real voracity, assuming it can be funded?

Ms. Sylke Tempel: Okay. We'll take this here. So let's take the two renewables together, but first, if you don't mind, I would like to ask you, Mr. Conn, and then of course you, Ms. Nanay, on your business plan on the Caspian and the nicely described nations over there?

Mr. Iain Conn: Well, Bruce, the, are you serious, question was very--I should compliment you, very well put. But we were asked the same question when we proposed to build the [bucket to Blecijahan (ph)] Pipeline. People said, are you serious? And we did build it and BP lead it and against many, many countries' skepticism, including out of the U.S. initially, we built it. So I think it is entirely possible.

It's very important because what we've now done is effectively drive a geostrategic energy corridor wedge between Russia and Iran. I think that's terribly important for the western world. And we've opened up a route for competition for hydrocarbons in the Caspian

that otherwise wouldn't be there. Right now, there is a Chinese tube that's connected to Turkmenistan and I hope, if we can serious, that we'll manage to connect one up to the western side of the Caspian. Why do I think it's possible? It's very simple. There's alignment of interests. Azerbaijan needs to get her gas out. I don't think she's particularly keen on sending it north. There are a lot of complications in sending it east and there are probably even more complications in sending it south.

The second thing is that Georgia and Turkey have already figured out how to build a pipeline jointly across their territories and I think that bodes very well for getting gas to Turkey and Turkey needs more gas. Turkey will also earn more as a transit country and is already one of the largest transit countries of hydrocarbons in the world, if you include the bosphorus. And so they're all incentivized to get the gas to western Turkey. Southeast Europe is incentivized to diversify its gas resources and so is, indeed, the

EU in trying to connect up the gas to gas-on-gas competition.

Now, is it complicated? Yes. Is it doable? Absolutely. And the economics will work provided the pipeline consortia don't try and build a pipeline for 30 billion cubic meters a year when there's only 10 today. But for our part, what we are doing is committing to make sure that any pipeline that's built is expandable and scalable. And to do that, the first bit of the pipeline in Azerbaijan, we are building a 56-inch gas pipeline. That can take a huge volume of high pressure gas. And so we're already thinking long term about more gas from the Caspian and how to open it up.

The last point I'd make is pipelines grown. All you need is a prolific hydrocarbon basin at one end and a big market at the other. And that's what we've got here. So I'm very confident that over time, no matter how difficult it is, this will happen.

Ms. Sylke Tempel: Ms. Nanay and then Ambassador

Morningstar. Would you, please, sort of do a review of Mr. Conn's business plan here for a moment?

Mr. Iain Conn: I get him to do that regularly.

Ms. Julia Nanay: Well, I think he's absolutely right and to add to that, you know, the oil and gas business is a risky business. Everywhere you go there are risks. So in this case, it's the pipeline risks. In other cases, it's risk--it's always above-ground risks, whether you're producing the oil or getting the oil or gas to markets. So I think BP, Statoil, the consortium that's involved in the AIOC business, Chevron is in there as well, you know, they've managed the oil exports and I think that they will work hard on managing the gas exports.

Sure, there are risks and, you're right, these are not easy countries to get through. Turkey, you still have to get to the other side, you have to build an interconnector with Bulgaria. I mean, there's a lot of issues to resolve, but I believe that, you know, eventually they will get resolved, but it's going to be

over the next decade. It's going to take awhile and companies that have a lot of experience in this are working on it.

Amb. Richard Morningstar: Not to sound too agreeable, but I basically agree with all that's been said. And I think that…

Ms. Sylke Tempel: How can I (inaudible)?

Amb. Richard Morningstar: …but I'm going to add to that, though. And certainly BTC has been successful going through the countries that Bruce has mentioned with all of the inherent risks. And, Bruce, you did promise to ask a tough question when we spoke before so I feel I should at least also respond. You know, and look, let's assume, for the purposes of the discussion, that there is a big risk or some kind of substantial risk going through those countries.

There are risks. As Julie said, there are risks going every--from every route. There are risks going through Ukraine. There may be risks from Russia at some point. There may be risks from North Africa. There may

be risks all over the place. That's why the key point is diversification. And even if you make the assumption that there's an X percentage risk in resources coming from the caucuses in Central Asia, by adding that to other potential supply routes where there are also risks, you're lessening the overall risk and I think that's how you have to look at it.

Ms. Sylke Tempel: Let's pick up on the diversification issue again because there was a question here, two questions actually, on solar energy and on wind energy. And I'd really like you, Mr. Morningstar, and perhaps also Mr. Conn, to say something about when you come to energy security, where is the place of those renewables in there? Are they reliable? Are they cheap enough? Are they good enough yet? Do we have the infrastructure?

Amb. Richard Morningstar: Yeah, I mean, I'll be very brief and I think Iain can get into more of the technical things. But it comes back a little bit to the question that was asked before as to, you know, raising

the question, well, why would we do so much gas and create that infrastructure if there are all these other things? Well, again, and it goes to the whole diversification question, solar, wind, other renewables by 20, 30, 40, 50, 60, 80 years from now may be a gigantic part of the energy picture, but it is going to take a lot of time and it is going to be expensive and it is going to require a lot of infrastructure.

Renewables today are requiring large subsidies from countries. The question is how long they're going to be willing to pay those subsidies so that it's critical that we all work together to develop the technologies that will make renewables more cost efficient.

Ms. Sylke Tempel: But we could agree that if you don't put the subsidies in, they will not have the large place in 80 years from now.

Amb. Richard Morningstar: Oh, nothing would. (Inaudible) you wouldn't even get a start without the subsidies.

Mr. Iain Conn: Well, I think, firstly, we need to

remember where energy comes from and I'd like to just touch on the solar point. I mean, at the end of the day, energy comes from the sun, which turns energy into carbon. Energy comes from uranium and energy comes from the potential energy of water and that's about it. Clearly, in the end game, I think oil and bio fuels are just ways of turning the sun's energy into energy. And there will be ways of making solar much bigger part over time.

The big challenge is--the last part of your question is how to make it cost-effective. And some of these things will be technically feasible. The question is, will they be commercially viable? To the question that Terry asked about oil companies and oil and gas companies and wind, I mean, BP's got two giga-watts of spinning wind at the moment in the United States simply because we've got huge tracks of land with mineral rights and we've--there's oil and gas underneath it and there's strong wind above it so it made perfect sense.

I don't think we are particularly the natural

people to build turbines, but since we had the resource, we did it. I think that although we get misinterpreted, large energy companies do have the commitment to invest in technology to come up with new ways of supplying energy and that's something that we can play a role in. I think we know how to take big financial risks in new technology.

Ms. Sylke Tempel: Thank you. Well, we'll do a ladies' round. I gather we have you first here, lady in the second row, then we have you and, I'm sorry, there's somebody waiting over here for quite some time. And we'll take these and we see how we do time-wise. Your question, please?

Rachel Bronson: Great. My question's--this is Rachel Bronson from the Chicago Council on Global Affairs. My question is for Ambassador Morningstar. I was curious about this revolution in North America just about shale gas coming on, the oil sands from Canada once we get keystone through, this is a dramatic change. And the U.S. is now, the ratio of what it's

using from its own domestic sources or Canadian sources, they're about even for what it imports. It's a dramatic change. What are the geopolitical consequences as you see of that? We know that oil experts will say, it's a big basin, it all goes into the same place, there's no really consequences, but governments, politicians will talk about balanced and diversified portfolios. When you look out 10, 15, 20 years and you recognize this change that happens, do you see any consequences? Are there new opportunities to engage with China and the Persian Gulf 'cause we only import 18 percent of our oil from there? What are the consequences that you see of this dramatic change?

Ms. Sylke Tempel: Thank you. Next question, microphone goes here. And, by the way, this is not agenda issue, this is just been hands going up in chronological order, you know, so go ahead. The microphone goes here to the first row. Raise your hand, here, here, here. Yep. Thanks.

Brenda Shaffer: Okay. My name is Brenda Shaffer. I

work on Caspian and Eastern Mediterranean energy, so two very stable areas. We give a big incentive to renewable energy, but renewable and green energy are not the same things. Many renewable energies have high environmental impact in terms of landscape, in terms of land usage. Many green energies, which are not--many nonrenewable energies like natural gas are very low environmental impact. Shouldn't we been given the incent or at least a clearer signal that green energy is what we need right now using the profit that we can make from green energy, at least the savings are not subsidizing expensive renewable energy and getting to renewable energy, again, through a green period of use, mainly a use of natural gas bridge to renewables when they can be actually renewable and clean and cost-efficient?

Ms. Sylke Tempel: Thank you. Yes?

Tatiana Bosteels: Hi, Tatiana Bosteels with Hermes Fund Management and the Institution Investors Group on Climate Change. And I would like actually to bring a

question that fits very neatly with the two previous comments here in terms of how this energy security and climate change because this morning, we had a previous session on energy and we were saying as appears quite clear here that there seems to be more and more limitless supply of hydrocarbon. So it's more going to be an issue of choice, as Peter Vine put it, it might be a choice of energy efficient, it might be a choice of new technologies, of demand side management.

And one of the concerns that we have in IGCC in terms of shale gas, and to a certain extent LNG, is not so much the local environmental impact, but the issues of methane leakage, which puts into questions whether or not the gas that are produced in such a way can indeed be the safe transition towards a lower carbon economy that they are made to be and appears as a very attractive solution to manage both energy security and climate change. So what all do you see for regulation to ensure that those gas both produced in the U.S. and in Europe (inaudible) or some kind of global, common

standard on leakage could have to prevent those type of unexpected effects?

Ms. Sylke Tempel: Thank you. Mr. Conn, just since BP now for some time has had its logo changed so it doesn't have the oil drop anymore, but a nice, green flower, I'll just throw the question on green energy on you and also the one on standards on leakage to the last question that's been asked right now.

Mr. Iain Conn: Well, again, I think the term green is very misleading just as, you know, the term renewables is misleading. The bottom line is we need all types of energy and what we have to do is find the most cost-efficient, effective and environmentally efficient way of producing energy. So I do agree with you, not all biofuels are good. Some are bad, some are very good. Biofuels in Brazil, first generation, is very good, corn ethanol in the U.S. is not very good. So we do have to get smarter, but we've been through a bit of an education period. The world has tried a lot of things out and we're learning faster and faster how

to find the best balance between these things.

On the point of climate change and hydrocarbons, I mean, I think this is a huge dilemma. It's certainly the case that a molecule of methane is 20 times more damaging than a molecule of CO_2, in the matter of greenhouse gas effect. Having said that, the world is going to need hydrocarbons. We need to manage them very carefully. Where I get very encouraged, however, is that energy policies that drive energy efficient, promote technology, put a widespread economy-wide predictable price of carbon into the economy will ultimately have the right effect.

I am actually optimistic and if you think about business as usual of 1100 parts per million of CO_2 and politicians or scientists, rather, arguing about 450 versus 500, frankly 450, 500, 550, 600 are all kind of the same number when you're making a contrast to business as usual. So I'm actually encouraged, but I would just emphasize one other thing, since it's the GMF, we need to align the philosophy on energy across

the Atlantic. It's a wonderful opportunity for the two largest economic blocks in the world to drive energy efficiency at a similar pace and it's a really big missed opportunity at the moment.

Ms. Sylke Tempel: Thank you. The last question, which was the first question I'd like to ask to you, Mr. Mladenov and also to you, Mr. Morningstar, the shale gas revolution, what kind of due political impact is to have?

Hon. Nikolay Mladenov: Well, let me broaden that a little bit because I think the very idea that you can have energy independence has massive geo political consequences for every country, massive, unprecedented. And I don't think that we've actually even scratched the bit how much that will influence U.S. policy globally over the next decade or so. Same in Europe, particularly when you're dependence is on one supplier. And this is why we need to create the infrastructure and I go back to the very beginning of this discussion. We need to put the infrastructure together to allow the

market forces to actually do their little magic and work out what is the most cost-effective way of getting there.

In Europe, we don't have that infrastructure yet. At a European level, we definitely don't have it in Southeastern Europe and we need to focus on it. It's nice to look at all the big pipelines and I'm sure you seem to be a trustworthy person, you'll be able to get a pipeline from Central Asia into Europe.

BP is a great company and I wish you good luck and you'll get all our full assistance for that. But what I'm more interested in is getting the little projects that'll allow us to have that affect now. The interconnectors on gas, the connection on the electricity grid so that when we go back to the debate on Europe, we can actually have a European foreign policy that is backed up by an independent European energy policy and, subject of a future discussion, a European common defense market. But that's totally out of this discussion.

Ms. Sylke Tempel: Mr. Morningstar.

Amb. Richard Morningstar: I'll go back to the first question, which goes, I think, even goes more than to shale, but to all that's going on in the United States. And I can only say as my grandmother would have said, from your mouth to God's ears. I mean, you know, I hope that we do find ourselves totally energy independent and that we can do it in an environmentally safe way.

What would the affect be? Obviously, it would give us a lot more flexibility. As I think off the top of my head, though, I think that if that ends up being the case that we don't become isolationist in that we don't disengage. Because even if we are in a situation where we become energy independent, there are still going to be many issues relating to energy and other things that our voice and that'll be important for us to be involved in. So, yes, I think it would make things somewhat more flexible as long as we stay engaged and don't lose sight of the global issues, as well.

Ms. Sylke Tempel: On this happy note for a

Transatlantic Forum, I thank you very much, dear panelists. I thank you very much, auditorium, for your questions. Yeah, thanks.

Mr. Craig Kennedy: And thank you. Please, please, remain seated. We're going to go to a coffee break. It's actually going to be a tea and Moroccan pastry break and we just want to run a quick clip to explain why.

(Music)

Mr. Craig Kennedy: The wonderful, short video was created by our own Ashley VonClausburg, if you're up there, Ashley. So that previews the upcoming Atlantic Dialogues Conference we're putting together, OCP Foundation, which is also a partner here at Brussels Forum this year. The Atlantic Dialogues will happen in Rabat in September and a look at the transatlantic relationship in, well, a different way, one that includes Latin America and Atlantic Africa and deals with issues surrounding the Atlantic basin. We're very excited about it.

If you want to know more about our rationale, pick up a copy of our annual report. My president's message this year explains why we're doing this and why we're undertaking what we think is a really, exciting new project. And if you wonder why there are a fair number of Brazilians and others running around this conference, that's why. Enjoy the mint tea and pastries. And thank you, thank you all. That was a great session.