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P R O C E E D I N G S

MR. PASCUAL: Good afternoon, and welcome to the Brookings Institution. My name is Carlos Pascual. I'm the Vice President and Director of the Foreign Policy Studies program here. And today we want to focus attention on the issue of energy as a driver in international security policy.

Over recent years, one of the phenomena that we have come to see is that energy has become a major factor in the way that countries conduct their foreign policy and set their international security priorities.

On the supply side for those countries that have energy resources, it has been for them a source of unprecedented power for at least two reasons, I think. One is the wealth that it has generated for these countries and secondly, the strategic nature of the resource. It is something that drives the growth of countries. It affects the standards of living of individuals, whether they can heat their homes, whether they can take vacations. It has, obviously, a fundamental impact on the environment. And as a result of that, those who actually hold energy resources have in their hands a level of power in international security policies that they have never had in the past or at least in the recent past.

On the demand side, what we have seen is a quest for adequate and reliable and affordable supplies of energy, ideally clean energy that can continue

to drive countries' economic growth and give them some security for the future. And this has inevitably affected the way that they set their priorities, the relationships they develop, and the way they play in the international arena. For example, in Europe, we just recently saw Chancellor Merkel and her relationship with President Putin and the emphasis that Germany has placed on that relationship with Russia.

For China, it has had a huge impact on the role that China has played in Africa and in particular, in its relationship with Sudan and how China has voted on the UN Security Council. For the United States, obviously it has a huge impact on American policy in the Middle East and in the Caspian and with Russia.

Today what we want to do is to focus attention on four countries. And this is indeed the first phase of a project, an initiative by Brookings Institution that will continue to address energy issues, energy policy issues, and energy security issues.

On the supply side, we will look at Russia. On the demand side, today we will look at China and India, the two up and coming countries that represent the greatest source of demand in Asia, and then Japan as well, which used to be the principal driving source or demander for energy within Asia.

What we'll try to do today is to provide you with a snapshot, a

snapshot of the challenges that each of these countries are facing, how policy is set in these countries, and how the states in these countries relate energy, which is a state controlled resource in many cases to international markets that are competitive markets, at least for oil, and how energy – we will look as well at how energy affects the international priorities that countries are beginning to set.

For the future, we hope to build on this base and to give you a sense of some of the priorities that we will be setting is that we will work from this foundation to understand better how to craft US foreign policy in a way that both looks at the way that key countries behave in the international arena and the underlying factors, underlying energy factors that might drive that behavior, so that as we make recommendations on American foreign policy, we can take into account not only the behavior of other countries internationally, but the root causes, the root energy causes that may be affecting that behavior.

We will also look at the domestic side of the equation and in particular some of the challenges of reducing oil dependency. You will find on the Brookings website now, in fact, quite a compelling paper by David Sandalow that looks at options for reducing oil dependency. And we'll have an opportunity to discuss this further tomorrow at an event which we'll have in the morning focusing on the comments that we hear tonight on the State of the Union.

For our presentation today, we have the benefit of four experts

who have been focusing a great deal of attention on these issues. To start us off on Russia, Cliff Gaddy, who is a senior fellow here at Brookings in both the economic studies program and the foreign policy studies program; Erica Downs, who is a fellow here with the China Center in the foreign policy studies program, who is a specialist on China and energy issues in China; Tanvi Madan, who was previously a research associate with us here at the Brookings Institution and is now at the University of Texas; and finally, Peter Evans, who was a nonresident fellow with us working on these energy issues and is now a senior analyst on energy issues at Cambridge Energy Research Associates.

So, without further ado, let me turn first to Cliff to start us off on issues related to Russia. And in particular, Cliff, if you can help us understand how the Russian state has sought to grab hold of some of these energy resources and use them as a tool in its foreign policy and in its international security policies.

MR. GADDY: Thank you, Carlos. Thank all of you for being here. It's a pleasure.

You've seen from the list of countries that we're dealing with in this project and Carlos's comments that we have some asymmetry. We have one producer country and three large consumer countries.

But I think that this asymmetry is rather fitting for the topic of

energy and energy security in particular, because asymmetry concentration is, when you think about it, one of the key reasons why there's even an issue of energy security at all that the question of the haves and the have-nots that energy is concentrated in a few countries in the world; consumers, that's all of us.

And this is true even actually inside of Russia. In this vast country, which has the largest territory in the world and is also the largest producer of oil and gas in the world, remember that over 90 percent of its gas comes from one single province. And nearly 70 percent of its oil comes from that very same province.

Another thing about Russia to mention is that also it's here representing sort of the producer side, Russia is a big consumer. It's the third biggest consumer in the world. This all goes to say that capturing the topic of Russia and energy is not easy.

A few weeks ago in this very auditorium, I hosted a whole session that was devoted to Russia's energy policy. We were featuring the Russian energy specialist, Vladimir Meloff(?). And in my introduction, I pointed out that it was really remarkable to see how many different reasons there are why people are interested in Russia's oil and gas.

And let me just repeat a couple of those points. First of all and very obviously, people are interested in the commodities themselves, natural gas

and petroleum as fuels and raw materials. And it's pretty simple why you would be interested in Russia. World demand is growing quite quickly, has been growing quite quickly. Russia has got lots of these commodities in the ground, so it would be simple – it's a rather simple equation why we would be concerned with Russia.

But you know, Russia and Russia's energy is not just about the commodities or the molecules as the industry people like to call them. It's also about the dollars, the financial side. These extraordinarily high prices that we've seen in recent years -- remember back just last summer, last July where world price of oil was pushing $80 a barrel and may, who knows, come back up to that level and beyond anytime. These prices transferred huge amounts of wealth from consumers, of which there are a lot in the world, to producers, of which there are only a handful, again, this asymmetry that we're talking about.

Now, on both the financial side and the product side, the dollars side and the molecules side, you obviously are going to have different opinions and different agendas depending on which of the asymmetric sides you're on. In other words, depending on whether you're receiving the wealth transfers or you're giving the wealth transfers, you'll want high prices or low prices.

Russians, obviously, want high prices. But they're not the only ones who would like high prices for Russian oil and gas. There are a growing

number, very rapidly growing number of foreign companies involved in the Russian economy, not just in oil and gas, in consumer goods, in real estate, in financial services, and so. They're selling their products to the oil rich Russians. They need the prices to stay high as well.

Now, as for the products themselves, you would think there might be more uniformity of opinion, but really it's not the case. There are some people who are worried that Russia won't be able to produce enough oil and gas; others think it produces too much for its own good and for the good of others. Now, this later group, as we learn it seems every couple of months, includes some of Russia's neighbors whose economies were built for decades on the assumption of cheap energy from the USSR, which really means from Russia, where it mostly came from

Today they worry about Russia's ability to harm their economies by suddenly raising prices or reducing supplies. So they would like to be less dependent. If they could, they would choose less Russian energy.

And yet there are others in Europe a bit further west that have the opposite concern. They count on more Russian energy, especially gas, and now, they're worried that it might not be there, not because they're necessarily afraid the Russians will choose to cut it off for political reasons -- there are those concerns -- but also because of a possible Russian inability to produce enough to

meet the commitments.

And now, let me come back again doing this dance between molecules and dollars, to the financial side, because I want to point out, as I did at that meeting a couple of weeks ago, that the financial side I think is a special concern here in Washington. It's not always identified openly as such, but it really may be the main concern about Russia's oil and gas.

Russia's oil and gas abundance really lies at the heart of one of the most dramatic reversals of fate in recent economic history. Seven years ago, Russia was bankrupt. It was literally desperate for an IMF bailout. Today, Russia, with its foreign exchange reserves and its separate oil stabilization fund, has far more money than the IMF putting all of its funds together. All of the money that the IMF has to lend to the rest of the world doesn't measure up to what Russia has stashed away in these accounts.

And right now, the Russian government is adding cash to these foreign exchange reserves and stabilization fund at a rate of about 170 billion dollars a year. Russia is, by the way, the holder of one of the largest current account surpluses in the world, and therefore, it simply by definition is one of the largest financiers of the US current account deficit.

The speed and magnitude of Russia's reversal of fortune I think has left many people here in Washington and perhaps in other capitols around the

world, in shock. Some people fondly remember the days when it was literally almost enough to have a telephone call from the treasury department to decide the fate of a government in Moscow.

Russia was that dependent. Russia really had no choice about following US policy. They may talk about it, huff and puff about it, but they would always end up following US policy. Today that is not the case. They do not have to follow the US. In fact, they are being identified in the popular press or in op-eds as one of the leading petro-bullies. And this is, again, all thanks to oil and gas.

So you can see, begin to see the difficulty of writing a report on Russian energy, what are we talking about here. And I won't claim that the paper that we have available on the Brookings website – we didn't distribute it in full to all of you or any of the other papers, but it's available on the website. I won't claim that it addresses all the dimensions I've referred to.

Fortunately, however, I think there's very good information about the nuts and bolts of Russia energy production and so forth from other sources, including from Vladimir Meloff's presentation here at Brookings and maybe some of his other work as well.

But I would very, very briefly just like to identify for you, not describe, but identify for you two parts of our report that I think are unique. I

think they are something that you won't find elsewhere. One is the discussion in the report about what we call rent sharing, the political economy, if you like, of Russia connected to the rents, to the excess profits from oil and gas.

And the second thing is a very interesting and increasingly important, I think, sort of under the radar debate in Russia about the fundamental direction of its future energy policy, including production decisions. And I'm not actually going to even say a word about that second thing, this under the radar debate. But I would like to draw your attention to it.

And I'd also like to take this opportunity to acknowledge the individual who was essentially responsible for that part of the report as well as some very, very important work in the rest of it as my colleague here at Brookings, Igor Danchenko, who is not on the panel, but he deserves to be acknowledged. And I want to – stand up, Igor, so they see you.

Because I think he's the person that those of you who are truly interested in this topic probably would like to talk to. Igor, as his name says maybe, he's Russian.

He's actually from one of Russia's oil producing provinces, the home of Luke Oil and worked for Luke Oil – right, Igor – even in Russian and Iran. He knows an incredible amount about everything that's in the report. So I want to give credit to Igor for this great work.

This topic rent sharing, very briefly, I just want to identify for you how important I think it is, not what it is, but just to pick your interest in it and perhaps read the report.

It is, as you probably know, a central fact about resource based economies, especially those with so-called point resources, those that are concentrated geographically and end up, therefore, being concentrated in terms of ownership in a few hands, like oil and gas. One of the central points about such economies is that the entire economy ends up being focused very much on issues of distribution of this wealth, of this rent.

This always happens when a main part of society's produced wealth flows through a small number of hands like this. And so the story I try to tell in the report and in other work I've done on this is the allocation of this resource rent, how it's collected, how it's distributed, that is to whom and to what ends, and how this complicated process is managed.

I believe that nearly all economic policy and political events in Russia right now are turning on this issue. I think that Putin's economic policies throughout his tenure have been very much about all of this. And I think that, in my opinion, if you really understand this and look at it in this regard, there's perhaps no big puzzle about the so-called Putin One, the good Putin, who had some pro-market policies and Putin Two, the bad Putin, the retrograde quasi-

Soviet Putin.

I think there's consistency in what he's done in economic policy that fits the notion of management of these rents. Similarly, his measures towards the Oligarches(?), the re-nationalization of Ucose(?), and equally important, why didn't he re-nationalized everything? He's left some companies in independent private hands. I think that this also is connected with this issue.

The political reforms, why did he feel it necessary to appoint governors? I believe this is very much connected with the notion of rents. And finally, the succession issue, 2008, I believe cannot be understood without realizing the importance of this.

And, yes, finally, Carlos, foreign policy. It is definitely connected to the notion of foreign policy. And yet I might ask is Russia's foreign policy right now all about becoming an energy superpower, all about using the energy weapon, perhaps not all about that.

And my concluding point is simply this is, that one thing to keep in mind, I believe, as we perhaps hear discussions from the other countries and to what extent Russia may play a role in there, is to take my suggestion that what Putin has been about more than anything else is restoring Russia's sovereignty. That, I believe, is his foremost specific goal.

The oil windfall has been absolutely critical for that. It allowed

him to do this, to accomplish this, to the extent that he has and it's quite impressive, far, far faster than anyone, himself included, could possibly have imagined.

There's a critical date. On January 30, 2005, Putin paid off the entirety of the remaining debt that Russia had to the IMF three and a half years ahead of schedule. The event was virtually unnoticed in the Russian press. But it was, in fact, it turned out to me more than trivial. It was only a few weeks later, a few weeks after that, that Putin's key aid ideologue, Vladis La Cercoff(?), introduced the term sovereign democracy. And much has happened in that regard since then.

So, this goal of sovereignty and the role of energy in it is something I urge you to keep in mind when you hear people talk about possible scenarios for the use of Russia's energy, that is both the physical product and the rents that flow from it. Because having achieved financial independence through paying off the IMF debt and building up the foreign exchange reserves and oil stabilization fund, Russia's, Putin's fundamental goal now is not to allow anyone else, anyone other – whether that be inside Russia or especially outside Russia – to be able to determine how Russia's greatest asset, its oil and its gas, is used.

And so, his goal is control over production, transportation, distribution, choice of customers, as well as use of the revenues from. And this

carries with it, I believe, certain principles in terms of Russia's future energy policy with respect to other countries. I think that you will find that interdependence is a concept that Russia will tend to avoid.

It is not going to buy into an idea in which we are mutually dependent. Because that means trusting someone else -- placing Russia's fate in someone else's hands. Long term truly binding commitments, I believe, will be avoided. Russia will try to keep its hands free as much as possible, remain flexible in the use of this great asset, and of course, it will continue to avoid making the great mistake that Mr. Putin believes that Gorbachev(?) and Yeltsin did in terms of incurring financial dependence. And so that policy should remain the same.

So let me conclude with that and let our – hear from our other speakers on their countries. And I hope we'll have time for some questions. Thank you.

MR. PASCUAL: Thank you. We'll come back to you. And in particular, one of the questions when I come back to you is Russia's capacity to continue to develop its energy resources and what some of the limitations and restraints are. And maybe you might be able to use Soclin(?) or the development of gas resources as an example of doing that.

Let's go from Russia to China. I'm looking at a very different part

of the equation, particularly, the demand side.

And Erica, if you could lead us through that.

MS. DOWNS: Thank you. Good afternoon. I'd like to use my time today to talk about the foreign investments of China's national oil companies, because this is one of the ways in which China's growing demand for oil is impacting its international behavior.

And briefly, I'd like to talk about four issues. First, I'm going to talk about China's oil demand and import. Second, I'm going to talk about the relationship between the Chinese government and the Chinese oil companies. Third, I'm going to talk about the multiple corporate and national motivations driving China's oil companies overseas. And finally, I'm going to conclude by looking at the trends, some of the trends in the foreign investments of China's national oil companies.

So to begin, in terms of China's oil demands and imports, it's important to note that China was self sufficient in oil as recently as 1993. Ten years later, in 2003, China surpassed Japan to become the world's second largest consumer of oil. And in 2004, China became the world's third largest importer of oil behind the United States and Japan.

China currently consumes about 7 million barrels per day of oil, about one third the level of the United States and imports about 3.5 million

barrels per day, about one quarter of the level of the United States.

Both Chinese and international experts can expect China's oil demand and imports to continue to grow. And this is one of the broad factors that have the Chinese oil companies and the Chinese government interested in the companies' acquisition of assets overseas.

This leads me to the second part of my presentation, which is the relationship between oil companies and the Chinese government. And the main point I'd like to make here is that China's oil companies are not merely puppets of the state. Yes, these are state owned companies. Yes, the Chinese communist party has the power to promote to a point, to remove executives. But that does not mean that they're – and there is a string between the government and the companies, but this does not mean that the government is calling all the shots.

And this has to do with a broader phenomenon in China's energy sector, which is that of ineffective firms – ineffective government and powerful firms. And this is a phrase that many Chinese analysts in their own writings have used to describe China's energy sector. And I've embraced it in my work because I think it's quite accurate.

And by ineffective institutions, I'm referring to the fact that the government, the central government institutions responsible for energy policy making and regulation are understaffed; they're underfunded. And the entire

institutional structure of authority over energy is fractured. Responsibility for energy policy making is divided among multiple government agencies. They're roughly equal in political power. Nobody is subordinate to anybody else. And this has resulted in a lot of policy coordination problems and policy paralysis.

In terms of powerful firms, I'm referring to the fact that China's oil companies have a lot of political clout. This is derived from their origins as government ministries, as well as the fact that in China, as in other countries, there is a revolving door between government and industry.

It also comes from their financial clout. These companies are among some of the most profitable state owned firms in China. And it also comes form their human resources in that the oil companies, in contrast to the government, have large staffs of people with great technical expertise.

And I'd like to draw your attention to the fact that both the manpower shortages and financial shortages in the government has given companies an avenue to influence policy in that they fund policy studies and they've loaned bodies to the government.

And so the basic point I'd like I guess to make here is that not all decisions about energy projects and policies in China are made from the top down, that the companies do have considerable influence over energy sector developments. And we see this playing out in the area of foreign oil investments,

that the decision to start investing overseas originated with the one Chinese company, China National Petroleum Corporation, and the government actually was quite ambivalent about this company, as well as Chinese companies at large investing abroad.

And it wasn't until CMPC started to turn a profit in some of its early projects and China's imports continued to rise that the government got on board. And now today, we see that Beijing is taking a page from the play book of other countries and doing quite a bit diplomatically to help China's oil companies secure investments overseas.

Most of these projects are selected and assessed by the companies themselves, but they do lobby the government for support, and the government has wielded a bunch of political and financial instruments to help the companies. I would argue that their financial tools have been most successful. They've been very successful, especially in Africa, where there is a large need for infrastructure and where you have host governments that have told national oil companies or told foreign oil companies that if you want to acquire blocks in our country, you can increase your chances of success if you can offer an attractive economic package.

And this brings me to the third part of my presentation, which is what are the multiple motivations driving China's national oil companies

overseas. One – and I guess there are both, as I mentioned earlier, corporate and state motivations. And they're mutually reinforcing, so at times, it's hard to figure out where the division lies.

But one motivation certainly from the company perspective is the replacement of reserves. These are oil companies. If you want to stay in the oil business, you've got to continue to grow your reserves, and the prospects for doing so in China have been somewhat grim. So the companies are looking abroad for reserve replacement.

Another motivation is profits. To some of you, this may sound strange because China's oil companies have certainly acquired a reputation for paying top dollar for some of the assets they've acquired overseas. It's true that the Chinese NOC's are not as singularly focused on profitability as international oil companies, but it is a factor there certainly from the corporate perspective.

These companies are just like any other, they want to make money. And that also helps in gaining autonomy from the government. And from the government's perspective, the oil companies pay taxes, and the more money they make, the more taxes they pay.

Another motivation is the creation of internationally competitive companies. This is something that's shared by the companies and the government. The Chinese government is interested in creating globally

competitive companies, not just in the oil sector, but in other sectors. And if you want to be internationally competitive, you have to compete internationally.

And finally, energy security, and I wanted to say a few words about this. There has been certainly over the past decade a fairly widespread but by no means universal perception in China that the acquisition of oil through investment is somehow less expensive and more secure than buying oil on the international market. This view seems to be especially prevalent in parts of the media, in parts of the government. It's not necessarily shared by the oil companies.

The heads of the Chinese national oil companies have made remarks privately and sometimes publically and stated that you know, we don't see the equity oil that we're obtaining overseas as doing anything to help China to deal with the supply disruption and a consequence. But perception is political reality, and so that motivation is there, although I would point out that the debate on this issue has changed over time.

When I first started working on this issue about 10 years ago, it's very hard, at least in the public debate, on energy security on the overseas investments of China's national oil companies to detect any diversity of opinion. But today you do have analysts; you do have journalists, who are saying that, you know, we're skeptical about the relationship between the oil that China's

companies are obtaining overseas and the security of our country's energy supply.

And finally, by way of conclusion, I'd just like to say a few words about some trends in the investments of China's national oil companies. One thing that I think is important to keep in mind is that although these companies certainly have a global presence – they're invested in countries around the world – if you look at their production, the vast majority of the production of China's NOCs comes from just two countries: Sudan and Kazakhstan.

In 2005, China's NOCs produced I'd say between 450 and 500,000 barrels per day of equity oil abroad. Four hundred thousand of that came from just Sudan and Kazakhstan. It was roughly divided between the two, slightly higher production in Kazakhstan. And the 450 to 500,000 barrels per day is equivalent to about 15 percent of China's oil imports.

And I guess the final issue I want to touch on because it's the question that I've been asked frequently as I speak about this issue is well, what are the Chinese doing with this oil. Are they sending it back to China? The short answer is it depends. I think in the case of Sudan, a lot of that oil is going back because China is a major producer and purchaser of Sudanese crude. And if you look at Sudanese crude, it's highly compatible with Chinese refineries. The signature of Sudanese crude, neoblends(?) has an API gravity and a sulfur content very similar to Dochean(?) crude in China.

In the case of Kazakhstan, most of that oil is not going back. Most of it's being sold locally.

And I guess this brings me to -- the final remark I'd like to make is that there has been a lot of concern about what does this mean. What do the investments of China's national oil companies mean for the international oil market? Some analysts have expressed concern that somehow the Chinese are locking up barrels, that they're taking it off the market, that this is somehow shrinking the global pool of oil and putting upward pressure on prices.

And I guess my take on that is that, you know, to the extent that any of this oil is going back to China, it's merely displacing oil that the Chinese would have to buy from anywhere else. And so, while certainly China's investments may pose certain economic or foreign policy challenges for governments around the world in terms of their impact on the world oil supply, I don't see negative effect.

And I'll stop there. And I'm happy to entertain any questions you have about my remarks or about Chinese oil policies more broadly in the discussion section.

Thank you.

MR. PASCUAL: Thank you. Let me turn to India and ask Tanvi, if you can walk us through the discussion.

In some ways the parallel trend in India is it also has gone through a period of huge economic growth, yet different in some respects, in particular, the possibilities of gas.

MS. MADAN: Thank you, Carlos.

Energy security has become a subject of huge debate in India and mostly because energy consumption following the trajectory of economic growth has grown tremendously. Over the next 25 years, it's expected to more than double. And India is expected to become the third largest consumer of primary commercial energy.

I'm going to focus on one of the sources that is the subject of most concern in India probably, which is oil. It's not the dominant source of energy. That would be coal. But, because India lacks domestic reserves of oil, it is the subject of much concern domestically.

Domestic reserves, as I mentioned, are limited. There's very little investment in the domestic exploration and production sector, mostly because of limited and slow market reform, though that's changing more recently.

So, India imports most of its oil. Oil forms a third of its energy consumption, and India imports two thirds, more than two thirds of its oil, which is more than the US and China do as a percentage. And this is expected to increase to 90 percent by 2030, again, a subject of much concern – even more

because of the price volatility as well as where India's oil comes from. Two thirds of India's oil comes from the Middle East. And there's been much concern about uncertainty there and the risk of supply disruptions in the future.

To kind of mitigate some of the problems India has faced and to close the gap between the amount of oil that it requires and the amount of oil it has access to, India has been following a couple of different tracks. And the demand management side has been trying to look at price and tax reform, though it's been slow and halted, and conservation and efficiency measures, though these tend to be more rhetorical than in actual effect, as well as fuel substitution.

On the supply side, India has been encouraging investment in its domestic exploration and production sector. It's been developing a strategic petroleum reserve, though that's not expected to be in place for another five years or so. It's been trying to diversify to use other fuels, especially natural gas, as Carlos mentioned. And I can talk a little more about that in question and answers if you'd like.

The two things that I'd like to concentrate here is what tends to affect its foreign policy the most, which is supply diversification, where the oil is coming from, as well as the acquisition of upstream assets, which is kind of paralleling China's strategy in that regard.

In terms of the first is India's oil diplomacy. And it's more oil and

natural gas diplomacy, so probably broadly energy diplomacy. This is not new. India's traditional relationship with the Middle East and especially the Arab countries in Iran has generally been or is usually credited to the fact that India has a large Muslim population, as well as the fact that it's had historical ties. But it's also been – and the people have been – the Indian External Affairs Ministry is fairly candid about this. It's also been because it has been India's largest supplier, and India has been wanting to be on the good side of these countries.

It's come to the world's attention more recently, mostly because India has also been – there's been an extra push in the recent years. There have been a number of conferences that India has held. There have been agreements. Almost every of India's main geopolitical relationships these days have an energy dimension to them, whether it's the US, Russia, even China.

And in terms of visits, there have been – a good sign is – that's indicative of India's push towards it is it's the chief gas (off mike) is the Republic Day, which is its big national day, which is next week. And I was just mentioning to Cliff that the guest of honor this year is President Putin, who is there with an entire team. And they're expecting to sign a number of energy deals. Last year, it was the Saudi King, and the Prime Minister of India broke protocol and went to receive him at the airport, which was rather controversial. But, anything for oil.

In terms of acquisitions, India's national oil companies, as well as

some of its private companies have been following kind of in the footsteps of what Erica mentioned the Chinese companies are doing. And increasingly, the Indian government is giving them more support, which they lacked for a while. And they were losing out to a number of deals – on a number of deals to the Chinese companies. This was the case in Angola and in Ecuador and a number of other places.

Indian companies used to go it alone. Now, they're doing so with – the national companies are partnering with private companies, as well as with some Chinese companies on some bids. The Indian government is providing more diplomatic support. There's also, along with the economic packages, there are often offered on the side – there have been – India's Exin(?) Bank, for example, has increased its line of credit to Sudan by six times in the last two years. And it forms more – it gives more money to Sudan than it does to almost all other African countries combined.

Military assistance is another factor which is helping India's companies win bids. This – a few examples, India's army chief visited Nigeria recently and promised to train some of their military divisions. In Myanmar, which has been the subject of much controversy in India because traditionally it has taken a pro-democratic front – in that country. All three of India's armed forces chiefs visited in the last year promising assistance of all sorts. That's

partly to try and get a pipeline deal through from Myanmar through Bangladesh to India, as well as help Indian companies gain equity stakes in oil and gas blocks there – sorry, in gas blocks there.

Uzbekistan is another country where India has invited the – has – Uzbek troops have been training in India as counterinsurgency and jungle warfare school. And Kazakhstan has also been offered military aid.

India, both in terms of --the third aspect, which is more related to natural gas, but again affects its foreign policy, has been the various pipelines that are in the pipeline and have been for the last decade or so. They're mostly in the planning stages. The likelihood of any one of them actually materializing is still questionable.

One is the Iran Pakistan India Pipeline. A second is the Turkmenistan Afghanistan Pakistan India Pipeline. And the third is, as I mentioned before, the Myanmar Bangladesh India Pipeline. All three have been stuck for various reasons, some different, some same, I think for the last – I think the Iran Pakistan India one is probably the oldest. But it's been talked about for the last 15 years.

India's energy diplomacy has kind of followed its foreign policy track of enlightened self interest, which is what Prime Minister Manmohan Singh calls it. It's kind of – in a variation of the pomestonian(?) acts, it's kind of no

permanent allies, lots of good friends.

The problem for a number of people has been some of these friends and who some of these friends are. India's companies have stakes in Sudan and Venezuela, in Iran, and in Myanmar. And these might bring up conflicting interests.

What is India likely to do in the future when it comes to if these interests come up and if it's going to be conflicting with some of its larger goals? There are four schools of thought in India in terms of how its foreign policy should track with its energy policy.

One school doesn't think – thinks India should totally turn inward. Very unrealistically, they still talk about, mostly rhetorically self sufficiency. And they're kind of the, you know, forget broad school.

The second school calls for cooperation with Asia, but not with the West. These – this school – the scholars in this school or even the experts, they tend to be suspicious of the West. They do not believe in global energy markets, believe they have been structured by the West, and therefore, India will not gain by taking part in them.

The third school calls for deeper integration in these global energy markets and says India will benefit the most from doing that.

The fourth school kind of combines all of them. It calls for

cooperation with Asia, cooperation or rather investment, encouraging investment domestically, as well as deeper integration into global energy markets. And this is the school that's currently holding sway. And as long as the current government, as well as if there's a BJP lead government at the center in India, as long as the two major national political parties are heading governments, it's likely to continue. There's kind of a consensus on this.

India will consider – will continue to consider and pursue every option in terms of which countries it looks at as future partners. It would much rather cooperate in terms of global energy markets than compete, as well as with companies of other countries, because it doesn't have the resources to compete and win in a number of these fields.

And it's probably more likely to cooperate with the world at large. It's going to continue to – there have been calls for more talks with Asia, and they have been, especially recently.

One of the ways to bring India into the energy markets more may be to involve it a little bit in the decision making, whether it's as an observer or as a participant. India tends to feel that much like in the case of the UN Security Council, that it's been left out of the decision making and so doesn't have – so is given short shift by these systems. And it tends to stay away from participating in them as much as it can.

India is unlikely to totally give up. It's kind of a state controlled, as well as a somewhat a market driven energy sector. And it's not likely to give up on that. But, it is – and it is going to continue to pursue assets abroad. The government will continue to support companies.

But one of the things that it is realizing is there's no guarantees. When it looks for energy security with countries like Iran, it has – it has met with failure in some instances. Iran recently canceled a major LNG deal at the last moment on the issue of price. That has given many Indian analysts a reason to doubt whether they can depend on Iran in the future.

India can be persuaded but not pressured publically because they react really badly. But they can be persuaded that there are alternates to dealing with some of these countries. And if shown that, they will choose that part. A good example is Iran and India voting in the IAEA against Iran and then abstaining in a second round, even while this pipeline deal that I mentioned was being negotiated.

A second way that – just a second aspect in terms of the foreign policy angle is the security. I'm just going to end with how it might affect India's security policy. In terms of its military strategy, India's military is increasingly looking at how protecting its assets domestically and possibly abroad in neighboring countries might actually impact their own developing strategy.

They're going to have to put in resources in terms of protection of these assets. There is the possibility that some day, especially if these pipelines come into being, they might need to intervene in one of the neighboring countries if these pipelines are threatened.

Finally, if India develops greater force protection capabilities, especially in relation to US and India Naval cooperation, it could decide that it will take on more of a burden in terms of protecting the sea lines of communication. It's shown a willingness to do so, to act in the notion cooperatively with the US. When the US had to divert ships to the Persian Gulf in 2001 post September 11, India, for a while, took on some responsibility there, as well as in the aftermath of the Tsunami.

I'll take questions later and thank you.

(Applause)

MR. PASCUAL: Peter, if you could, focus on Japan and not the same trajectory of growth as China and India, but still a significant player in Asia.

MR. EVANS: Thank you. I've got a few slides if I'm going to get those up. Thank you very much. It's a great pleasure to be here.

My name is Peter Evans, and I'm the director in Cambridge Energy's Research Associates Global Oil Group. And I help coordinate our global scenarios outlook. This is a practice that is looking at what is the future of

energy over the next 25 years and is really a global effort to pull together the pieces in a very dynamic and changing environment.

And so I was very excited when the Brookings Institution asked me to get involved in this project, because I think that this project is really looking at some of the key questions that are taking place in the energy environment and particularly Asia. Because when you look at what is happening to the future of energy, Asia is really where it's at.

There are important things that are happening in the United States and in Europe, but Asia is really the center and the key driver and really is what we need to understand the future of energy markets unfolding in the coming years.

I was also particularly interested when I was asked to focus on Japan, because in recent years, Japan has sort of fallen off the map to some degree. And a lot of attention has focused on China and India, but Japan continues to be a critical lynchpin in the Asia region. It's an extremely important demand source, and so I think we still need to keep the eye on what's happening in Japan.

So, I'm going to focus a little bit about what's happening in Asia and particularly what this means with respect to Japan. Because there's a lot of dynamic changes that are taking place.

To begin, when we look out over the next 25 years or so, we really see that we're in an inflection point right now, where Asia's oil demand is overtaking Europe and North America. And this is really a reflection of Asia becoming a global demand center for oil.

Now, what this masks is the dynamic changes that are taking place within Asia. And if we turn to what's happening in Asia, we see that historically Japan has been the most important energy market in the region. If we go back to the first oil shock, Japan constituted 60 percent of oil demand in Asia. That is no longer the case.

And in fact, if we go out and we look out into the future, we see right now, as Erica mentioned, that China has now surpassed Japan as a demander of oil. And that trajectory is likely to continue under a variety of scenarios. Even a low growth scenario, we're going to see China becoming a more important demand source, whereas Japan is going to remain pretty much constant or even decline slightly in the future.

And so really the key question that this raises is how Japan is going to respond to this. Because psychologically, Japan has really been really obviously vulnerable because of its supply dependencies. But, it's also been in a position of dominance in the region. And that is radically shifting. And so the question is how is Japan responding to this changing environment.

Another key point is the changes that are taking place in gas. Japan really built up the LNG market within Asia as a response to the oil shocks in the 1970's. And they invested very heavily in making gas and an alternative source of supply to Japan. And in 1985, Japan constituted three quarters of global LNG demand.

Now Japan, because of the entry of new players in the LNG market, Japan has fallen to still a very sizable chunk of the LNG market, but now represents about 50 percent. If we project out to the year 2020, which is just in 15 years from now, Japan is likely to fall to less than 20 percent. Japan's total volume of imports will rise, but in terms of its share of the global market, it's going to be a much smaller player, and that has effects about how Japan thinks about the world and its position as an energy demander in the energy scene.

And this has lead to a lot of angst within the policy community and attention to how Japan should respond to this. And in the last year, there have been a series of debates and internal meetings within the government in collaboration with industry. And this summer, Japan announced a new energy strategy.

I wouldn't say this is a total overhaul or a total revamp, but we're beginning to see a shift away from an embrace of markets that we saw in the 1990's. Japan began to strip away in the 1990's a lot of the administrative and

market interventionist strategies that were built around shifting and managing their supply mix patterns as a result of the first and second oil shocks.

And the watch word in the 90's was efficiency. That has begun to change quite dramatically in Japan. And we see now a rise of voices saying that the government must come back and re-intervene in the market to shape both Japan's domestic supply mix, as well as try to shape its external environment as well.

And so what I've done is I've listed some of the highlights of this new energy strategy, and it goes out to the year 2030. And one is to – this relentless drive to increase efficiency. Japan is actually one of the most efficient economies in energy terms in the world, but they want to make it even more efficient. And so, they want to increase economy wide efficiency by an additional 30 percent, which is quite dramatic given where they're come so far.

They also want to reduce overall oil dependency to about 40 percent of their economy. Also in the transportation sector, currently, like many countries around the world, oil has a monopoly on the transport sector. Their goal is to reduce oil's role in the oil sector to about 80 percent of consumption with the introduction of other fuels, like biofuels.

And then, in the 1990's, we saw that Japan's nuclear program lost momentum on a variety of fronts. There was a reaction both in public sentiment

against nuclear power. There were a number of accidents that took place. And this undermined momentum in the nuclear power build program.

In the new energy strategy, I think there's an effort to restart and rekindle the momentum that was lost over the last 10 years. And so we see in this new strategy, a desire to kick start and try to build momentum. And this includes investments in conventional reactors, as well as moving forward again with their fast breeder(?) reactor program.

And so the goal is to by the year 2030 try to boost the share of nuclear power to about 40 percent of electricity production. Currently, it's around 28 percent, 29 percent. So that would be a significant increase in the contribution of nuclear power in Japan's supply mix.

And then, finally, there is a desire to have Japanese companies own and import and basically control the supply chain of imported oil into Japan. And this is an extremely ambitious target. The target is 40 percent in this plan. Currently, Japanese flagged oil is around 15 percent. So, to reach this level, a lot of things have to happen.

Just want to lay out some of the risks and opportunities that are associated with this shift from efficiency in markets to a more government interventionist approach to energy policy.

One is on a domestic level anytime you have governments

involved in energy policy, you risk having the emergence of white elephants and inefficiency. And Japan has its fair share of projects that have cost a tremendous amount of money and yield fairly marginal results in terms of energy security. And I'd be happy to list a few of those, maybe in a private conversation.

Then you have this issue of state to state government competition. When China has looked around for role models as to how to go about securing upstream oil access, actually one of the countries that they study quite carefully is Japan, because Japan really set the stage in terms of how you integrate the government with private firms to go abroad and secure, both in terms of diplomatic initiatives, as well as fusing state backed financing to secure upstream assets.

So, one of the risks that is associated with this change in policy is that Japan will revert back to this sort of Japan, Inc. and government actively evolved and move away from kind of commercial based competition in the energy field.

Some of the opportunities that this policy shift could help engender and one is Japan's role as an incubator of technology. I don't think as many people know as should that actually Japan is the leading – they have the leading market share of solar technology production in the world, which seems incongruent. It's because Japan isn't really known as the sunniest place on earth.

And this goes back to Japan's ability to not just accept its natural resource endowments but actually shape competitive advantage in the international global scene. And we can see a variety of ways in which solar hybrid technologies and others could emerge out of a well balanced policy of having government support with very competitive global firms.

And then finally, Japan could play, I think, a very constructive role at the regional level. As we know, there's a deficit of kind of energy institutions in the Asian region. Japan has an interest in seeing those institutions strengthened. And so, more government involvement in the energy sector, I think, could have a positive benefit if it is devoted towards supplying some of the public goods that are lacking in the Asia region.

So, with that, I will close and open it up for discussion. Thank you very much.

MR. PASCUAL: Thank you. I think you've seen at a minimum three different, very different types of pictures: one of a country, Russia, using energy resources for control in many ways both domestically and internationally for political purposes; China and India in a very different dynamic of being in quest for oil resources and the security of access to oil; and then in Japan, yet a more evolved strategy and pattern for dealing with its oil dependency or energy dependency issues through a much more diversified strategy that Peter has laid

out.

We'd be happy to take questions from the audience and explore these issues in greater detail.

In the back?

MR. LAURITZEN: Are we good? All right. My question is for the folks talking about –

MR. PASCUAL: You can introduce yourself as well.

MR. LAURITZEN: Oh, I'm sorry. My name is Zachary Lauritzen. I work for the Alliance to Save Energy.

My question is fitting I guess to where I work and that is to the folks speaking about India and China and if there is any kind of domestic, significant domestic movement to reduce – or increase efficiency standards and reduce use, such as was described that was occurring in Japan, and if so, what they are, how successful they've been, and how successful they look to be as well.

MR. PASCUAL: Let me see if there are any other -- a couple of other questions that I can group at the same time. Yes.

MR. OWENS: My name is Gene Owens, I'm an independent consultant formally with the Asian Development Bank. My question is similar to the previous question. We've talked about energy security, and I'm wondering about the linkages, institutional linkages between energy security and environmental policy and climate

change issues as a component of energy security.

SPEAKER: Okay. And what might be -- let me just turn first to Erica and then to Tanvi. What might also be useful in the context of the environmental dimension of this debate is if the two of you might say a couple of words about coal and the predominant role that it's played in both China and India, and how that not only effects now the drive for oil, but the legacy that it leaves on the environmental side, as well. Do you want to start?

MS. DOWNS: Sure; the first question about the energy efficiency in China, I think it's important to note that there has been an important shift, at least rhetorically, at the apex of the Chinese government in the past years regarding their overall approach to energy sector management.

Historically in China, there has been a supply side biased to energy policies and I think that has to do with the fact that it's always easier to grow supplies than to deal with the political difficulties that arise when you try to curb demand.

However, there was an energy crisis in China from 2003 until about 2005, when about two-thirds, 24 or 25 of the country's providences suffered blackouts, people weren't getting the electricity they needed from the grid, so they were buying generators and importing diesel to run those generators, and that was one of the factors behind the surge in Chinese oil demand in 2004.

And so there was a real sense in China that they couldn't continue with

growth at any cost, they needed to rebalance growth, and that has played out in the energy sector, and that rhetorically, there is a lot of attention being paid to demand side management and what they can do to use energy more efficiently and also more greenly which I'll get to in a moment. However, I think this is all very much being worked out right now. And there are a number of obstacles. I think the government is quite serious about this, I think they're quite committed to it, but they do face certain challenges.

One of those challenges is in the area of pricing. If you look at the prices for refined oil products in China, if you look at diesel and you look at gasoline, these products have prices, they have caps on these prices that are set by the state, and these prices do not fluctuate with the international market, they move in lock step and diesel and gasoline prices in China are quite low, they're lower than they are in this country, and so that is certainly one impediment to using oil in curving oil demand growth, and I think you see that elsewhere with other fuels, as well.

Another impediment has to do with the institutional structure of authority in the Chinese energy sector. And very simply, there is currently no champion for demand side management, there's no champion for energy efficiency to balance against the interest of the powerful state owned energy companies in supply expansion.

And I guess one final word on efficiency, the government did set a very ambitious target for the current five year plan for reducing energy consumption per unit GDP by 20 percent, and this is a very ambitious target. It's good to aim high, but a lot of

the Chinese officials have already come out, officials and very senior energy experts have come out and said that we're not going to be able to meet this target, that rather than going down, our energy consumption per unit GDP is going up.

And then I guess briefly on the energy security environment policy linkage, again, this is another area where you do see change. But if you look at Chinese conceptions of energy security, if you look at the base in China over energy security and how they have evolved over the past few years, one change that I've noticed is that the importance of green energy has increased, that it's being spoken about much more frequently than it was in the past.

And on the coal issue, as Carlos mentioned, limiting China's energy sector, it's important to keep in mind that that coal is king. Coal accounts for 70 percent of the energy mix, it's going to continue to dominate the energy mix for decades. Chinese are of two minds about coal; on the one hand, it's an abundant domestic resource, it's cheap, it employs millions of people, it's good to continue having reliance on coal; on the other hand, there's an increasing awareness at the very top of the political system of the costs associated with heavy reliance on coal. Coal obviously is a huge source of sulfur dioxide, also CO2 missions. The primary concern in the government right now is with sulfur dioxide, it is with air pollution. There's an increasing awareness of the cost in terms of health care, in terms of premature deaths. There have been various calculations, I can't remember them off the top of my head of, you know, how

much of GDP growth is eaten away because of environmental degradation caused by coal, so I think they're very aware of the problems, but again, they're sort of caught between a rock and a hard place. It's a lot harder to move away from coal, or rather, I guess it's easier said than done.

And again, you have the whole pricing issue here in the electric power sector, and that there are states that prices for -- at which the grid can sell electricity, and right now those prices are so low that there's no incentives or power generators to invest in any of the technologies, even quite simple things that can be done to capture sulfur dioxide and C02 emissions.

SPEAKER: Tanvi.

MS. MADAN: In this case, the answer for India would almost be exactly the same as that of China. It's one of the many areas where they're very similar in terms of their energy challenges. Rhetoricals (off mike) at the senior levels. The realization of problems of conservation in efficiency, as well as the lack of an institutional champion within the government, all the same, there is -- the difference is -- there are a couple of differences. There has been a push from the ground up. There have been public interest litigations filed in major cities in India, mostly stemming from the sheer increasing solution Delhi which has one-fifth of India's cars on its roads, now has all public transportation that runs on CNG thanks to India's Supreme Court. In India, they quite like activist judges for this reason.

There are also -- all cars now have to be (off mike) standards or above. India has (off mike) standards that are similar to it. India's government is now reducing duties on smaller cars, as well as taxes, to try and encourage their use.

Public transportation in general is a huge focus, especially in India's major cities. New Delhi has recently, in the last few years, it has a new metro system, and all of Kolkata has had one for many years.

The Bombay hydro (off mike) in Bangalore, the other major cities are all in the process of developing plans for a metro system which they think will reduce the number of, or not reduce the number of cars on the road, but if you take the increasing burden of people traveling in the public transportation system, on the environmental side, India has had a strong environmentalist movement historically, and a fairly vocal environmentalist movement.

Coal is, like in China's case, it's the largest source of energy, about 54 percent currently, and though it's going to decrease slightly, it's still the percentage going to be the major source of energy. India's cabinet has just deregulated the coal mining sector, and so this is going to bring more coal production and use, and so this is not going to decrease over time. But India's leadership is, like in China, increasingly aware of the consequences environmentally egged on by some of the environmentalist groups, and consumer calls for more environmentally clean coal use, and they're seeking that kind of technology from governments abroad, including Japan.

MS. DOWNS: If I may jump in here again briefly, one thing Tanvi reminded me of in the case of China is that in terms of looking at future developments in terms of increasing efficiency, in terms of energy using more cleanly, I think there also is some value in looking from the bottom up, that if you look at how energy policies made in China, they're often broad pronouncements that are made from the center, use energy more greenly, use energy more efficiently, and then it's left to the local governments to interpret what that means for them to devise policies and then to implement those policies or not.

And there has been some work. Steve Lewis at the Baker Institute at Rice University has done some very interesting work looking at local initiatives for using energy more efficiently. And I think we already see along China's coast, where you have wealthier cities, wealthier societies, where people are willing to pay for clean energy, that that's where we see the nuclear power plants going, and that's where we see the LNG (?) terminals going in.

SPEAKER: Interesting; I just wanted to jump in and make a brief point, and that is, last week there was the East Asia Summit, and at that summit, Japan announced a two billion dollar package to promote energy efficiency within the Asia region at large. And I think this is kind of a sign of the role that Japan sees that it can play in the region, and that is to share its experience and its technologies in the region.

But I would point out that it's a two-way sword when you see those types

of initiatives from the perspective of the United States, in that we applaud initiatives to promote energy efficiency, but on the other hand, this could lead to some competitiveness issues with respect to having the Japanese government basically underwrite kind of leading edge technology diffusion within the Asia region, helping to set standards and technology specs, and so there could be some advantages that Japan gains in the market place.

SPEAKER: That's two billion dollars in financing for energy efficiency imports that other countries would get from Japan?

SPEAKER: It would be a range of things, helping to (off mike) technical experts throughout the region, demonstrating technologies. And demonstrations are quite important because most countries need to see some sort of track record before they decide to make large investments on a technology, and so those projects help to diffuse the knowledge and just demonstrate, and private sector firms aren't necessarily willing to provide that up front cost to demonstrate it, but they certainly will take the contracts once that technology has been proven.

SPEAKER: A new round of questions. Over here, please.

ANDRE: I'm Andre (off mike) Institute. I'm a little bit puzzled, and I will mention at least three puzzles that I have from this forum. It is called the future of energy security, and you have mentioned it looks like at least three -- four country cases.

But it is, first of all, it's been a conspicuous absence of the largest by far supplier among markets, I mean not only country Saudi Arabia, but OPEC, which is, by far, larger than Russia in oil supply, and, by far, the largest consumer of energy of all kind, means United States, which is also -- it's a little bit difficult for me to understand why you decided to discuss in detail some smaller participants of this equation rather than two most important elements.

The second puzzle is, this is the future of energy security. I didn't understand what is your message concerning the future of your team. And third, let's talk about energy security. This term until the last year have been used mostly in some kind of technical -- from the technical point of view. And only the Russian government last year has introduced energy security, some kind of political economic issue. You have had some kind of distinction between energy security from the western approach and Russian approach.

It is not quite clear what particular approach you share, I mean the participants of this forum. And my question is just (off mike) my question would be, if you have -- what would be your policy recommendations for future of energy security?

SPEAKER: Very good questions, Andre. Let's group a couple of others. In the back, all the way.

MR. COHEN: Steve Cohen, Brookings. This, I know, is the first stage of a more complex energy and security project. I'd answer that question, in part, that

this is just the first step of it. The question I have is, again, looking ahead towards the future, two of the countries are democracies, and of course, you have the U.S. as a case which we haven't looked at, but will look at.

I've always viewed the energy security problem as one of governments having to explain to their population that there's not enough energy, and it's a political issue in large part. How do India in particular, but also Japan and China, answer this problem, how do the leaders answer this problem when addressing their own population? How do they explain, especially in the case of India and China, that there isn't enough energy to sustain the kind of growth that they're capable? And could you give sort of a snapshot answer to that? I know that's going to be the next phase of the project, but --

SPEAKER: Okay. And just one more on the other side.

MS. CUSABATIE: Olivia Cusabatie from NHK. I just had a question in relation to global warming. Do you believe that a shift in mood is underway in Washington towards the mandatory emissions limit on greenhouse gases in light of the democratic majority in Congress and in light of yesterday's industry proposals to reduce global warming emissions?

And secondly, the Bush Administration has rejected caps on global warming emissions as economically unviable; what should the President say to the public on the issue of global warming? Thank you.

SPEAKER: Okay. Why don't we start with Andre Larnionos' question about the focus today of limitations in the session that we had and the fact that there are a lot of other issues that we could be addressing in particular. You're very right to point out that we're not focusing today on OPEC and Saudi Arabia. One of the reasons for that is, I wish I could say that there was a great conspiracy or a geo-strategic reason for it, but it actually has to do with program resources, capability, funding, and where we have been doing work. And so we decided to start with some of our strengths. Cliff Gaddy and Fiona Hill and Igor have been doing tremendous work on Russia and we decided to build on that and look into that issue more carefully. We have a China center now at the Brookings Institution and it's given us an opportunity to focus attention on China.

Similarly, on India, we have been devoting much more resources, and we felt that it was important to try to get a perspective on Asia, and therefore, thought that adding Japan to the mix as a first round would be a useful way to begin this snapshot, and I emphasize that word, snapshot, on how these countries are, in fact, engaging on energy policies, how they're managing those policies internally, how those policies are effecting their domestic political situation, and how it influences their international policies, as well.

This is not intended to be comprehensive, it's intended really to be a foundation point. And I think you're absolutely right to point out the question of Saudi

Arabia and OPEC from the following perspective; if we think about markets as phenomena that are effected at the margins, those that are really pushing the edges of that market, and if we look at the demand side and the supply side to that market, on the demand side, we are definitely going to have United States, China, and India, at a minimum, being three countries that will disproportionately effect the future direction of international energy markets and what happens in terms of price and stability. And on the supply side, if we ask the question, what are the countries that actually can respond to that demand, inevitably, we will come back to Saudi Arabia, Russia will be another key actor, but then we are put into a situation where we begin to scratch our heads about the future security of energy supplies, because then we start to raise questions about, will it be (off mike) energy, will it be Nigeria, will it be Iran, will it be Iraq, will it come online, will it be Angola, will it be Venezuela.

A number of countries that raise issues about the role of politics and its allocation of energy supplies, the way it behaves in the international market places, and how it uses those energy resources, as well.

So these are extraordinarily important questions to address. And in particular, Saudi Arabia is going to be a fundamental player in this international market place in being able to address that incremental margin on the supply side. These are exactly the kinds of questions that we hope to go into in the future.

From an American perspective, and I want to use this as a bridge to the

last question and then come back to Steve's question in the middle. And, David, I'm going to ask you for a little bit of help on this. From an American perspective, one of the issues that we have to come back to is, what are the implications for this international environment for what we do at home? And certainly, one of the things that we have come to understand and recognize, that there's going to be a need for international cooperation to effectively address something which is fundamentally a global issue.

But that which we have directly under American control is how we consume, and the incentives that we create for consumption, and the types of consumption that we create incentives for. And this is certainly going to be a huge issue that we hope to see addressed tonight in some serious level.

Last year President Bush promised us an all out offensive on ending American addiction to oil. We probably haven't seen that fulfilled in the past year, maybe we'll hear more of it tonight, but David, let me ask you if you want to comment a little bit about this and give people a taste for what they might be able to hear more of in a session that we'll have tomorrow morning.

DAVID: Thank you. I'm not going to say much other than while I've been sitting here, I've just gotten an email, the fact sheet for the White House announcement. The President is going to call apparently for a 20 percent cut in U.S. gasoline consumption over the course of the next ten years, and I'm not sure what other

details are in there, but probably many of you have, in your blackberry, details of what the President is going to announce tonight. The issue of U.S. energy usage is, obviously, central to all of it. I'm not going to say anymore about it other than there is material on the Brookings web site on this very topic, including a paper that we just put out yesterday that I wrote. I urge you to look at it and I'd love to talk with any of you about this.

And we're going to do an event on the State on the Union tomorrow morning in this very room, and please come to that, and we can talk about the State of the Union questions then, as well. Thanks.

SPEAKER: Okay. Given the time, what I would like to do is come back to the panelists, and I'll start with Erica, and then Tanvi, and give you an opportunity to respond to Steve's question on how democracy -- well, in the case of India democracy and China not a democracy, respond to issues of, how do you explain to your publics the question of energy reliance, the fact that there isn't sufficient energy to be able to go around, and the role that that plays domestically in these countries, but, in fact, also give you an opportunity to respond to any or address any other points that you would like to highlight and making closing comments. And then after the two of you, I'll come back to Peter, and then Cliff, we'll give you an opportunity to wrap up. Do you want to start, Tanvi?

MS. MADAN: Sure; Indian politicians don't quite explain to their

publics that there is an energy shortage. Prices are not passed on to the consumer. An example is, between April, 2002 and 2005, crude oil prices increased over 90 percent. Retail prices in India grew about 40 percent. There's a cap on retail prices of petroleum products, and as well as on gas. And there's a lot of talk about price reform, but a lot of it has just been rhetorical.

There have been committees which have recommended this, to try to change consumer behavior by having retail prices reflect global prices. But really, Indian politicians, much like politicians here, are petrified of being punished at the polls for high gas prices, and so they don't pass them on to consumers.

The bill is foot by the government and the oil marketing companies, and some of the upstream companies who share the burden and who have some cross holdings with the marketing companies. So they don't really pass on the price, it's something that the leadership deals with, it's a debate at the elite level in terms of where it should come from.

There's a lot of subsidies even for the middle class and upper class, though there's talk of having more targeted subsidies. People do not think it's realistic that they're going to be removed all together.

One of the ways that India's leaders are going to involve and have to be involved with the public on this level is, a large portion, and this goes back to the efficiency question, a large portion of India's households, about 66 percent, use,

especially in the rural areas, don't use commercial energy sources, and they're increasingly going to shift to using them from traditional sources like biomass.

And one of the major challenges for Indian leaders is going to be managing the shift, so that it's to more -- in a more efficient way, it's more clean fuels, and so that it's not excessive amounts of energy that's going to make -- even amplify the energy consumption growth even further. So that's one of the, you know, areas where India's politicians and bureaucrats are going to have to actually get more feedback from the public and deal with the public directly.

On the question of energy security and what Indians consider energy security, there's a lot of debate on what energy security really constitutes. The Planning Commission still has five year plans, and the head of the Planning Commission that released these plans said that Indian leaders don't know what they mean when they say energy security, and he's right, because you ask ten different people and they'll tell you ten different things. For some people it means self-sufficiency, very unrealistic, but that's what it means for them.

To others it means concentrating on non-hydrocarbons which India they think might have more access to. So there are many different definitions that you could get. But basically, if you look at a common theme, it's having reliable, affordable supplies of energy to a vast amount of India's population, if not all the population. And it's one of the things that, despite the different systems of government in China and

India, it's interesting that -- Erica and I have found many similar ways that the governments actually deal with this issue in terms of for the public.

SPEAKER: Erica.

MS. DOWNS: Sure; I'm going to address Steve's question, which I liked because it gets at an important shift that's been occurring in thinking about energy security in China. And I would say that up until the energy crisis of 2003/2005, most of the public's debate, one of the mainstream thinking on the subject was focused on oil and China's dependence on imported oil, and this was China's Achilles heal, and you know, what are all of the ways that being dependent on foreign oil could jeopardize China's economic growth, could jeopardize China's national security, and a lot of attention was focused on how can we mitigate the vulnerabilities that we perceive to be associated with dependence on foreign oil, and then it turns out that China's worst energy crisis in 20 years is not caused by an accidental or intentional destruction of China's oil imports, but by domestic factors, and by the fact that China right now, in the energy sector and in the parts of the economy, as well, is basically caught between the plan and the market, that the old administrative command and control mechanisms aren't so effective anymore, but at the same time, the sector is not completely marketized, so market mechanisms aren't working the way they do in countries with more fully liberalized energy sectors, and this is creating tensions between -- this is, I guess, posing challenges to the government's ability to make sure that the country's energy

requirements are met, and as a result, it's causing some tensions with consumers.

And just to give you two quick examples of how being caught between the plan and the market isn't entirely serving China's interest in adequate, reliable and reasonably priced energy supplies, I have two examples; one is the (off mike) oil shortage in 2005. In 2005, there was a widespread oil shortage of diesel gasoline in southern China, and that had to do with China's price caps.

As I mentioned earlier, the states sets caps on oil prices. These historically have been below the international level. And back in the summer of 2005, there was such a gap between the international and domestic oil price that a lot of China's refiners decided why should we sell oil products (off mike) when we can export them and make money, and so that's what they did, and it's caused a shortage in China, and it sort of ended up with a situation where the very people that the government had hoped to help with the subsidies, taxi drivers, farmers, so on and so forth, weren't able to get the oil that they needed to power their vehicles. Another example, I guess, would be a lot of the tensions that are occurring between the central and the local government over energy issues. Approval for large energy projects in China rest squarely in the hands of the central government and the National Development Reform Commission, and a lot of the providences, one of the fast growing providences, if you look at Zhejiang (?) if you look at Jiangsu (?) around Shanghai, these providences are desperate to get more projects up and running, to get more energy, to power their local economies, and they've

been quite frustrated with the central government and the slow movement on project approval.

And when I was in Beijing this spring, some of my contacts there were speculating that the providences were so frustrated and had expressed such displeasure that this was one of the factors that led to the change in energy leadership within the National Development Reform Commission that we saw in June. Thank you.

SPEAKER: Thanks; Peter.

MR. EVANS: Erica raised a very important point that I'd just like to reiterate and also challenge this premise that there is an energy crisis or a shortage or a lack of energy. As she mentioned, in the case of China, it was not a result or a consequence of lack of physical energy resources, but rather the institutional and the market mechanisms that China has in place to actually deliver energy to the end use consumers. So it was an institutional and a market failure, not the lack of physical supply. And as we look out over the next 25 years, it looks like we're going to have sufficient supply of energy. The question is, what are the risks and vulnerabilities.

And so in the case of analyzing Japan, the question is, how is Japan going to respond, and is it going to respond in ways that undermine kind of the energy security environment in the Asia region, or is it going to act in a way that's going to contribute to and sustain and support viable trading markets and minimize the risks of short term shock.

So that's really, I think, what this project is all about, is to try to analyze what are the potential risks and vulnerabilities in the future, and there we can build on a policy recommendation. But first you have to get the lay of the land. And I think right now we're at this inflection point where Japan could go either way.

Japan could be a solution to the problem, but it also could be part of the problem. And what we want to do is, understand what could drive Japan in a negative way or a positive way and then create the policy and the dialogue to ensure that Japan is contributing to energy security and not undermining it.

SPEAKER: Cliff, maybe in closing, one of the things that, if you wouldn't mind commenting on, as well, is the security of those Russian future supplies and its investment or lack of investment and development and what the implications of that might be.

MR. GADDY: Right; putting Russia in the context of the other three countries afterwards, I mean you realize the real question for the rest of the world is, can Russia help provide some of this increased demand that the entire rest of the world has. At the same time, we have to realize, does Russia have any particular interest in that, does Russia have any obligation to produce more energy? Many Russians don't think so, and that's part of the debate that I was referring to that is going on in Russia.

It's very interesting that leading up to the GA Summit, Russia, Putin in particular, and some of its spokespeople, promoted the idea of Russia as an energy super

power, they used that term. I'm not sure Putin ever used it himself directly. In fact, as soon as the GA Summit was passed, the whole term just sort of disappeared, nobody talked about it anymore, and Putin, at least a few weeks after that in a meeting that I was in, he just rejected it, he said a stupid idea.

I don't know why anybody would -- that was probably created by our enemies to, you know, discredit us or something. In fact, of course, it was his very spokespeople that launched the idea. But it's rather typical. What was interesting was, inside Russia, when that idea was first launched, it caught people a little bit off guard, some people, because previously, the idea that Russia would be so -- that energy would be such a dominant part of the Russian economy, and in particular, energy exports would be dominant, was really a bad idea. This was what was being described traditionally in Russia as the world -- these imperialist powers wanted to turn Russia into an energy appendage of the imperialist. Stalin talked about that with respect to agriculture, and then it later got sort of broadened to all kinds of raw materials, and then specifically oil and gas.

So this was in a banana republic, colonial power, energy appendage, and suddenly this is reversed to become, wait a minute, now, energy is good, we're going to be an energy super power, and it was -- for intelligent people in Russia, it was a little bit hard to -- wait a minute, how did you make that shift there, and they cautiously questioned it, but of course, nobody was making huge debates about it. But it's

interesting that it's just kind of disappeared.

Now, the argument that some people make inside of Russia is, well, wait a minute, now, if energy is so incredibly important, and everybody wants it, and all of these debates are going on around the rest of the world that they desperately need energy, and we've got it, why are we giving it to them now, why don't we keep it in the ground for another five, ten, 15 years, it will be much more valuable then, we'll have more leverage then, let's think about this a little bit, so there's serious discussions along those lines. But this also just goes to show that the energy policy debate in Russia is extremely, I won't say vibrant because you don't see it, you know, in the public so much, but there are a lot of different opinions, and there's some very, very intelligent, eloquent spokespeople for all kinds of the issues that have been discussed here, energy conservation, energy efficiency.

Russia is one of the most, if not the most inefficient user of energy in the world. It's also a very inefficient producer of energy, and there are intelligent people who know that and want to do something about it.

So can Russia produce more? It's clearly been underinvesting in its future supplies, and people have been pointing to that. The levels of actual exploratory drilling, you take some physical measure of what they're doing in order to ensure the reserves replacement is pretty alarming, and the physical investment in developing the new supplies, at the same time that it's pretty generally acknowledged that to continue

on the same trajectory of growth that it has been on for the last five -- six years, you're really quickly moving to a point in which Russia would have to move to production of both oil and gas in the entirely new geographical regions that are much, much more difficult, they're colder, they're more remote, they're, therefore, much more costly than the ones now. So it would be a big qualitative leap. It's like the United States moving from continental U.S. sources of energy in Texas, Louisiana and so forth to the Alaskan field, big, big deal. It's not just an incremental, we'll do a little bit next year, you do a big, big program that would last years and require massive investments. And most people think they're not doing enough to continue on that same trajectory.

So there's a fundamental question of can it produce more, at least within the reasonable future, but there's also this question that's not that much discussed about, does it even want to. Maybe, you know, maybe they decide that, why should they produce more oil and gas just because the rest of the world happens to need it now. And a lot will depend, of course, on the price, especially if the price remains high and grows, then they're going to get more rent, the wealth, the flow streams in, even if their own production flattens or dips slightly.

And to the extent that Russia begins to cut off subsidies, subsidize supplies of oil and gas to places like Belarus, and even perhaps begins to reduce domestic price subsidies within Russia, then it's less tied to the physical quantities, maintaining commitments in the physical quantities of supply the way it was during the

Soviet era. That was one of the big traps that the Soviet Union had. It was committed to delivering physical quantities of oil and gas to its satellite countries regardless of what the price was, as it was also for these energy consuming industries at home, and it still has that problem in a pretty big way, but it is reduced relative to the Soviet theory.

SPEAKER: Thanks. Let me just conclude with a word on energy security. Andre Larnionof (?) has rightly raised the question of, how do you define it, how do we work with that concept, and there are different definitions of energy security that have been used by a number of actors in the field.

Dan Yergin, your boss, has put forward a concept of that in Foreign Affairs magazine a few months back. One of our colleagues here at Brookings, a non-resident fellow, John Elkind, has written a paper which we've been looking at internally and will be putting out sometime soon. It offers the concept of thinking about energy security around four sets of issues; the availability of energy sources, the reliability of those sources, the affordability of that energy, and finally, the external consequences, in particular, the environmental consequences.

And depending on how one places a weight on those four different variables, those factors could result in very different energy policies in the United States, or France, or Russia, or Japan, depending on whether one is more focused on the reliability aspects, the availability issues, the environmental consequences, and so forth. And I think that there is a great deal of power behind that simple concept of these four

variables and how they've become weighted, and that is, indeed, something that we will be exploring in much greater depth in the next stages of this project. We thank you for your interest and attention. We look forward to having these sessions from time to time to be able to share ideas and get your input. And thank you very much to the panelists and to all of you.

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