S. HRG. 109–866

ENERGY SUPPLIES IN EURASIA AND IMPLICATIONS FOR U.S. ENERGY SECURITY

HEARING

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL ECONOMIC POLICY, EXPORT AND TRADE PROMOTION

OF THE

COMMITTEE ON FOREIGN RELATIONS UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

SEPTEMBER 27, 2005

Printed for the use of the Committee on Foreign Relations

Available via the World Wide Web: http://www.access.gpo.gov/congress/senate

U.S. GOVERNMENT PRINTING OFFICE
33–726 PDF WASHINGTON : 2007

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

COMMITTEE ON FOREIGN RELATIONS

RICHARD G. LUGAR, Indiana, *Chairman*

CHUCK HAGEL, Nebraska
LINCOLN CHAFEE, Rhode Island
GEORGE ALLEN, Virginia
NORM COLEMAN, Minnesota
GEORGE V. VOINOVICH, Ohio
LAMAR ALEXANDER, Tennessee
JOHN E. SUNUNU, New Hampshire
LISA MURKOWSKI, Alaska
MEL MARTINEZ, Florida

JOSEPH R. BIDEN, Jr., Delaware
PAUL S. SARBANES, Maryland
CHRISTOPHER J. DODD, Connecticut
JOHN F. KERRY, Massachusetts
RUSSELL D. FEINGOLD, Wisconsin
BARBARA BOXER, California
BILL NELSON, Florida
BARACK OBAMA, Illinois

KENNETH A. MYERS, JR., *Staff Director*
ANTONY J. BLINKEN, *Democratic Staff Director*

SUBCOMMITTEE ON INTERNATIONAL ECONOMIC POLICY, EXPORT AND TRADE PROMOTION

CHUCK HAGEL, Nebraska, *Chairman*

LAMAR ALEXANDER, Tennessee
LISA MURKOWSKI, Alaska
MEL MARTINEZ, Florida
GEORGE V. VOINOVICH, Ohio

PAUL S. SARBANES, Maryland
CHRISTOPHER J. DODD, Connecticut
JOHN F. KERRY, Massachusetts
BARACK OBAMA, Illinois

C O N T E N T S

ENERGY SUPPLIES IN EURASIA AND IMPLICATIONS FOR U.S. ENERGY SECURITY

TUESDAY, SEPTEMBER 27, 2005

U.S. SENATE,
SUBCOMMITTEE ON INTERNATIONAL ECONOMIC POLICY, EXPORT AND TRADE PROMOTION,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:35 p.m. in Room SD–419, Dirksen Senate Office Building, Hon. Chuck Hagel, chairman of the subcommittee, presiding.

Present: Senator Hagel.

OPENING STATEMENT OF HON. CHUCK HAGEL, U.S. SENATOR FROM NEBRASKA

Senator HAGEL. Good afternoon. Today's meeting of the Senate Foreign Relations Subcommittee on International Economic Policy, Export, and Trade Promotion will examine oil and natural gas energy supplies in Eurasia and U.S. energy security policy.

The recent tightening of world energy markets and damage wrought by Hurricanes Katrina and Rita to U.S. oil and natural gas production and refining capacity underscored the critical balance of America's energy resources. It is important that new hydrocarbon reserves are discovered and developed as we devote more attention to energy diversification, conservation, and development of more renewable and alternative sources of energy.

The Eurasian region—notably Russia, Kazakhstan, the Caspian Sea, and Azerbaijan—has become a vitally important energy basin and transit corridor. It has more than 10 percent of the world's proven oil reserves, and more than 30 percent of the world's proven natural gas reserves. The region's producers and its European consumers depend heavily on the transit routes through and around the Black Sea area, including the narrow Bosporus Straits, through which at least three million barrels of oil pass per day.

In the region, Russia is the largest player, holding the world's largest proven natural gas reserves and the eighth-largest proven oil reserves. Russia, today, is the world's largest exporter of natural gas and the second-largest oil exporter. And, notably, Russia is a key source of Europe's energy imports. Russia may also become a major source of energy for Asia in coming years. Vast unexplored tracts of Eastern Siberia may hold additional significant reserves that could be brought by pipeline to China, the Pacific Ocean, or both.

In May 2005, the Baku-Tblisi-Ceyhan Pipeline was completed, marking a milestone in international efforts to bring Caspian Sea oil reserves to market. The pipeline is expected to be fully operational by December of this year, when the first tankers will take delivery of oil from the Ceyhan terminal. By the end of 2006, the Baku-Tblisi-Ceyhan Pipeline is projected to transport over 500,000 barrels of oil per day. At full capacity, this pipeline will be able to deliver approximately one million barrels of oil per day to the Ceyhan terminal.

Some analysts estimate that by 2010 oil production in the Caspian Sea could exceed that of South America's largest producer, Venezuela. This region's natural gas production may eventually eclipse its oil production. The Caspian Sea's proven natural gas reserves today are comparable to those of Saudi Arabia. On the Caspian Sea, Kazakhstan is a central producer, exporting approximately one billion—or one million barrels of oil per day. Uzbekistan and Turkmenistan both have large reserves of oil and natural gas, but there are significant political, region, and commercial challenges that limit their development.

The Black Sea's energy transit infrastructure represents a major thoroughfare for the world's oil and gas exports. The efforts underway to build additional pipelines in this area are significant in light of the continued vulnerability of overdependence on the Bosporus and Turkish Straits.

The energy profiles of our European allies also bear consideration. Much of this region's transit infrastructure to the west flows through Russia's oil and gas pipeline networks.

The United States may not become a primary direct consumer of the oil and natural gas exports from Eurasia, but developing these reserves and bringing them to the world markets is a strategic geopolitical, economic, and energy interest for the United States. Forecasts of continued global increases in energy demand dictate our vital interest in this area. New energy supplies expand the worldwide availability of natural gas and oil for the benefit of all emerging countries and relieves demand pressure in the global energy marketplace.

Over a decade ago, the United States recognized a similar set of interests when the potential of the Caspian Sea was first becoming understood. Today, the Eurasian arc of energy supplies may represent a similar opportunity.

Over the past few months, I traveled to Ukraine, Turkey, Azerbaijan, Armenia, Georgia, Bulgaria, and Russia, including Eastern Siberia, to learn more about this arc of energy supply. The Eurasia region, from diversifying the East-West transit energy infrastructure to facilitating the development of Siberia, presents a more complex opportunity than the Caspian Sea did 10 years ago.

In coming months and years, critical decisions will be made as to whether and how these reserves are developed and delivered to the market. Some of these projects, such as bringing reserves from Eastern Siberia to the Pacific and China, present new challenges. International collaboration will be needed for Russia to overcome Siberia's inhospitable climate and construct thousands of miles of pipeline and successful develop East Siberia. Many of these countries are also constrained by difficult business and investment cli-

VerDate 11-MAY-2000 15:23 Apr 24, 2007 Jkt 000000 PO 00000 Frm 00006 Fmt 6633 Sfmt 6633 H:\DOCS\33726.TXT sfrela2 PsN: sfrela2

mates. The United States needs a strategic policy and clear objectives if we are to help shape these events, as we did in the Caspian.

This afternoon, I look forward to the testimony from the two panels of highly qualified witnesses who have joined us. I thank each for your time and energy to this critical and important subject. We are very much appreciative of the opportunity to exchange ideas and observations as we delve into these energy issues that are so important to the world.

The witnesses for our first panel are the Honorable Karen Harbert, Assistant Secretary of Energy for Policy and International Affairs, and Mr. Paul Simons, Deputy Assistant Secretary of State for Energy, Sanctions, and Commodities.

On our second panel are Mr. J. Robinson West, chairman, PFC Energy, Mr. Alastair Ferguson, deputy executive director for Gas Development of TNK-BP, in Russia, Ms. Zeyno Baran, director of International Security and Energy, The Nixon Center, and Dr. Michael Klare, professor of Peace and World Security Studies, Hampshire College.

Ladies and gentlemen, we welcome you. We appreciate your time. And I would ask, in the order of my introductions, that, Secretary Harbert, you begin. Thank you.

STATEMENT OF HON. KAREN HARBERT, ASSISTANT SECRETARY FOR POLICY AND INTERNATIONAL AFFAIRS, DEPARTMENT OF ENERGY

Dr. HARBERT. Thank you, Mr. Chairman.

And let me congratulate you on holding this hearing and for your interest in the region, which as you demonstrated, has a very significant contribution to make in enhancing the world's energy supply and energy security.

Also, as you noted, energy is back on the front pages as a result of the disastrous hurricanes, Katrina and Rita, and President Bush has made it very clear that diversifying our energy supply, both in terms of suppliers and fuel mix, is our highest priority. And this most recent experience really points to how integrated our energy markets are and how a disruption in one part of the world can impact the other. So, we welcome this opportunity to discuss how this can fit into the overall energy picture.

On the international energy policy front, the U.S. Government has been working with governments and the private sector around the world to build sustainable economic growth, increase energy production, and safeguard the environment. The benefit to us is increased supply, greater security of supply for global energy markets, and increased commercial opportunities for U.S. firms.

On the Eurasian side, oil and gas producers are key market players, and their energy potential is considerable.

Let me first give a brief overview of some of the resources in the region, their production and exports. I will ask that my written testimony be included for the record and then tell you a little bit about how the Department of Energy is helping to achieve the Administration's goals in this region.

As you noted, Eurasian reserves are approximately 10 percent of the total proven oil reserves in the world. Let me note that this is

only an estimate, and that's because many of these countries do not actually provide public or reliable reserve data. And that's something that we believe should be worked on.

Russia is the largest regional producer, with the production of about nine a half million barrels per day, and exports about 6.7 million barrels per day. It's second only behind Saudi Arabia. The Caspian region is producing about two million barrels per day. It also possesses significant gas reserves, but it is still dwarfed by Russia, which is the world's largest gas producer.

As a point of reference, in 2004 the U.S. used about 23 trillion feet of natural gas, and Russia has 1,694 trillion cubic feet.

In short, as you can see, Eurasia production will, and will continue to be, a significant contribution to world markets. But this begs the question, Where are these Eurasian energy resources going? Nearly all of Russia's gas flows to Europe, meeting about a third of the demand there. Eighty-seven percent of Eurasia's oil is exported to the former Soviet Republic, Central and Western Europe, and smaller amounts to China, Japan, and then to the United States.

The most efficient route that would support an increase in Russian exports to the U.S. would be via a northern pipeline to a deepwater port in the Barents Sea. Transneft is a state pipeline monopoly, and they're planning a pipeline that could add about a half-billion barrels per day to the world market—I'm sorry, half a million—but they have not announced a timetable for this pipeline construction or for oil exports.

Historically, to give some context, Russian exports to the U.S. have been about 45,000 barrels per day. But in the last 2 years, we've seen a dramatic increase. In the first months of this year alone, U.S. imported an average of 253,000 barrels of oil per day from Russia. Russia also plans to expand its gas market by targeting the U.S. with liquefied natural gas, which is going to be an increasing component of our energy supply mix here in the United States.

In early 2006, Gazprom plans to announce the development consortium for its giant Shtokman field. It lies off Russia's far north, in the Barents Sea. Shtokman is likely to be the world's largest energy project, and Gazprom expects to start exporting after 2010. Both ConocoPhillips and Chevron may be part of this development consortium. Russia also, through the Sakhalin II project, will be exporting gas in about 2008.

While it's important to consider where future Eurasian energy resources will be exported, the highest priority is that these resources simply make it to the market. As you noted, this is a fungibility of supply. So, the challenges are in developing and exporting these resources.

What are the challenges? Well, the challenges include problems with the investment and business climate, transparency, corruption, and the rule of law. In Russia's case, companies are hindered from energy investment by high taxes and undifferentiated fiscal regime that provides no incentives for hard-to-produce deposits. Resource development has also been hindered there by recentcentralization of the energy sector. This centralization, particularly in Russia's case, is very problematic. It is fostering an

opaque investment climate, it's decreasing competition, and it is also decreasing opportunities for qualified U.S. companies.

Another challenge is that many Eurasian reserves are in remote or offshore areas that are very technologically difficult and expensive to develop.

A lack of agreement among all of the Caspian littoral states remains a challenge for future resource development, as well. We also are facing, as I indicated earlier, on the legal and regulatory side, some uncertainties in the subsoil laws, which are being debated in Russia and in Kazakhstan. Both of these countries are trying to determine, What is the definition of strategic oil reserves? And I think that that will warrant further discussion.

What are the export challenges? Insufficient export capacity is a challenge for this area. It could undermine the expansion of Russia's access to global markets. Independent pipelines, with the exception of the Caspian pipeline consortium are basically nonexistent and independent—i.e., open access to Transneft's pipelines still remain problematic.

In this region, the Administration has consistently supported new pipeline development to strengthen not only regional cooperation and stability, but to encourage economic linkages that can mitigate regional conflicts and secure direct access to world markets, via Turkey and the Mediterranean, trying to avoid choke points such as the Bosporus Straits.

Given these obstacles, strengthening energy security in cooperation with Eurasia remains a challenge. In Russia, we have a Bilateral Energy Working Group. It is carrying out the agreements and the challenges set forth between President Bush and President Putin since 2002. We also are creating—or we have created the Commercial Energy Dialogue. It is a forum for joint industry energy discussion by companies, rather than governments. This Dialogue is now writing recommendations, due to us in November, how to better help and identify opportunities for increased energy trade and investment in Russia.

The Department of Energy also maintains dialogues with officials from Kazakhstan, Azerbaijan, on market reform and, in other Central Asian countries, the legal, fiscal, and regulatory policies.

We have formal energy relationships and partnerships with Kazakhstan and Azerbaijan, and, through those dialogues, we produce regular reporting.

In summary, I think there are a couple of things that we want to take into account as we move forward with our policy and implementing our objectives for this region.

We need to take a regional approach in addressing Eurasian energy topics. They are interrelated regions, interrelated countries.

We need to maintain a robust energy dialogue with these countries. They allow us, and them, to resolve issues in a government-to-government manner. And we need to take into account the private-sector concerns as they affect our policies.

We need to encourage more Eurasian energy exports. The U.S. has been a strong supporter of oil and gas development in the region, and we have facilitated relationships between U.S. and regional companies and financial institutions in this area.

VerDate 11-MAY-2000 15:23 Apr 24, 2007 Jkt 000000 PO 00000 Frm 00009 Fmt 6633 Sfmt 6633 H:\DOCS\33726.TXT sfrela2 PsN: sfrela2

We need to encourage multiple pipelines and Eurasian infrastructure expansion. We should maintain a focus on the construction of the northern pipeline in Russia.

Maybe most importantly, we need to encourage a more open and transparent investment climate for the region's energy sector.

The governments of the region must create the environment that will attract capital for oil, gas, and pipeline projects. Capital is a coward; it will go where it is most comfortable.

The private sector is really the only vehicle that can bring forth the capital and the technology and the management expertise needed to grow these economies and their energy sectors, particularly in those areas where these resources are so far flung and hard to get to.

In conclusion, U.S. energy security is strengthened when Eurasian countries are stable, are secure, and are strong energy producers and exporters with the capacity to diversify their economies. The U.S. and Eurasia will benefit when the region is maximizing its energy output. This means that leaders must be committed to market-oriented policies that stimulate this badly needed investment.

From the U.S. perspective, we have to diversify our energy supply. We have to diversify our energy mix. We know that we're going to be in need of increased liquefied natural gas. We understand LNG is not without challenges in our own country. We are seeking to address those. And the most recently passed energy legislation provides a path forward here in our own country.

As Russia steps forward on the world stage in leading the G-8 next year, we hope that they will take full advantages of opportunity to future address energy security from their perspective and from our perspective and, most importantly, from a world energy market perspective.

Thank you.

[The prepared statement of Dr. Harbert follows:]

PREPARED STATEMENT OF HON. KAREN HARBERT, ASSISTANT SECRETARY FOR POLICY AND INTERNATIONAL AFFAIRS, DEPARTMENT OF ENERGY

Thank you Mr. Chairman. I am pleased to have the opportunity to appear before you to discuss Eurasian energy supplies, the implications for U.S. energy security, and the Department of Energy's role facilitating the Administration's goals in the region.

To help ensure U.S. energy security, the U.S. Government consistently has called for supply diversity. The Eurasian oil and gas producers are key market players and their energy potential is considerable. The energy relationships between the United States and Eurasian countries are designed to strengthen the overall relationships between our countries and to enhance global energy security, international strategic stability, and regional cooperation.

First I would like to provide an overview of reserves, resources, and exports. Then I will address the challenges in this region and tell you about the Department's activities and relationships with Eurasian countries.

OIL AND GAS PRODUCTION AND RESOURCES

Russia and the countries in Central Asia and the Caspian are key contributors to the global oil and gas market. Russia produces about 9.5 million barrels per day of oil and exports about 6.5 million barrels per day to its export markets. Most of Russia's oil is exported to former Soviet countries and to Central and Western Europe, with small amounts to China and Japan. It is the world's second largest producer and exporter of oil just behind Saudi Arabia. In the 1990s, Russia experienced a dramatic downturn in production, but since the beginning of this decade the

growth rate rebounded averaging 8 percent per year. Recently, however, we are seeing a slowdown in the growth rate and the Russians are predicting production to grow by only 1 to 2 percent in the near term. There are a number of factors contributing to this decrease—the demise of Yukos, high taxes, the focus on increasing government control over the energy sector, and less investment. Some estimates predict that Russia could produce about 11 million barrels per day by 2015; however, this will depend on its ability to change the factors affecting investment in exploration and development. Russia is the world's largest gas producer, and although its gas production has been relatively flat, it is expected to continue on its current growth path if there is sufficient investment in new fields. Russia is currently producing about 57 billion cubic feet per day—most of which is exported to Europe.

The Caspian region continues its upward trend and is now producing about 2 million barrels per day with production predicted to reach more than 5 million barrels per day by 2015. Its natural gas production is about 13.5 billion cubic feet per day. Turkmenistan is the region's largest gas exporter, with its primary markets in Ukraine and Iran. Industry observers speculate that its production could double in the next 5 years with most of it going to Russia. Azerbaijan may produce about 2 to 2.4 billion cubic feet per day by 2015 with the Shah Deniz field coming on line. Projections for Kazakhstan production are still uncertain given the lack of export capacity.

Russia has vast oil and gas reserves, but since reserve data are not made public, it is difficult to know with certainty what Russia really has. Its proven oil reserves are conservatively estimated at about 60 billion barrels as reported by the Oil and Gas Journal. However, Russian companies have estimated that oil reserves could be around 100 billion barrels. Also, many areas have yet to be explored and are in difficult and remote regions. Russia, followed by Iran, has the world's largest natural gas reserves of about 1680 trillion cubic feet.

Resource estimates for the Central Asia-Caspian region vary widely because many areas of the region have not been fully explored. EIA indicates that proven oil reserves are somewhere between 17 and 44 billion barrels. Companies have estimated that resources (not proven reserves) are in excess of 100 billion barrels. EIA estimates the region's proven natural gas reserves at 232 trillion cubic feet. Again, natural gas reserves are not fully explored and could be considerably greater. Whatever the numbers, it is clear that the Caspian region is a significant source of oil and gas reserves that can become an important source of supply for the global market. The challenges are in developing and exporting these resources.

EXPORT CHALLENGES

One of the major difficulties faced by Russia and the Caspian states as they attempt to develop and export their energy resources is the lack of export transportation infrastructure. During the Soviet era, all of the oil and natural gas pipelines in the Caspian Sea region (aside from limited capacity in northern Iran) were routed through Russia. Prior to 1997, exporters of Caspian region oil had only one major pipeline option available to them, a 240,000-barrel-per-day pipeline from Kazakhstan to Russia. Since independence, several new oil export pipelines have been built. However, the relative lack of oil and gas export options continues to limit exports to markets outside the former Soviet Union.

The Administration has consistently supported the development of new pipeline projects, especially an East-West transport corridor that would stretch from Kazakhstan through Azerbaijan, Georgia, and Turkey to the Mediterranean. The Baku-Tbilisi-Ceyhan (BTC) oil pipeline, the first project in this East-West transport corridor, is in the final stage of construction, and we expect the first oil to be loaded on tankers at the port in Ceyhan later this year contingent upon the resolution of several pending minor construction delays. It is expected to ship between 1 and 1.5 million barrels per day by 2009 and operate for 40 years. Negotiations are underway to include Kazakhstan in this pipeline project. We encourage Kazakhstan to reach agreement with Azerbaijan on an Inter-Government Agreement to define the terms under which Kazakhstan oil will enter BTC. This step would constitute a strong statement of the Kazakhstan Government's commitment to expanding its energy cooperation with its Western neighbors.

By extending its reach across the Caspian Sea, an Aktau-Baku-Tbilisi-Ceyhan (ABTC) project would strengthen regional cooperation and stability, encourage economic linkages that can mitigate regional conflicts, and help Kazakhstan secure direct access to world markets via Turkey and the Mediterranean, without subjecting its exports to the uncertainties of geographic chokepoints such as the Turkish Straits.

In Russia's case, the export capacity situation is improving with increased capacity from Baltic ports and via rail shipments. If Russia's midterm oil production increases as it recovers from a lack of investment following the Yukos case, Russia must expand its oil infrastructure. However, Russia seems to be relying on geopolitical factors rather than market forces to determine which pipelines to build and this could undermine the expansion of Russia's access to global markets. In short, Transneft has selected favored projects, such as the Baltic Pipeline System expansion and the Far East pipeline, at the expense of industry-preferred projects such as the Caspian Pipeline Consortium expansion and construction of a Northern pipeline. Independent pipelines, with the exception of the Caspian Pipeline Consortium, are non-existent, and independent (open) access to Transneft's pipelines remains problematic.

In 2001, the Caspian Pipeline Consortium, Russia 's first and only private pipeline, was completed and now ships almost 700,000 barrels per day of Kazakh and Russian crude to the port of Novorossysk. It is expected to ship 1.3 million barrels per day once its expansion plans are approved. This pipeline is a unique project involving more than eight companies and the governments of Russia, Kazakhstan, and Oman. Negotiations among these governments and companies have been challenging. We are hopeful that the final obstacles to approve the expansion are soon resolved.

The most efficient route that would support an increase in Russian oil exports to the U.S. would be via a pipeline from Russia's Far North to a deepwater port in the Barents Sea. Companies and government officials have been discussing this proposal since 2002, and currently, Transneft is planning a 290-mile pipeline that could add 500,000 barrels per day to the world market, but has not announced a timetable for pipeline construction or first oil exports. Historically, Russian exports to the U.S. have been only around 45,000 barrels per day, but the last 2 years have seen an increase. In the first 6 months of 2005, the U.S. imported an average of 253,000 barrels of oil per day from Russia.

Russian oil exports to Asia are projected to increase in coming years. The Russian government continues to make strategic alliances with Asian countries that promise more oil deliveries. The recently approved construction of the Far East pipeline will be key for increased oil exports to Asia. It is expected to cost more than $15 billion, cross some 2700 miles, and transport 1 to 1.5 million barrels per day at full capacity. The first phase of development will reach China; a pipeline extension likely will later reach Russia's Pacific Coast to serve Japan and other markets, including the U.S. west coast. Questions remain on whether there is enough regional oil to supply this pipeline. Eastern Siberia is an undeveloped area with an unknown resource base. Reliable reserve figures are not available for this region, and it will take time before new production comes to market. Some anticipate the need to divert Western Siberian resources to fill the pipeline, but Russian company and government officials maintain that the Eastern Siberia resource base is sufficient to fill the Far East pipeline. Caspian oil exports to Asia will increase with the new Kazakhstan-China oil pipeline. China is financing construction of this 600-mile, $850 million pipeline, capable of moving 400,000 barrels of crude a day. The second section of the three-part pipeline is due to come on line in December 2005.

In discussing export routes for this region, we must recognize the importance of Turkey. Its strategic location makes it a natural energy bridge for transporting Russian and Caspian oil and gas. Under optimal conditions, approximately 6 million barrels per day of oil could transit Turkey in a given year. That number includes 3 million barrels per day shipped through the Bosporus and Dardanelles Straits (hereafter referred to as the Bosporus), 1.5 million barrels per day of Iraqi oil via pipeline, and 1.5 million barrels per day through the BTC pipeline. The actual amount of crude presently transiting Turkey is much lower, about 3 million barrels per day, due to repeated attacks on Iraq's oil infrastructure and the fact that it will be some time before BTC is at full flow.

Since it will take time to secure Iraq's pipeline and get BTC to full flow, the importance of the Bosporus Straits, which connect the Black Sea to the Mediterranean Sea, becomes increasingly important. Turkey has raised concerns about the ability of the Bosporus Straits, already a chokepoint for oil tankers, to handle the current tanker traffic load. The Turks see crude transports through the Bosporus as an accident waiting to happen, and they hope to reduce tanker traffic. As a result, a number of options are under consideration for oil transiting the Black Sea to bypass the Bosporus Straits. We are encouraging countries in this region to develop alternative routes to the Bosporus Straits.

In support of the Administration's commitment to multiple pipelines, the U.S. Trade and Development Agency has funded feasibility studies of several Bosporus Bypass pipeline projects. These studies are an important contribution to the deci-

sion-making process on the addition of pipelines to connect Central Asia to Western oil markets.

In regard to gas exports, the gas pipelines built during the Soviet era continue to serve as the conduit for Russian and Central Asia gas exports. Russia sends most of its gas to Europe, meeting about a third of Europe's demand. Russia has been a reliable gas supplier to Europe and will help meet Europe's increasing gas demand. In 2002, Gazprom added to its export capacity by building the Blue Stream pipeline under the Black Sea to Turkey. It can deliver about 16 billion cubic meters per year, but much of it is unused due to insufficient demand and Turkish claims that the gas is of poor quality. Gazprom also is considering an expansion of its Yamal pipeline to Europe, building a pipeline all the way to Great Britain, and constructing a system in the Far East that would bring Kovyka gas to South Asian markets.

Russia does plan to expand its gas markets by developing its LNG capability. It views the U.S. as the No. 1 market. On September 2, a Gazprom delegation traveled to Cove Point, Maryland to celebrate the arrival of Gazprom's first LNG shipment to the U.S. Gazprom is not currently producing LNG, but the company arranged a swap to begin its participation in the North American market. Russia's potential for gas exports to the U.S.—as LNG—are significant. Having announced a short list of five companies with which it will cooperate, in early 2006 Gazprom plans to announce a development consortium for its giant Shtokman gas field, which lies offshore Russia's far north in the Barents Sea. LNG from this field would be targeted to the United States. The size and scale of this project cannot be overstated. Shtokman is likely to be the world's largest energy project with reserves of 113 trillion cubic feet of gas and 31 million tons of gas condensate. Gazprom expects to start Shtokman LNG exports of 15 million tons per year after 2010, and ConocoPhillips and Chevron are on the short list to take part in the development consortium.

Although Gazprom is focused on Shtokman to target North American markets, Russian LNG is also likely to reach the U.S. from the Sakhalin-2 project on Russia's Pacific coast. Shell, the Sakhalin-2 operator, and the other project consortium members—including Gazprom—are building the world's largest LNG plant. The facility is expected to come on stream in 2008 and produce 9.6 million tons a year of LNG to supply Japan, South Korea, China and the United States. Initial contracts call for Shell to export 1.6 million tons of LNG a year to a planned LNG facility on the West coast. Russian LNG also could be developed from its Yamal Peninsula, and a U.S.-Russian partnership is considering a major project in that region.

Caspian gas is produced primarily by Uzbekistan and Turkmenistan, and in smaller volumes by Kazakhstan and Azerbaijan. These countries rely on Soviet-era pipelines, owned by Gazprom, to get their gas to Russian and European markets. The South Caucasus gas pipeline now under construction from Baku, Azerbaijan, through Georgia to Turkey, will significantly increase the opportunity to move gas from the south Caspian Sea to Western markets. Extending this pipeline on the East from Turkmenistan to Baku and, on the west, from Turkey to Southern Europe, and the increased investment in gas reserve development to support the pipeline, would provide a major opportunity to improve the supply of gas to world markets. Building a consensus among the countries involved in such a project, negotiating the necessary agreements and encouraging the flow of capital to the region are obviously major challenges, but we believe a regional East-West gas pipeline is an important goal toward which we will continue to work. Asian markets are too distant from Caspian reserves to be financially viable, and until new infrastructure is created, North American consumers are unlikely to use any Central Asian gas.

It is clear that our interests are aligned with those of the Eurasian countries. We seek increased supplies from diverse sources and Eurasian countries seek to maximize output and exports. The U.S. and Eurasian countries acknowledge that increased commercial cooperation and energy trade are shared goals. But although our interests are aligned, numerous challenges present obstacles to expanding energy trade between the U.S. and Eurasia.

RESOURCE DEVELOPMENT CHALLENGES

One of the most significant issues for Eurasian countries is increasing resource development and production. Many of the reserves are in remote or offshore areas or will otherwise be technologically difficult and expensive to develop. The Caspian Sea is 700 miles long and contains six separate hydrocarbon basins, most of which have not been developed or even fully explored.

The most significant problem with the Caspian Sea's oil and natural gas resources is the lack of an agreement among the five littoral states. Although Russia, Azer-

baijan, and Kazakhstan have each signed bilateral agreements with each other, Iran and Turkmenistan have not. Iran's position is that each country be given 20 percent of the Sea's resources. In other words, each country ought to receive 20 percent of all production revenues from the entire Caspian Sea regardless of investment.

Russia relies on its own and foreign firms to develop hard-to-reach assets. But companies are hindered from investment by high taxes and an undifferentiated fiscal regime that provides no incentives for hard-to-produce deposits. In recent weeks, the government has begun serious discussions about tax differentiation to provide incentive for greenfield development and brownfield renovation. Energy producers in Russia are hopeful that energy tax differentiation will be implemented.

Other significant challenges in both Russia and Central Asia include problems with the investment and business climate, corruption, rule of law, and transparency. Each country faces its own challenges in improving the environment for more energy investment and business. In Russia, one potential barrier to investment is worth noting: the subsoil law. A new law on subsoil development and amendments to the current law are still being considered by the Russian parliament, the Duma. While the terms are not finalized, it is likely that legislation will place restrictions on companies deemed foreign and limit foreign investors from developing "strategic" oil and gas or mineral deposits. At this time, the Russian government has not specified what type of ownership structure constitutes a foreign firm or which assets will be considered strategic. However, we continue to seek clarification from Russian officials on these issues.

Challenges in Kazakhstan's investment environment concern a growing feeling in Kazakhstan that past agreements with foreign investors were too generous. The investment climate has been affected by such things as changes in laws relating to domestic content and government policy on visas for expatriate workers. A dispute over provisions of the production sharing agreement (PSA) with Tengizchevroil, while resolved, led to a government statement that future PSAs would have less favorable provisions for foreign investors, and, indeed, Kazakhstan's law has been changed to require that the government-owned oil and gas company KazMunaiGaz now own at least half of any PSA project and act as contractor in all new offshore PSAs. When a new series of blocks is offered for lease, the direction of the government with respect to investment terms should become clear.

Turkmenistan is host to one of the largest gas reserves in the world. However, the legal and regulatory framework in that country lacks the credibility necessary to attack significant investment to develop an energy transportation infrastructure. We hope that this situation will change, and we look for opportunities to engage Turkmenistan on this issue.

Eurasian resource development also has been hindered by centralization of control in the energy sector. Russia in particular has consolidated Kremlin control over energy companies. The Russian government is nearing completion of its acquisition of the 10.7 percent stake needed to have a controlling 50 percent plus stake in Gazprom. Rosneft and Gazprom are competing to acquire the Russian oil company Sibneft, which at this time is still free of any government ownership. Rosneft acquired Yukos assets and is seeking to acquire even more. This centralization is obviously problematic: it decreases competition and the opportunities for U.S. firms. And in cases throughout the world, we have seen decreases in efficiency when national oil companies assume control of assets that were operated by private oil companies.

ENERGY SECURITY CHALLENGES

Given the obstacles discussed above, strengthening energy security in cooperation with Eurasia remains a challenge.

We maintain that the best way to strengthen energy security and meet Eurasian and U.S. goals is to expand commercial energy cooperation, which I will discuss further in a minute.

On a government-to-government level, we are working with many Eurasian countries to strengthen the overall relationship between our countries and enhance global energy security, international strategic stability, and regional cooperation.

DEPARTMENT ACTIVITIES

With Russia, our bilateral energy dialog focuses on meeting the objectives established by President Bush and President Putin in their 2002 and February 2005 joint statements. They tasked us to carry out the governmental aspects of the energy relationship, and in 2002 the Secretary of Energy and the Russian Minister of Energy established the Energy Working Group (EWG).

The EWG has proven to be an excellent mechanism for regularly and candidly discussing our mutual successes and the remaining obstacles to promoting energy

trade and investment. We believe the dialog has correctly become more finely focused over time and that in the future it will focus on promising areas for cooperation such as LNG, pipeline infrastructure, and energy legislative and regulatory experiences.

It is important to also note that, beyond the EWG, a slightly less formal but no less frequent and important process exists in which senior officials of both governments meet to discuss current and future issues that require resolution, a sharing of views, or government action. I note that among the first foreign dignitaries that Secretary Bodman met in his capacity as Secretary of Energy were Alexey Miller of Gazprom, Anatoly Chubais of Unified Energy Systems, Minister of Industry and Energy Khristenko, Minister of Economic Development and Trade Gref, Minister of Foreign Affairs Lavrov, Prime Minister Fradkov, and Ambassador Yusufov. That is an impressive demonstration of commitment to the energy relationship in such a short and busy period. I should add that Secretary Bodman visited Russia, Ukraine, and Azerbaijan within his first 4 months on the job. While in Azerbaijan, Secretary Bodman participated in ceremonies commemorating the loading of first oil into the BTC pipeline.

The other key component to the U.S.-Russia Energy Dialogue is the industry-to-industry cooperation through the Commercial Energy Dialogue and commercial partnerships. In December 2002, the two governments sponsored the creation of the Commercial Energy Dialogue (CED), designed to be a forum for organized, joint, pan-industry energy discussion by the companies rather than by the governments. The goal was to make recommendations to both governments to remove obstacles to, and identify opportunities for, increased energy trade and investment. The American Chamber of Commerce in Russia and the Russian Union of Industrialists and Entrepreneurs agreed to co-chair the CED, and numerous companies on both sides joined. The CED submitted their initial recommendations to the two governments in September 2003 at the second U.S.-Russia Commercial Energy Summit, and the recommendations were incorporated into our bilateral dialog. These recommendations remain one of the finest-ever encapsulations of the industry's view of critical steps needed and opportunities yet to be fulfilled. The CED members are now updating their recommendations and will submit them in a November report to President Bush and President Putin and their respective Departments of Energy and Commerce. The governments will then review the report and make every effort to respond to the energy industry community's recommendations.

With commercial partnerships, the number and dollar value of U.S.-Russian business partnerships in the energy sector are below their potential and the level needed to support necessary growth of oil and gas production and exports. There have been notable successes, but too few. The Caspian Pipeline Consortium shipped its first crude, culminating several years of cooperation in construction and management between U.S., Russian, and other companies. The Sakhalin-1 project has become the largest U.S. investment in Russia and will mark its first oil production on October 1st. Lukoil expanded its gasoline retail network on the U.S. east coast. ConocoPhillips and Lukoil struck a major deal involving upstream, downstream, and third-country cooperation. Marathon purchased a medium-sized oil producer in Russia. Amerada Hess, a medium-sized U.S. oil company, entered the Russian sector for the first time. Gazprom made a strategic decision to enter the global LNG market, with a major focus on the North American market.

The Department of Energy also maintains active dialogs with energy officials from Kazakhstan and Azerbaijan on market reform in the energy sector and the development by these and other Central Asian countries of sound legal, fiscal, and regulatory policies to support economic growth, including energy development. In December 2001, we established a U.S.-Kazakhstan Energy Partnership. In July 1997, we established the U.S.-Azerbaijan Energy Partnership. Under the Partnership, the Department is committed to cooperation across the entire range of energy policies and technologies. Departmental officials meet regularly with representatives of the Azerbaijan and Kazakhstan governments.

SUMMARY

To sum up, I would like to leave you with what we believe are important actions to increase energy security with U.S. and Eurasian cooperation.

- Take a regional approach when addressing Eurasian energy topics.
- Maintain energy dialogs with the Eurasian countries. They allow U.S. and Eurasian countries to discuss and resolve issues. The energy dialogs also can facilitate opportunities for U.S. and Eurasian companies to work together on future investments in each other's energy industries and in other parts of the world.

• Encourage more Eurasian energy exports. The U.S. has been a strong supporter of oil and gas development in the region and has facilitated relationships between U.S. and regional companies and financial institutions in Eurasian energy exploration and development. With Russian oil exports, we welcome additional crude volumes, and according to the companies that operate the Louisiana Offshore Oil Port, we can receive about 1 million barrels per day or more of Russian oil.

• Encourage multiple pipelines and Eurasian infrastructure expansion. We should maintain focus on the construction of a Northern Pipeline in Russia. This project is commercially sensible and could deliver Russian crude to the U.S. even more quickly than Persian Gulf exports can reach the U.S. We strongly support a Trade and Development Agency feasibility study that would analyze the U.S. market's receptivity to Russian crude. Such a study could put to rest the misinformation that exists in the Russian energy sector that the U.S. can only accept limited amounts and quality types of Russian crude.

• Encourage a more open and transparent investment climate for the region's energy sector. The governments of the region must create the environment that will attract the capital for oil, gas and pipeline projects. The private sector is the best way to bring forth the capital, technology, and management expertise needed to grow these economies and their energy sectors. No Eurasian government has the financial or other wherewithal to build the oil and gas fields, pipelines, refineries, ships, and distribution networks, or even the hydrogen filling stations one day, of the future. Our job in the government is to encourage the adoption of the best environment for commercial actors to do business.

CONCLUSION

U.S. energy security is strengthened when Eurasian countries are stable and secure energy producers and exporters, with the capacity to diversify their economies. The U.S. and Eurasia benefit when the region is maximizing its energy output to support global, and its own economic growth. This means that leaders must be committed to market-oriented policies that stimulate needed investment.

U.S. energy security is strengthened by diversifying our supply of energy by increasing our imports of Eurasian gas, especially of liquefied natural gas. We understand that LNG is not without challenges in this country—but we are steadfast in our support of natural gas as a cleanburning fuel that can be imported safely, and increasingly more cheaply, regasified, and distributed through our existing gas pipelines. American natural gas demand is projected to grow by nearly 40 percent over the next two decades, while our imports of natural gas will more than double from 4 trillion cubic feet annually to 9.5 trillion cubic feet. LNG will supply virtually all of that increase.

Finally, U.S. energy security can be strengthened by other countries agreeing on what the priorities are for energy security. To this end, we look forward to the opportunity afforded to Russia as the President of the G-8 in 2006. Russia has selected energy security as its theme, and we continue to work with our Russian colleagues on just what energy security means—for them, for us, and for the world.

Thank you.

Senator HAGEL. Secretary Harbert, thank you. And your full statement will be included in the committee.

STATEMENT OF PAUL E. SIMONS, DEPUTY ASSISTANT SECRETARY OF ENERGY, SANCTIONS AND COMMODITIES, BUREAU OF ECONOMIC AND BUSINESS AFFAIRS

Mr. SIMONS. Thank you, Mr. Chairman.

Let me also extend my thanks to you for your initiative in calling this hearing. We certainly appreciate your personal interest in this topic, which is very timely in this era of tightened energy security. We also agree with you that Russia and Central Asia are very much central to global energy security and will become increasingly important in the next several decades.

Russia, as you noted, has already become one of the world's leading oil and gas suppliers, and yet it still has many interesting opportunities to pursue. Production in Azerbaijan is ramping up as new transit opportunities come online. And Kazakhstan is very

well positioned to become an important global energy supplier in the current decades.

I'd like to make two points up front. Number one, the U.S. Government very much speaks with one voice on Russia and Caspian energy issues. You'll note that the text of my testimony very much dovetails with Assistant Secretary Harbert's, so I won't duplicate that in my oral statement.

And, secondly, energy is very much an important and growing issue in our bilateral relationship, in our bilateral diplomatic relationship, with the countries of Russia, as well as Central Asia. Mr. Chairman, it should be noted that during your visit, Ambassador Burns, who was in communication with me today, wanted me to extend his regards, and to let you know that he appreciates your interest in this issue. And, certainly from the President down to the Secretary to the Assistant Secretary level to our ambassadors, we're very much concerned with energy, and we consider it an important issue in all our bilateral relationships.

Russia is very much the predominant energy player in the post-Soviet sphere. Russia now accounts for about 20 percent non-OPEC oil product, and, despite some leveling off of production that we've seen this year, is still—has been the fastest growing among the non-OPEC producers in recent years.

As you know, Mr. Chairman, U.S. energy companies have participated actively in the Russian energy market since about 1992. The potential does remain promising. But, as you pointed out, and as Assistant Secretary Harbert pointed out, while the U.S. companies are poised to make additional investments in Russia, the rules of engagement are shifting and do remain in question. Russian industry has been consolidating in recent years, and the Government's role has been centralizing and expanding. Likewise, Russian operators have made great strides to control certain key aspects, the upstream and downstream activities, from exploration to transport. And this has been somewhat troubling.

In our view, Russia's primary challenge in the coming years will be to continue to meet its role as a burgeoning oil and gas producer, but to strive to accommodate these nationalistic pressures, these centralization pressures, while also reaching out to capital and technology from foreign investments to develop new projects.

So, we continue to remind the Russians that U.S. companies seek a stable and predictable commercial environment. They're calling for clearer, sounder operating rules, clarification of laws on the subsoil, on state secrets, and a review of licensing procedures and tax policies that discourage investment.

Assistant Secretary Harbert mentioned four key areas we're working on with Russia. Clearly, the export infrastructure is important. LNG cooperation is important. Expansion of the Caspian pipeline consortium is important. And the more general attitude towards foreign investment— in particular, in the upstream—and I think this is where your trip to Eastern Siberia was very valuable, because, as you noted in your opening statement, very harsh climate, the lack of infrastructure, remote locations, and complex geology really cries out for the type of project management expertise that foreign investment can bring.

VerDate 11-MAY-2000 15:23 Apr 24, 2007 Jkt 000000 PO 00000 Frm 00017 Fmt 6633 Sfmt 6602 H:\DOCS\33726.TXT sfrela2 PsN: sfrela2

So, as more attention is focused on Eastern Siberia, we will be encouraging Russia to work with international partners, to be transparent with data, to reach out to foreign investment, to adopt new technologies, to safeguard the environment as it explores and develops this very interesting resource.

Initial signs are that Russia may be limiting the level of foreign participation in certain auctions for blocks in Eastern Siberia. We will press the Russian Government to reverse this approach, noting that substantial investments will be needed to develop these very remote fields.

A couple of words on Kazakhstan before we move on to the questions. Kazakhstan and the entire north Caspian region also have tremendous resources. U.S. energy companies were involved, at the very start, in opening up this region. They were among the first non-CIS foreign investors in Kazakhstan, and we certainly expect American companies to be very active in Kazakhstan for many years to come.

In that regard, we note that we have strongly encouraged the Government of Kazakhstan to act constructively and responsibly in bilateral efforts with Azerbaijan to link its Caspian ports up by tanker to the very important BTC pipeline. We certainly believe that this effort, which would provide an export platform for future production—in particular, at Kazakhstan's Kashagan field— must be held to the same very high standards that were upheld several years ago in the BTC intergovernmental agreement. And this is an area that we're working on very actively with the Government of Kazakhstan.

Finally, just in conclusion, Russia and the Caspian continue to represent very promising opportunities for upstream oil and gas investments needed to meet glowing global demand over the next couple of decades. We certainly recognize Russia's leadership role in global energy markets. This is something we will be focusing on in the G-8 Summit next year. And we underscore the contributions that—very, very valuable contributions that Russia has made over the past decade to supply expanding world oil demand. And I would note that most of those contributions were made by the Russian private sector, which developed substantially over this period.

We'll continue to work with U.S. energy companies—and the Russian and Kazakh Governments, in particular—to encourage production increases to meet expanding global demand, as well as the expansion of the transport infrastructure, particularly, as I mentioned, by expanding the Caspian pipeline consortium, as well as the BTC pipeline.

We'll emphasize to these countries the need to advance corporate governance and transparency issues—I know this was the topic of our hearing last year on Africa—including the application of revenues from oil and gas activity, adherence to the rule of law, strengthening of regional stability, broadening stakeholder participation, safeguarding the environment, and improving the investment climate.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Simons follows:]

PREPARED STATEMENT OF PAUL E. SIMONS, DEPUTY ASSISTANT SECRETARY OF STATE FOR ENERGY, SANCTIONS AND COMMODITIES, U.S. DEPARTMENT OF STATE

Mr. Chairman, distinguished members of the Sub-Committee, I am pleased to be here today to discuss trends in oil and gas exploration, development and transportation in Russia and other regions of the former Soviet Union. I am also looking forward to addressing the greater region's rich potential to uncover additional reserves and expand production in coming years, with the participation of U.S. energy companies. Clearly, our approach to engaging Russia and resource-rich surrounding areas on energy cooperation is pertinent today, as the world confronts tight oil markets and as we consider ways to deepen energy security, nationally and globally.

The U.S. Energy Information Administration forecasts that the world is likely to consume about 120 million barrels of oil per day in 2025. That is a significant increase from current global consumption of about 85 million barrels per day. Moreover, as part of our national effort to shift to cleaner burning fuels, U.S. demand for natural gas, particularly imports of liquefied natural gas, is set to expand. U.S. demand may reach 32 trillion cubic feet—a 35–40 percent increase over current levels—by 2025. Meeting this expected demand will be challenging, as production from many traditional oil and gas fields, from West Texas to the North Sea, has plateaued or declined, while new fields present a series of political, technical and economic challenges to develop. Thus, to avoid shortfalls, we must press every lever in our energy security arsenal. This includes, as detailed in our national energy policy, promoting conservation and improving energy efficiency by adopting new technologies and applying market-based incentives, and diversifying energy supplies, especially in terms of greater imports of liquefied natural gas. We need to support the development of alternative fuels, and work with our allies to modernize and protect energy infrastructure worldwide.

It also means expanding oil and gas production at home, including our work to advance the development of Alaska's vast oil and natural gas reserves, and to bring greater diversity to world energy production in environmentally friendly ways. Through energy diplomacy abroad, in partnership with our G-8 counterparts, we are pressing oil-producing countries for policy reforms, including the removal of barriers to trade and investment in energy production, transportation and refining. We are also emphasizing the need for transparency, reliability and availability of oil and gas market data.

The former-Soviet region that is the subject of this hearing will make important contributions to global energy security in the coming decades. Russia has already become one of the world's leading oil and gas suppliers, yet has more resources to exploit; production in Azerbaijan is ramping up as new transit options come on line; Kazakhstan is well positioned to become an elite energy supplier in coming decades; energy companies of all sizes from all over the world are expressing interest in deepwater Black Sea exploration.

The challenge in this vast region is for governments and private producers to continue to build on resources and momentum, to work together to realize the greater region's full potential. With local resources and U.S. capital and technology, Russia and the rest of the region could increase output dramatically—much to the benefit of local governments and populations as well as the global energy market. But the region cannot fully recognize this potential unless local governments provide a predictable and reliable investment regime, streamlined and backed by investor-friendly legislation. Judicial systems must be independent and strong, adhering to rule of law, being transparent and recognizing the sanctity of contracts. Moreover, local governments must pursue a flexible, responsible approach to expanding new and existing pipeline capacity or other transport options—one that is based on economics, rather than politics. Local and national governments in the region should also establish procedures to involve communities in development, to increase public awareness, explain public benefits and allay concerns about detrimental environmental and health consequences.

All the while, it will be important to keep in mind that high oil prices can reduce incentives for governments in major oil exporting nations to pursue economic reforms and liberal investment regimes that promote the efficient development and distribution of natural resources. We must remind energy producers of the need to avoid backtracking on reforms and reinforce the crucial, central role of private investment, which fosters efficiency, promotes transparency and increases benefits to the general population.

RUSSIA: THE LARGEST NON-OPEC PRODUCER, EXPORTER

Russia is the predominant energy player in the post-Soviet sphere, producing about 9.5 million barrels of oil per day and over 22 trillion cubic feet of natural gas

per year. Russia's unrivaled growth in crude oil output—fields in Western Siberia expanded production by 14 percent per year 1999–2004—are supplying extremely tight world markets with incremental oil production. Russia now accounts for 20 percent of non-OPEC oil production, and, despite a leveling off of production this year, still has been the fastest growing among non-OPEC producers in recent years.

U.S. energy companies have participated in the Russian market since 1992. Sakhalin I is an excellent example of U.S.-Russia joint investment projects. The Caspian Pipeline Consortium's Tengiz-Novorossiysk pipeline is another example of significant investment in the region. The Russian market's potential remains attractive. But while U.S. companies are poised to make additional investments in Russia, the rules of engagement are shifting and remain in question. Russian industry has consolidated in recent years, and the government's role is centralizing and expanding. The forced sale last year of the principal operating asset of Yukos, in the eyes of foreign investors, had negative repercussions on Russia's outlook to the investment community. In the post-Yukos environment, which is still developing, two government-owned entities, GazProm and Rosneft, increasingly control energy assets; another state-owned entity, Transneft, maintains its domination of the oil transport sector.

Russian operators have made great strides to control many key aspects of upstream and downstream activities, from exploration to transport mechanisms and related infrastructure. Subsequently, Russia's neighbors, particularly the Baltic States, Poland, Ukraine and Georgia, have expressed concerns that Moscow uses its strong position as energy provider as a foreign policy lever, e.g., by manipulating quantities exported or prices. Meanwhile, Russia increasingly sees the market for its oil and gas exports shifting over time from Europe, where growth is slow, to Asia and the United States, which is keen to receive its supplies of crude oil and liquefied natural gas.

Russia's primary challenge in coming years, in our view, will be to continue to meet its role as burgeoning oil and gas producer, striving to accommodate nationalistic pressures to centralize, while also seeking capital and technology from foreign investors to develop new projects. We remind the Russians that U.S. companies continue to seek a stable, predictable commercial environment, and call for clearer, sounder operating rules, e.g., clarification of laws on subsoil and state secrets and a review of licensing procedures and tax policies that discourage investment. In recent years, we have seen two large Russian firms enter into partnerships with Western companies. TNK has partnered with BP and Lukoil has joined ranks with ConocoPhillips. We see these partnerships as strong statements of shared interests and excellent examples of cooperation between former rivals and adversaries. We encourage this type of cooperation, and would like to see it expanded.

U.S. strategic goals, in terms of energy security, have not changed vis-a-vis Russia. As iterated in the Joint Statement by President Bush and President Putin on U.S.-Russia Energy Cooperation, signed February 24, 2005, in Bratislava, Slovakia, our nations should concentrate on ways to enhance energy security, diversify energy supplies, improve the transparency of the business and investment environment, reduce obstacles to increase commercial energy partnerships, and develop resources in an environmentally safe manner. We know that Russia values an official U.S.-Russia energy dialog, particularly the Energy Working Group and the Commercial Energy Dialogue. We also expect Russia to focus on energy security during its G-8 Presidency next year. With these notions in mind, we will continue to work with our Russian counterparts to boost energy supplies to world markets and seek commercial opportunities for American energy firms.

RUSSIA'S RESOURCES . . .

Analysts report that Russia has proven oil reserves of over 60 billion barrels, most of which are located in Western Siberia, between the Ural Mountains and the Central Siberian Plateau. Approximately 14 billion barrels of oil resources exist on Sakhalin Island, in the far eastern region of the country, just north of Japan. Eastern Siberia, much of which is unexplored, is thought to contain additional reserves of oil and gas. The Sea of Azov, in the South, may also be energy rich. Last year, Russia produced over nine million barrels of oil per day, and exported about 6.7 million b/d of oil and oil products. Only Saudi Arabia produced and exported more. During the period 2000–2004, Russia increased oil production by 8.5 percent per year; exports rose 14 percent annually. This year, however, the pace has slackened.

Russia holds the world's largest natural gas reserves, with 1,680 trillion cubic feet already proven. Much remains unexplored, particularly in extreme northern and eastern regions, so actual reserves could be much greater. In 2004, Russia was the world's largest natural gas producer, as well as the world's largest exporter.

GazProm, a state-owned entity, essentially holds a monopoly position on gas production and distribution in Russia, producing 90 percent of Russia's gas. It is, however, inefficient as an operator. GazProm's largest fields are in decline and production has been stagnant for more than a decade. In recent years, GazProm has had to rely on Turkmenistan, which is dependent on GazProm's pipelines for transit, to meet export obligations in the former Soviet Union and Europe. Kazakhstan and Uzbekistan also export gas to Russia, partially to supply regions of Siberia.

. . . AND ITS WEAK EXPORT INFRASTRUCTURE

Russia's export infrastructure is badly in need of an upgrade. Transneft's aging pipelines can carry over two-thirds of Russia's crude exports to Western markets. Remaining exports must be shipped by rail or barge, which tend to be expensive and inefficient. Major oil export points now are Primorsk, on the Baltic Sea near St. Petersburg; the Druzhba system, which runs through Belarus and Ukraine, and on to Poland and Southeastern Europe; and Novorossiysk and Tuapse on the Black Sea. Russia also exports crude oil through Ukrainian ports at or near Odesa, on the Black Sea. Oil arrives through the Pridniprosky pipeline and Odesa-Brody, which was reversed in 2004.

In recent years, Transneft has considered two large projects to increase export capacity. Lukoil has proposed a Barents Sea oil terminal at Murmansk, a year-around ice-free port, to deliver crude from the Western Siberia and Timan-Pechora basins. Transneft has suggested an alternative site in the High North near Indiga; this port, however, freezes in winter. The U.S. Government supports projects that could expand export capacity to the global market. In our view, a northern export route could provide up to two million barrels of oil per day for potential export to the United States.

Meanwhile, Russia is embarking on efforts to expand exports to Japan and China, which now receive minimal volumes of Russian crude by rail. For 2 years, Transneft studied proposals to construct a massive eastern pipeline, roughly from Lake Baikal, in Central Siberia, to the Pacific port of Nakhodka, near Vladivostok. Russia has also considered building a pipeline to Daqing, China. The latest plans are divided into two stages. Beginning December, Transneft will construct a Siberian pipeline from Taishet, in Irkutsk Oblast, to Skovorodino, near the Russian-Chinese border, with an extension to be built to China. Simultaneously, Russia will construct an oil terminal at Nakhodka. In the second stage, Transneft will extend the pipeline from Skovorodino to the Pacific Coast. The pipeline's capacity will be 1.6 million barrels per day, 600,000 b/d of which would be delivered to China. The balance would be shipped to Nakhodka, initially by rail, for export to Japan or Korea. The economics of the plan, as well as the environmental implications, are uncertain.

GazProm's pipeline network largely runs from east to west, passing through Ukraine and Belarus on the way to European markets; Ukraine currently transports 80–85 percent of Russia's natural gas exports to Europe. Russia and Ukraine tentatively agreed some years ago to create an International Gas Transit Consortium to upgrade the existing pipeline network and expand gas exports to Europe. Bickering over prices, volumes, partners, illegal taps and operator rights has delayed the project. GazProm, meanwhile, is considering alternatives. Blue Stream, a pipeline running under the Black Sea to Turkey, was completed in 2002. This year, Russia partnered with Germany to announce a $10 billion project to construct a pipeline under the Baltic Sea—a route that would circumvent Ukraine, Poland and the Baltic States. GazProm is also negotiating with Poland to construct Yamal-II, which would link Belarus to Slovakia and points west without traveling through Ukraine.

SAKHALIN AND THE FAR EAST

Sakhalin Island, lying north of Japan, holds reserves of 14 billion barrels of oil and 96 trillion cubic feet of natural gas. The Russian Government partitioned the onshore and offshore territories of Sakhalin for exploration and development purposes; Sakhalin-I is progressing; Sakhalin-II is already producing oil; Sakhalin III, initially with U.S. participation, will be retendered. A consortium led by ExxonMobil will celebrate "first oil" at Sakhalin-I, a $12 billion project, on October 1. The partners hope to produce 250,000 barrels of oil per day and one billion cubic feet of natural gas in the initial stage. Royal Dutch Shell, with Russian and Japanese partners, is engaged in developing Sakhalin-II, which will include Russia's first liquefied natural gas (LNG) facility. Shell recently announced that costs of the second phase have doubled—from $10 billion to $20 billion. LNG exports, beginning 2008, will reach the United States via Mexico, where Shell is constructing two re-gasification

plants. The project also plans to supply oil and natural gas to Japan and, perhaps, other Asian markets.

SHTOKMAN: OFFSHORE LNG IN THE BARENTS SEA

We are very much encouraging LNG—liquefied natural gas—cooperation with Russia, particularly at the massive Shtokman field in the Arctic. Russia is prepared to work with international partners on the project, which contains reserves of 112 trillion cubic feet of natural gas. On September 16, Russia released a "short list" of project partners, which included Chevron and ConocoPhillips; the Norwegian firms Statoil and Norsk Hydro and France's Total were also named. The Russian Duma has already approved a production sharing agreement in support of the project, though it is unclear when a final decision on project participants will be made. First phase plans call for 770 billion cubic feet of gas extraction per year, which will be converted into 14 million tons of LNG to be exported to the United States. After 2011, production could be ramped up to 2.5–3.1 trillion cubic feet of gas per year.

HIGH HOPES FOR THE HIGH NORTH AND EASTERN SIBERIA

With production declining in Russia's Soviet era oil and gas fields in Western Siberia—currently the source of 60–70 percent of Russia's oil production—energy analysts are increasingly looking north and east, to the Yamal Peninsula and the largely unexplored region of Eastern Siberia. In the East, Krasnayarsk, Irkutsk and Yakutia oblasts may be rich in oil and gas resources; some observers refer to the area as the "next Caspian." A harsh climate and utter lack of infrastructure, as well as remote locations and complex geology, present formidable challenges to prospects for development. Alexander's Oil and Gas Connection reckons that only 8 percent of Eastern Siberia has been explored geologically. According to the Petroleum Economist, the Russian Ministry of Natural Resources is offering 38 blocks in Eastern Siberia and the Far East for exploration this year. Higher global energy prices will bolster interest in these remote regions, though very high estimates for costs of exploration, development and transport—with few options—may dampen any excitement.

Earlier, TNK-BP tentatively announced plans to construct a 2,000–2,500-mile gas pipeline from Kovykta, Irkutsk Oblast, across China and the Yellow Sea to South Korea, but the Russian Government has not approved either the pipeline or gas exports. Total reserves of up to 70 trillion cubic feet of gas may be at stake. Rosneft, meanwhile, is exploring northern Krasnayarsk Oblast, where oil production could exceed 300,000 barrels per day by 2012. GazProm, focused on Yamal Peninsula and its 52 trillion cubic feet of gas reserves, may explore opportunities for LNG facilities in the High North, with the possibility of exporting to Mexico or the U.S. West Coast. TNK-BP is also weighing a 5-year, $4 billion investment in Irkutsk's Verkhnechonskoye oil field, which could start producing in 3 years.

As more attention is focused on Eastern Siberia, we will encourage the Russians to work with international partners, be transparent with emerging data, attract foreign investment, adopt new technologies and safeguard the environment as it explores and develops its resources. Initial signs are that Russia may be limiting the level of foreign participation in certain auctions for blocks in Eastern Siberia. We will press the Russian Government to reverse this approach, noting that $35 billion or more in investment will be needed to develop these remote fields.

THE PROMISE OF PRODUCTION, THE LURE OF CHINA

Some observers have raised concerns over the possibility that Russia may export incremental oil and gas produced in Eastern Siberia to China, Korea and Japan, rather than Europe or the United States. Such developments, however, should not pose a threat to U.S. energy security. In a global context, additional Russian exports to China and other points in Asia would free up supplies elsewhere, from other producers, to meet market demand in the U.S. and other growth markets.

KAZAKHSTAN AND THE NORTH CASPIAN

Kazakhstan and the entire North Caspian region also have tremendous resources. At Tengiz, Kashagan and other fields, over 25 billion barrels of reserves are proven; there is potential for up to 110 billion barrels. Natural gas reserves range from 65–70 trillion cubic feet. We strongly support the work of U.S. energy companies and their international partners, who are now focused on ramping up production, improving transportation to markets, and heightening energy security in the North Caspian region. U.S. energy companies were among the first non-CIS foreign inves-

tors in Kazakhstan; we expect American companies to be active in the region for many years to come.

Kazakhstan, a huge country, remotely located, for many years held valuable resources but lacked export routes to global markets. After the breakup of the Soviet Union, Kazakhstan had to rely on Russia's Transneft to carry its crude oil exports. That situation changed in 2001, when the Caspian Pipeline Consortium, or CPC, completed construction of a nearly 1,000-mile pipeline from the North Caspian to Novorossiysk, Russia, on the Black Sea. CPC, a joint venture between the governments of Russia, Kazakhstan and Oman, with private partners that include U.S. energy companies, now transports over 500,000 barrels per day, mostly from the Tengiz field. The partners have drawn up plans to expand CPC capacity to 1.34 million barrels per day by 2009. Those plans have been delayed, however, as Russia expresses concerns over tariffs, corporate governance and management control. We have strongly encouraged the Russian Government to work constructively with CPC partners to resolve these issues and move forward with expansion, particularly as production in Kazakhstan is set to increase.

Overall, Kazakhstan produced about 1.2 million barrels of oil per day in 2004, and exported, through CPC and other routes, about one million b/d. The Kazakh Government hopes to increase production to about 3.5 million b/d by 2015, especially as the huge Kashagan field comes into production. Moreover, Kazakhstan has expanded production of natural gas in recent years, and expects to reach 570 billion cubic feet this year. A lack of export infrastructure—plus a focus on oil—has limited gas production in Kazakhstan; previously, gas had been flared or re-injected into oil wells to maintain production pressure. The Government of Kazakhstan is now studying options for increasing gas production and distributing it to global markets. As Kazakhstan aims to expand oil and gas production, it will require additional investment. We will encourage Kazakhstan to be transparent and give all capable companies fair access in any new tender process, whether for new acreage or for subcontracts on existing projects.

Recognizing strong demand for crude in the East, Kazakhstan and China have begun constructing a 600-mile crude oil pipeline from Atasu to Alashankou, Xinjiang, China. The three-part pipeline, scheduled for completion in 2011, will extend from Atyrau in the north Caspian region to western China and will ultimately have the capacity to carry 400,000 b/d. The initial stages of the project are scheduled for completion in December 2005. The proposed sale of PetroKazakhstan, a Canadian venture, to the China National Petroleum Corporation, is also indicative of Kazakhstan's focus on new markets. Clearly, demand for oil in East Asia, as well as in South Asia, is expanding rapidly. Kazakhstan, given its location, is well suited to meet a portion of that demand.

At the same time, we expect Kazakhstan to continue exporting to the West, particularly from the Tengiz and Kashagan fields.

Given the scope of the energy supply and demand challenges we face today and in years ahead, Kazakhstan has the potential to be a critical element in addressing the world's energy needs. As with Russia, we need to work with Kazakhstan to promote transparency and private investment, and to encourage leaders to expand cooperation with U.S. energy companies. Moreover, we must work with Kazakhstan and other countries of Central Asia and the Caucasus to encourage them to build out and expand infrastructure, and, in particular, to increase transport options.

AZERBAIJAN AND THE SOUTH CASPIAN

The promise of expanding incremental, non-OPEC energy production in the Caspian region—and transporting it to the global market—has already begun to play out in Azerbaijan, where offshore resources have been the focus of international energy companies for many decades. In the past, remote locations, political tensions, regional conflicts and undetermined maritime boundaries marred production and transport efforts. Those issues, as well as environmental sensitivities and proximity to Iran, continue to resonate today. However, multinational efforts to overcome these hurdles are showing results in the South Caspian.

Azerbaijan produced nearly 320,000 barrels of oil per day in 2004, about half of which came from the offshore Azeri-Chirag-Gunashli (ACG) fields. Total oil production could increase to one million barrels per day by 2010. Analysts estimate offshore proven reserves at 7–13 billion barrels of oil; Azerbaijan's state-owned oil company claims over 17 billion barrels. In recent years, ExxonMobil and Russia's Lukoil have failed to find additional commercially viable reserves at offshore sites, raising questions about Azerbaijan's ability to increase production substantially in coming years. Analysts report that Azerbaijan has proven natural gas reserves of 30 trillion cubic feet—and the potential for much more. Currently, Azerbaijan is a net gas im-

porter—mostly from Russia. That is set to change, however, particularly as the giant Shah Deniz field, with at least 14 trillion cubic feet of reserves, comes on line, beginning 2006.

The crowning achievement of regional political leaders and international energy companies in the South Caspian is the Baku-Tbilisi-Ceyhan (BTC) pipeline. Traditionally, export routes for Azeri oil were limited to cross-Caucasus or Russian pipeline and rail links, which led to Black Sea ports. These routes, however, proved risky, as they passed through unstable areas like Chechnya. Moreover, in modern times, the Bosporus Straits, which lead from the Black Sea to the Mediterranean, became increasingly congested and subject to shipping delays.

A consortium of international oil trading and construction companies and state-owned oil companies in Azerbaijan and Turkey, encouraged by strong U.S. Government support, created the Azerbaijan International Operating Company in the early-1990s to stimulate offshore production at ACG fields. A production sharing agreement was signed in 1994 and became effective in 1997. Overcoming strong political, engineering and environmental barriers, a similar group broke ground in 2002 on a 1,000-mile pipeline, connecting Azerbaijan's offshore oil fields to the Mediterranean port of Ceyhan, Turkey, via Georgia. The pipeline is slated to be completed in December 2005; oil has already begun to flow from Baku. Initial capacity is 200,000–300,000 barrels per day, increasing to 500,000 barrels per day in 2006 and eventually to one million barrels per day. Parallel to the BTC pipeline, partners are constructing a South Caucasus Pipeline to carry Azeri gas from Shah Deniz to Turkey. Initial volumes should reach 245 billion cubic feet per year. The BTC, a success by any measure, serves as an example of political cooperation, engineering accomplishment and environmental protection worldwide.

EXPANDING BTC

We strongly encourage the Government of Kazakhstan to act constructively and responsibly in bilateral efforts with Azerbaijan to link the Port of Aktau or Kuryk by tanker with the Baku-Tbilisi-Ceyhan pipeline. We believe that this latter effort, which would provide an export platform for future production at Kazakhstan's Kashagan field, must be held to very high standards—the same high standards that were upheld some years ago at the signing of the BTC inter-governmental agreement.

The BTC partners, including U.S. energy companies, insist that a Kazakhstan-BTC (KBTC) IGA must have appropriate commercial, legal, and environment protections. The partners want the IGA explicitly to limit the investors' present and future tax liabilities to those taxes that are agreed upon in the subsequent Host Government Agreements (HGA). Moreover, they want the IGA to be ratified by parliament and signed by the President, in order to give it a superior legal status (as an international treaty) to any future parliamentary amendments to the tax code.

The opening of the BTC pipeline, which transports Caspian crude from Azerbaijan to the Mediterranean port at Ceyhan, dramatically increased the value of Azerbaijan's oil reserves, namely, by bringing them closer to world markets. A successful agreement to link North Caspian production into the BTC by tanker to Baku would do the same for Kazakhstan's reserves. Moreover, it would greatly improve Kazakhstan's position in terms of investment potential and attractiveness—and return on investment.

BLACK SEA DEEPWATER EXPLORATION

BP is leading international efforts to explore the Black Sea. With Turkish partners, BP has launched efforts to drill an exploratory well, nearly 10,000 feet deep in waters that are about 4,000 feet deep, off the coast of Turkey. Efforts could expand to Georgia's coastal waters, where an American company has exploratory rights. U.S. energy companies are also interested in exploring deepwater areas off the coast of Ukraine, surrounding the Crimean Peninsula. Currently, local companies are producing oil and gas from shallow water regions of the Black Sea, mostly in Russia, Ukraine and Romania.

ADDITIONAL EFFORTS TO BYPASS THE BOSPORUS

Expanding Russian production in recent years has led to increasing bottlenecks at the Bosporus Straits, controlled by Turkey. In the winter of 2003–2004, a tanker backlog of 30 days or longer developed, cutting into profits of oil producers and transporters. Expanded production in Russia, the Caspian and the Black Sea could further aggravate the situation. Russian and Turkish entities, as well as international energy companies, have begun exploring options for Bosporus bypasses, mainly in the form of pipelines. Various parties have put six or more options on the

table at various times. Proposals include a pipeline from Burgas, Bulgaria, to Alexandropolous, Greece, supported by Russia's TNK-BP; a pipeline from Samsun to Ceyhan, Turkey, supported by the Government of Turkey; and at least two options for building pipelines across the Balkans. The Odesa-Brody pipeline, built by the Government of Ukraine, has not fulfilled its original purpose as a Bosporus bypass. The pipeline was reversed in 2004 to carry Russian Urals crude to the Black Sea for export through the Bosporus; that decision may be revoked in 2006.

The U.S. Government, aware of shipping delays and the environmentally sensitive nature of the Bosporus, generally supports efforts to build out infrastructure and improve transport efficiency in the region. However, weighing the commercial viability of the various proposals, in our opinion, is the responsibility of the private sector, which will ultimately finance and construct any pipelines that may move forward. Meanwhile, the U.S. Government will work with the Government of Turkey to improve operational efficiency in managing traffic flow in the Bosporus and to protect the environment from a catastrophic spill.

CONCLUSION

Russia and the Caspian continue to represent promising opportunities for upstream oil and gas investments needed to meet growing global demand over the next two decades. We recognize Russian's leadership in global energy markets, and underscore the contributions that Russia has made to supply expanding world oil demand, especially over the past 5 years. We will continue to work with U.S. energy companies and the Russian and Kazakh governments, in particular, to encourage further production increases and an expansion of transport infrastructure, particularly by expanding the Caspian Pipeline Consortium and the Baku-Tbilisi-Ceyhan pipeline. We will emphasize to them the need to advance corporate governance and transparency, including applications of revenues from oil and gas activity, adhere to rule of law, strengthen regional stability, broaden stakeholder participation, safeguard the environment and improve the investment climate. We will work with others in the region, from Turkmenistan to Turkey, Georgia to Ukraine, to cooperate internationally in exploring new fields and maximize efficiency of transit routes. All the while, we will promote partnerships between U.S. and local entities, with the objective of expanding production to meet rising global demand.

Senator HAGEL. Mr. Simons, thank you. And your full statement will be included in the record, as well.

Let me ask each of you—and, again, I appreciate your comprehensive statements—you mentioned—each mentioned, in reference—in your testimony—our ambassadors in these countries and in this region, their focus, priorities. How do we coordinate our policies in the region with our ambassadors? And I guess that might begin with a statement from each of you about the coordination of your two departments on these kinds of issues, and then maybe work it down to the ambassadorial level in the region. Are there regional conferences? Are there departmental conferences?

Secretary Harbert, we'll begin with you. Thank you.

Dr. HARBERT. It may be shocking to find out that we work quite well together, but we do. As Deputy Assistant Secretary Simons noted, this is an area where we have constant contact with each other at headquarters over here in Washington. The ambassadors and many officers go through the Foreign Service Institute and a variety of seminars before they go out to post. And we participate in the actual preparing of ambassadors and economic counselors and commercial counselors before they go out to post, and apprise them of how important energy is in the formulation of our foreign policy and how important it is in our commercial policy abroad. So, we begin here in Washington.

You may be surprised to find out that in Russia, that is the largest Department of Energy office that we have around the world. We have 17 people there. They're housed within the embassy, and they report to the ambassador. So, we coordinate quite well at the

ground level, as well as back here. And we hold, obviously, a great deal of meetings between ourselves, with the National Security Council, on coordinating our policy, which—this Administration believes, in that region, energy plays a very, very important part of it. And, for that, we are each charged with making sure that we are doing is complementary.

Senator HAGEL. Thank you.

Mr. Simons?

Mr. SIMONS. Thank you. I would agree that we're very closely knitted up. I think there are several layers of coordination. First—and I would, again, make reference to the Energy Department-led effort—we're very linked into these energy dialogues with individual key countries—specifically, Russia and Kazakhstan. And those really do, to some extent, provide an overarching policy framework for how we handle energy issues.

We're also very tightly linked up with the private sector, both here in Washington, as well as abroad and through our embassies. And sometimes the private-sector connections are what provide the glue, also, to keep the policy oriented, in particular, on those concerns that are most immediate—of most immediate interest to our companies.

And, finally, in particular, in Russia, we have the presidential interest, we have the involvement of the National Security Council that provides another overarching chapeau to our efforts.

Senator HAGEL. Thank you. You mentioned Kazakhstan and Russia in your statements, as well as your answer to the first question. If you could enlarge upon the region—specifically, Turkmenistan, where we have some reason to believe there are rather considerable natural gas deposits—take it a little further, to Uzbekistan and some of the countries in this area—what kind of progress are we making? Where are our greatest challenges? And any reflection on this particular area—specifically, Turkmenistan, Uzbekistan? And then we'll get into some other questions.

Dr. Harbert?

Dr. HARBERT. Thank you. As I mentioned earlier, capital is a coward. And, in particular on Turkmenistan, I think there is tremendous opportunity there for foreign investment. There's tremendous opportunity, in terms of realizing them as a valuable energy exporter. We would hope to see that there is a government there that we could work with in a much more open and transparent and—way. And we certainly have great expectations for their ability to play in the regional market there. They are an important—they have an important relationship with Russia and what they do with their resources.

I would like to say, for the region as a whole, I think one of the things that we need to keep in mind as we look at each country by country is that these are very interrelated issues. And whether they be linked by common economic interests or integrated energy infrastructure, there is an integrated energy infrastructure, both pipeline and otherwise, that has existed for a number of years, and that is a baseline from which they begin to look at new investments and how they can move their product around. And that is something that is a backdrop of how they take their things to mar-

ket and what new investments are needed that they keep in their minds.

On other countries in the region that we are hoping to see progress in, we'll be anxiously, obviously, looking at what happens in the Ukraine with the new government. We're looking—with Kazakhstan, there is a great deal of potential, particularly if they are able to realize the intergovernmental agreement for the BTC pipeline. That affords them new opportunities to diversify the way that they can get their product to market.

It's in their interest—it's in these countries' interests to find ways to get their product to market, to diversify the way that they get their products to market. And that's something, from a policy perspective, we continue to look for ways to support.

Senator HAGEL. Thank you.

Mr. Simons?

Mr. SIMONS. Thank you. I would pretty much agree with that assessment. Certainly, Turkmenistan has very interesting gas reserve potential. We've known about it for a long time. There have been discussions underway for many years, for instance, to route some of that gas through Afghanistan to South Asia. In theory, it sounds very promising. But, again, you have political-risk issues and investment-climate issues that, up to now, have not been able to bring the private sector along. So, we continue to be in close contact with the government there. We're analyzing the situation. We're in contact with the private sector. But, up to now, the situations haven't been really ripe to get to the investment stage.

Similar situation in Uzbekistan. It has substantial gas reserves, but most of them serve the local market, and we haven't had an investment-climate situation that's been propitious to launch anything more comprehensive. But we continue to keep a close eye on those countries, and we'd like to see those reserves more—integrated more broadly into the global energy picture.

Senator HAGEL. Thank you.

Mr. Simons, how is the U.S. working, and under what process, to encourage a resolution of the boundary disputes in the Caspian—specifically between Azerbaijan, Iran, Turkmenistan? Are we engaged in any formal dialogue or processes to help resolve this boundary dispute in the Caspian?

Mr. SIMONS. I'll have to get back to you on that. I don't have anything firm. My understanding is that an arrangement has been worked out, a practical arrangement, between the three countries that have, currently, substantial offshore resources that are being developed—i.e., Azerbaijan, Russia, and Kazakhstan. It is sturdy enough that it's been able to bring the private sector in, and bring along the quality and quantity investment that we've seen. I don't believe that there is any diplomacy underway to resolve the final issues with the Iranians and the Turkmen, but I'll have to get back to you on a more firm answer on that.

[Mr. Simons' response to the question follows:]

RESPONSE BY PAUL E. SIMONS TO A QUESTION FROM SENATOR HAGEL

Question 1. What, if anything, is the U.S. Department of State doing to resolve the dispute over Caspian Sea delimitation between the littoral states?

Response. The United States is not party to any boundary discussions between any of the Caspian States and thus we hold to our long-standing policy not to make judgments on the merits of the boundary positions of any of these coastal States. We encourage the boundaries to be resolved amicably among and between the affected Caspian parties on the basis of international legal principles in order to achieve an equitable solution.

The United States is encouraged that Russia, Kazakhstan and Azerbaijan have reached agreements on the division of the seabed in the northern part of the Caspian. Iran and Turkmenistan have not yet signed on to the approach of using the equidistant method used by the north Caspian States.

In order to help resolve the impasse in the Central Caspian, the United States has sent experts to Azerbaijan and Turkmenistan and has briefed the Presidents of those countries on the technical and legal aspects of delimitation. We stand ready to renew our assistance at any time at the request of either country.

Senator HAGEL. Thank you.

Secretary Harbert, would you care to add anything to that?

Dr. HARBERT. It may be merely just a statement of fact, but, in terms—the northern percent of the Caspian Sea—Russia, Azerbaijan, and Kazakhstan—when they divided it, in May 2003, I'll just note that Kazakhstan received 27 percent; Russia, 19; and Azerbaijan, 18 of the Caspian Sea. I'm not talking about boundary disputes, but that was what was agreed to back in May of 2003.

Senator HAGEL. Thank you. You mentioned the northern pipeline in Russia. Are there U.S. companies playing roles in that, at this point?

Dr. HARBERT. We have been very supportive of the Russians being supportive of the northern pipeline. At one point, they were looking at a route that would have been including Murmansk, which is a pipeline up in the same area. And we understand that they have chosen to pursue other parts of their infrastructure, at the moment, that do not include being very serious, at the moment, about the northern pipeline. And we feel that that's not in their interest. And we do believe that there is commercial interest in that area, and we will continue—as part of our Energy Working Group, we have gotten very specific with the Russians about the opportunities we think this will afford them to export product. And if it's a commercially viable product, the investment will be there. And I know there are companies that have discussed this in quite tangible terms with the government.

Senator HAGEL. Mr. Simons, would you care to add anything?

Mr. SIMONS. I agree with Karen. I think clearly there could be commercial interests, but the overarching question is, To what degree is Russia going to open up any parts of its pipeline system to involvement by non-Russian players. And I think that's the hub of the issue.

Senator HAGEL. Which would lead me to another question regarding the Russian centralization of the energy sector. What do you believe is the objective? Is there a specific policy behind that, aside from having complete Russian ownership, downstream/upstream pipeline ownership? Is your analysis in any way swayed by presidential elections coming up in a few years? However you would, each of you, care to respond to that question, I would appreciate it.

Dr. HARBERT. Certainly. I think there are a number of things that are very clear and a number of things that are very opaque. Certainly, the decision-making about what is happening in the en-

ergy sector is certainly becoming more centralized within the presidential administration. There is—another thing that is very clear is that Gazprom, which now a state-owned entity, as well as the other state-owned entities in the transport sector, are on an asset buying spree at the moment, and the resources that they have are not being used to develop more resources; they're being used to purchase additional assets and resources around the region.

What is not clear to us, and certainly to potential and current investors, is where the energy policy is going. As many investors have said, it would be nice just to know, and then we could make some decisions.

The clarity and the sanctity of contracts is of preeminent importance to investors, and that is something that they want to be clear. What is the subsoil law going to be? What is the fiscal regime going to be? What type of royalties am I facing? What are—what are the definitions, according to the Russians, of "strategic reserves"? Where am I going to be able to invest? If they would actually be able to just put a policy out there that were able to be relied upon, then, I think, foreign investors, including U.S. companies, would have a lot more surety of where they're going to be putting their capital in Russia. Nobody is willing to stand by and wait by the sidelines, but we're hopeful that the—in their enlightened self-interest—that the Russians will come forward and elucidate us with what their energy policy is. It is clear, from where we stand, that there is ample opportunity for foreign investment, that there is ample time right now to make those investments so that product will come onto the market in a timely way. But the longer that the process of putting out their policy to the—to the foreign investment community, you'll find that investment may go elsewhere. And that's not in their interest, and it's not in the world, you know, energy outlook, to their benefit.

Senator HAGEL. Mr. Simons?

Mr. SIMONS. Thank you. I think it's useful to note that, in the process of Russian energy privatization over the eighties and the nineties, a lot of the upstream resources were privatized. Most of them. And this led to the very rapid expansion and recovery of Russia oil production—pretty much everything that we've seen, which did a great deal to satisfy global energy security requirements in the late nineties and early 2000s. That was provided by the Russian private sector, with a lot of involvement by Russian technology.

On the other hand, the pipelines were not privatized at that time. The pipelines remained in state hands, and the pipeline capacity did not grow commensurately. So, you have a situation now where you've had large increase, private-sector-driven, in the productive capacity, but the pipeline structure remains constrained.

So, I think this is really the argument to go back to the Russians with and basically point out that when they did open up, they were able to expand production substantially, but now they're relying on railcars and other second-best opportunities, which is actually reducing income to the Russian State, because it's a lot more expensive to export via railcar.

So, I think it's a win-win, to take a look at opening up this pipeline segment to private investment, both local, as well as foreign.

Dr. HARBERT. If I might add just a factoid to bring this into a fine point. In the beginning of this decade, Russian oil production was rising at a rate of about 14 percent per year. Now we have it at about 1 to 2 percent per year.

Senator HAGEL. Thank you.

In some of these countries we're talking about, corruption has been an inhibiting factor, and you have generally both referenced it—in foreign investment, in moving forward in the development, production capabilities. If left generally unaddressed, how much of a factor is that going to be in the future for development of these resources?

Dr. HARBERT. Senator, I think that might be hard to quantify, but it would certainly be a factor for companies to look to other places to put their resources. Corruption, if you look at the—over time, it has been a way for states to enrich themselves and not to their medium or long-term benefit. The short-term benefit certainly does not, then, lead to long-term gain on the economic grounds.

One would argue that the energy sector, which is going to be a predominant force in this region's economy from here to forward, that they should get it right from the beginning, and they attract quality investment, and not quantity investment, that they will then—and their citizens of the region—will benefit more broadly. To have the benefit of the few and not the benefit of the many, we've seen, in many states around the world, that then there is a popular rejection of using those resources, because they want to see more of the revenue from those resources accrue, and the benefits to accrue, to their people. So, corruption is really a tax on the people of that region.

Senator HAGEL. Thank you.

Mr. Simons?

Mr. SIMONS. I would agree with that. And I would just note that many of the oil-producing countries themselves, not at our initiative, but at their own initiative, are trying to get a grip on the situation. Within the last couple of months, Kazakhstan has joined the EITI initiative, the British Transparency Initiative. And Azerbaijan is taking a very close look at options, with our assistance, in terms of how they can handle oil windfalls in a way that benefits their citizens. So, a number of the countries, particularly in the Caspian area, are beginning to focus on this themselves.

Senator HAGEL. Thank you.

How do we engage our Asian partners—or do we—on energy issues matters? For example, we have spoken of China. Take the North Asia region—China, Japan, South Korea—do we have any coordinated effort with our friends and our allies in that area regarding energy policy?

Secretary Harbert?

Dr. HARBERT. First, on China, we have established, as we have with Russian and Kazakhstan, Azerbaijan, a formal energy dialogue that we engage in. The State Department participates, the Commerce Department participates, and a variety of other agencies around town participate. And we had a meeting of that group several months ago, here in town. From that, we've identified specific areas that we should be pursuing, in terms of enhancing our mutual interests. Foremost among those is energy efficiency. As China

becomes an increasingly bigger consumer of energy, it is in their interest to become a more efficient user. It's in our interest that they become a more efficient user. And we're helping them to become a more efficient user, looking at their regulatory environment and other ways that they may become a more efficient user.

And Japan. We have had a very long and rich history on cooperation with Japan, from a science and technology perspective. They have been a partner of ours for over 25 years, and exchanging personnel in our laboratories, in our laboratory complex around the country, to help their scientists improve their understanding of the very hard technological issues that we both face. They are active partners with us in expanding our understanding of hydrogen and using hydrogen as a long-term solution to our energy supply. They are participating in the EDR project and looking at ways that we can actually design the next best class of nuclear technology, which we believe is in our interest to use as a solution to our energy mix, as well. They are participants. How do we sequester carbon? And how do we address climate change? And I know that that's a big area of interest of yours. And we have been strong partners, outside of the rubric of Kyoto, on exploring ways to improve the capture and sequestration of carbon. So, we have a very strong, robust relationship with Japan, and in an interesting new path forward with China.

Senator HAGEL. Thank you.

Mr. Simons?

Mr. SIMONS. Thank you. In addition to the DOE-led China dialogue, which I think is very promising, Deputy Secretary Zoellick also leads an economic dialogue with China that focuses on investment policy and energy policy, in particular. He went out, in early August, and had his first discussions with the Chinese, and I think this is likely to be a very promising opportunity to discuss investment and energy policies with the Chinese.

We also have a very vibrant working group within APEC, the Asia-Pacific Economic Cooperation group, on energy. And this brings together, of course, all the major Asia-Pacific partners. We talk about data transparency issues, establishment of strategic reserves, some of the same energy-efficiency and conservation issues, and, of course, it brings developed and developing countries together.

And then, finally, with the OECD countries, with the industrialized countries, we have a very active dialogue in the International Energy Agency covering a lot of the same broad energy-security issues.

Senator HAGEL. The OECD countries would obviously include whatever relationship we would have with EU and EU-member countries. Is that correct? Same kind of basis.

Mr. SIMONS. Yes.

Senator HAGEL. Secretary Harbert, you noted in your testimony that you—Department of Energy strongly supported a Trade and Development Agency feasibility study that would analyze the U.S. market's receptivity to Russian crude. Could you develop that in a little more detail?

Dr. HARBERT. Certainly. This is an opportunity that's actually focused around liquefied natural gas. And the Russian market obvi-

ously is an untapped gem for liquefied natural gas, from a U.S. market perspective. What their hesitation has been is that, Is there the receiving capability here in the United States? We certainly have the demonstrated appetite, but do we actually have the market capability to absorb what they might potentially be able to export? Before they invest in the infrastructure, they want to be assured of a market.

And so, the Trade and Development Agency here has put forward the option of doing a market feasibility of our own market to demonstrate to the Russians that, actually, yes, we can receive this. The Russians are reviewing the specifications and the scope of work that the TDA has put forward to them, and we expect that they would move forward in short order.

I will note that, in furtherance of that, Mr. Khristenko, who is Secretary Brodman's counterpart in Russia, will be coming to the United States this coming month, in October, to actually look at this very issue. We'll be holding discussions, and we plan on taking—we were going to be taking him down to Louisiana to look at the loop facility. And, unfortunately, that doesn't seem to be what would be most fruitful at the time, given the hurricanes. We will be taking him to some other liquified natural gas facilities that already exist and giving him extensive briefings on what are our capabilities here and what are our capabilities here.

We gave a similar seminar to a variety of decision-makers in Russia about the LNG market, what the new energy bill does, what projects are on the pipeline, what the permitting process is like, so that they can be assured, if they're going to be furthering their infrastructure investments in this area, that there actually is going to be a market to receive those—that LNG.

Senator HAGEL. As well as terminals, especially on the West Coast. I would assume that they'd want to have some assurance of that, as well.

Dr. HARBERT. When Minister Khristenko comes, we're going to be taking him to facilities here on the East Coast, just simply because that's where he's going to be. Certainly, there are opportunities for liquified natural gas terminals to be realized on the West Coast. The Administration's been strongly supporting the expansion of LNG terminal capacity, working with State and local officials to make that happen, and working on streamlining the permitting process so that these projects can come online in a reasonable amount of time. And, again, I think the energy bill that the Congress passed this year helps us get there a lot faster.

Mr. SIMONS. No, thank you.

Senator HAGEL. Well, you both have been generous with your time and your comments. I would leave the record open for a day, in the event some of my colleagues who were not here would want to present some questions to be responded to. And I know, Mr. Simons, you'll be back to me on one of the issues that we talked about.

[The information previously referred to follows:]

MEMORANDUM

(This memorandum is largely drawn upon information provided by Mr. Bernard A. Gelb, specialist in Industry Economics, Resources, Science and Industry Division, Congressional Research Service (CRS).)

BACKGROUND

Russian Oil and Gas Reserves and Export Challenges

The Russian Federation is a major player in world energy markets. With one fourth of the world total, it has more proven natural gas reserves than any other country (Table 1), and has about the eighth largest proven oil reserves.[1] Russia also is the world's largest exporter of natural gas, the second largest oil exporter, and the third largest energy consumer.

Energy exports have been a major driver of Russia's economic growth over the last 5 years, as Russian oil production has risen strongly and world oil prices have been relatively high. This type of growth has made the Russian economy very dependent on oil and natural gas exports, and especially vulnerable to fluctuations in world oil prices. The U.S. Energy Information Administration estimates that, on average, a $1 per barrel change in oil prices results in a $1.4 billion change in Russian revenues in the same direction.

Most of Russia's proven oil reserves are located in Western Siberia, between the Ural Mountains and the Central Siberian Plateau. The Western Siberia region made the Soviet Union a major world oil producer in the 1980s, reaching production of 12.5 million barrels per day (bbl/d) in 1988.

Oil production fell steeply after the Soviet Union dissolved in 1991, to less than six million bbl/d in 1997 and 1998. State-mandated production surges had accelerated depletion of the country's largest fields and the Soviet central planning system collapsed. Russian oil output started to recover in 1999. Many analysts attribute this to the privatization of the industry, which clarified incentives and increased less expensive production. Increases in world oil prices, application of technology that was standard practice in the West, and rejuvenation of old oil fields helped boost output. After-effects of the 1998 financial crisis and subsequent devaluation of the ruble may well have contributed. However, after reaching slightly over nine million bbl/d in 2004, Russian crude oil production has leveled off.

Roughly 25 percent of Russia's oil reserves and 6 percent of its gas reserves are on Sakhalin Island in the far eastern region of the country, just north of Japan. Several consortia are in different phases of exploring and developing oil and gas production and export facilities, including export plans to the United States via liquefied natural gas (LNG) terminals and export pipelines to the mainland. However, except in two cases, there has been little progress.

Almost three fourths of Russian crude oil production is exported, with the rest refined in the country. About two-thirds of Russia's 6.7 million bbl/d of liquids exports in 2004 went to Belarus, Ukraine, Germany, Poland, and other destinations in Central and Eastern Europe. All these destinations are points along Russia's major export pipeline, Druzhba, and its multiple branches. The remaining one-third of crude oil exports were sent to maritime ports and sold in world markets. Because of recent higher world oil prices, almost 40 percent of Russia's oil exports are exported via railroad and river barge. Most of Russia's exports of refined petroleum products are fuel oil and diesel fuel used for heating in European countries.

Russia's capacity to export oil faces difficulties. One stems from the fact that crude oil exports via pipeline are under the exclusive jurisdiction of Russia's state-owned pipeline monopoly, Transneft. Bottlenecks in the Transneft system make the company's export capacity unable to meet oil producers' export ambitions. Only about four million bbl/d can be transported in major trunk pipelines; the rest must be shipped by rail and river routes. Most of what is transported via alternative transport modes is refined petroleum, which helps to reduce the crude oil export capacity deficit. These modes are much more costly than shipment via pipeline and could become less viable if world oil prices fall. The Russian government and Transneft have taken steps toward developing a new export infrastructure.

Unless significant investment flows into improving the Russian oil pipeline system, non-pipeline transported exports probably will grow. For example, without a dedicated pipeline, rail routes presently are the only way to transport Russian crude oil to East Asia. Russia is exporting about 200,000 bbl/d via rail to the northeast

[1] Published estimates of proven oil and/or gas reserves by country can differ widely. Thus, Russia's ranking of natural gas reserve holdings differs among organizations that compile such data, depending partly on whether certain types of resources are included.

cities of Harbin and Daqing and to central China via Mongolia. The Russian government's treatment of Yukos might have affected rail exports to China since Yukos is the leading exporter of oil to China. However, Lukoil has taken over the role of rail supplier.

Transportation of oil in the Black Sea region may be in flux. A large portion of Russia's oil presently is shipped via tankers from the Black Sea to the Mediterranean and to Asia, mostly from the port of Novorossiysk. The expected late 2005 opening of the Baku-Tbilisi-Ceyhan (BTC) pipeline that will transport mostly, if not entirely, oil produced by Azerbaijan and Kazakhstan poses increased competition to Russian oil. If Azerbaijan diverts all of its oil shipments via BTC, exports from Novorossiysk will decrease. There are reports of a proposal to reverse the flow of the Baku-Novorossiysk line, allowing for 250,000 bbl/d more crude oil exports to be sent from Russia to Baku and then along the BTC route. If BTC proves less advantageous than hoped, shipments via Novorossiysk (along with Batumi, Supsa, and Odessa) may not decrease. The appendix to this memorandum contains descriptions of proposals to expand Russia's network of oil and natural gas pipelines.

With about 1,700 trillion cubic feet (tcf), Russia has the world's largest natural gas reserves (Table 1). In 2004, it was the world's largest natural gas producer and the world's largest exporter. Its natural gas industry has been less successful than its oil industry, with natural gas production and consumption largely unchanged since the breakup of the Soviet Union. Moreover, Russia's energy strategy calls for only modest natural gas production growth (about 1.3 percent per year) by 2010 even under its most optimistic scenario. Growth of Russia's natural gas sector has been impaired by ageing fields, monopolistic control over the industry, state regulation, and insufficient export pipelines. For example, three large fields in Western Siberia (Urengoy, Yamburg, and Medvezh'ye), that together account for about 70 percent of the total natural gas production, are in decline. The government projects sharp drops in natural gas output between 2004 and 2020.

Gazprom, Russia's state-run natural gas monopoly, holds nearly one-third of the world's natural gas reserves, produces nearly 90 percent of Russia's natural gas, and operates the country's natural gas pipeline network. Gazprom is Russia's largest earner of hard currency, and the company's tax payments account for around 25 percent of Federal tax revenues. Gazprom is heavily regulated, however. By law, Gazprom must supply the natural gas used to heat and power Russia's domestic market at government-regulated below-market prices. Thus, about two-thirds of the company's revenue comes from its export sales to Europe, where natural gas is sold at monopolistic prices. Because Russian gas provides about 25 percent of the natural gas consumed in Europe, Gazprom is considered by some observers to be one of Moscow's main foreign policy tools.

Issues have arisen with the growth of Gazprom's sales to European gas consumers. European trade representatives have criticized Gazprom's dominant market position and two-tiered pricing system, and linked the pricing issue to Russia's accession to the World Trade Organization (WTO). Russia agreed to grant independent natural gas producers access to Gazprom's pipelines. Also, in response to calls for fair pricing, the Russian government doubled prices to Russian industrial consumers. But the new price level is far less than half of the prices charged at the German and Ukrainian borders.

Historically, most of Russia's natural gas exports went to Eastern Europe, and Russia continues to export significant amounts of natural gas to customers in the Commonwealth of Independent States. But, in the mid-1980s, Russia, as part of the Soviet Union, began trying to diversify its export options. By now, Gazprom has shifted much of its exports to meet the rising demand of EU countries, as well as that of Turkey, Japan, and other Asian countries. If Gazprom is to attain its long-term goal of increasing its European sales, it will have to boost its production, as well as secure more reliable export routes to the region. Several proposed new gas export pipelines would serve European markets if constructed.

Table 1.—Estimates of Eurasian Oil and Gas Reserves and Resources

[oil in billions of barrels/gas in trillions of cubic feet]

Region	Country	Proven Reserves		Possible Additional EIA [1]
		BP (End of 2004)	O & G Journal (1/1/05)	
Russia		72/1,694	60/1,680	n.a./n.a.
Caspian Sea Region	Azerbaijan	7.0 (oil)/48 (gas)	7 (oil)/30 (gas)	32/35
	Iran [2]	[3] 0.1/0	n.a./n.a.	15/11
	Kazakhstan	9.7/106	9/65	92/88
	Turkmenistan	0.5/102	0.5/71	38/159
	Uzbekistan	0.6/66	0.6/66	2/35
	Total	17.9/322	17.1/232	184/293
Reference Areas	United States	29/187	22/189	[4] 47/271
	North Sea [5]	n.a./n.a.	15/170	n.a.
	Saudi Arabia	263/238	259/2	n.a.
	WORLD	1,189/6,337	1,278/6,040	n.a.

[1] Excludes proven reserves. Data from various sources compiled by EIA in Survey cited below.
[2] Only regions near the Caspian Sea are included.
[3] Data from EIA.
[4] Undiscovered conventional oil and gas.
[5] Includes Denmark, Germany, Netherlands, Norway, and United Kingdom.

Sources: BP. BP Statistical Review of World Energy 2005. June 2005; Penwell Publishing Company. Oil & Gas Journal. December 20, 2004; Department of Energy, EIA. Caspian Sea Region: Survey of Key Oil and Gas Statistics and Forecasts, December 2004; EIA. U.S. Geological Survey. ''National Oil & Gas Assessment,'' at [http://www.energy.cr.usgs.gov/oilgas/noga/2004update.htm], viewed March 1, 2005.

EIA—Energy Information Administration.
n.a.—Not available from sources listed below.

CASPIAN OIL AND GAS RESERVES AND EXPORT CHALLENGES

The Caspian Sea region historically has been an oil and natural gas producer, but many believe that the region contains large resources of oil and gas capable of much greater production than at present. The Caspian region presently is a significant, but not major, supplier of crude oil to world markets, according to estimates by BP and the Energy Information Administration (EIA), U.S. Department of Energy. The Caspian Sea region produced roughly 2 million barrels per day (bbls/day) including natural gas liquids in 2004, or about 2.5 percent of total world output).[2] More than a dozen non-Caspian countries each produce more than 1.5 million bbls/day. Caspian region production has been higher, but suffered during the collapse of the Soviet Union and the years following. Kazakhstan accounts for about 65 percent and Azerbaijan for about 20 percent of current regional crude oil output.

Depending upon the estimator, the Caspian Sea region has proven (economically recoverable) reserves of 17–18 billion bbls of crude oil (Table 1). This is equal to about 1.5 percent of total world proven reserves, and less than U.S. reserves (22 billion or 29 billion bbls, depending upon the estimator). Estimates of much larger "possible" reserves suggest a potential for much greater production. However, as indicated by analysis later in this memorandum, there are obstacles to increases in output and exports now and in the future.

Unlike oil, the region's proven reserves of natural gas are a higher proportion of the world total than is its natural gas production. In some important instances, exploration efforts hoping to find oil have found almost entirely gas instead. Estimates of proven reserves of natural gas in the Caspian Sea region by BP and the Oil and Gas Journal range as widely as those for oil—232 tcf and 322 tcf, respectively (Table 1), or 3.8 percent to 5.0 percent of the world total. Increases in the Caspian region

[2] Energy Information Administration. "Caspian Sea Region: Survey of Key Oil and Gas Statistics and Forecasts," at [*http://www.eia.doe.gov/emeu/cabs/caspian__balances__files/sheet001.htm*], viewed September 15, 2005.

gas production face obstacles somewhat similar to those that challenge further oil development and production.

The Caspian Sea region's relative contribution to world production of natural gas is larger than that for oil. With gas output of 4¾ trillion cubic feet per year (tcf/y) in 2004, it accounted for 5 percent of world production. As with oil, gas production has been higher, but suffered during the collapse of the Soviet Union and the following years. Turkmenistan and Uzbekistan are the heavily predominant producers; each had production of about 1.9 tcf/yr in 2004, or about 40 percent of the region's gas output.

There is a likelihood of much greater additional reserves of crude oil and natural gas being found in the Caspian Sea region. This is reflected in the number of oil companies that have large stakes there. Much of the known reserves have not been developed yet, and development usually leads to the discovery that prospects are larger than originally estimated. Moreover, many areas remain unexplored. The EIA estimates that an additional 186 billion barrels of crude oil reserves are possible,[3] which would raise the total to 10 times its present level. This level of proven reserves would equal about 75 percent of the amount now held by Saudi Arabia (Table 1) and could come to roughly 15 percent of total world reserves.

The prospective increase in natural gas proven reserves appears to be much smaller in relative terms than for oil, but still very large. It is estimated that there are nearly 300 tcf in additional natural gas reserves in the region. Should this be the case, total Caspian region proven reserves in 2010 would put the region's proven gas reserve total at very roughly twice its present level and far exceed present Saudi Arabian natural gas reserves.

Any comparison of Caspian Sea region oil and natural gas reserve volumes versus those of Saudi Arabia should be tempered by acknowledgment of the considerable advantage of Saudi oil and gas in terms of much lower costs of production and much easier market access. Also, whatever the quantities and the production costs of their energy resources, Caspian countries' ability to develop and bring them to market could depend to some extent on the ability to establish and maintain relationships with international energy companies.

In view of the above, Caspian region countries potentially are large exporters of oil and gas. Caspian Sea region oil and gas have several markets now and a wider variety of potential markets. These include nations trying to meet their economies' demand for energy and those that also wish to reduce their dependence on Persian Gulf energy.

Now, nearly all Caspian crude oil goes north and/or west. Reflecting the Soviet era dictates and infrastructure, it travels largely via pipeline to and/or through Russia to European markets, with refineries as part of the network. Some also goes by tanker through the Bosporus straits to Western European markets via the Mediterranean. Natural gas transportation, even more than oil, is tied to pipelines going mainly north and/or west through Russia and its monopoly pipeline—Transneft. This, together with the fact that Russia itself produces oil and gas, provides Russia with the market power to collect transit fees on Caspian energy shipped through its transportation network, and to determine in some cases how much it is willing to transport. Also, because energy competes on a delivered-cost basis, reflecting transit fees, Caspian wellhead prices suffer. Caspian region countries thus have incentives to develop alternatives to routes through Russia—possibly consortia of routes that avoid long transits through Russia in reaching European and other markets and provide leverage in negotiating transit fees on shipments that do go through Russia.

Caspian energy sources are attractive to Turkey: they are close and offer Turkey an opportunity to offset part of its energy import bill through transit fees for shipments across its territory. Turkey's energy use is growing much faster than its output, making it a rapidly growing importer of both oil and gas; it already is a large market for Russian gas. Also, Turkey has very good relations with Caspian and Central Asian countries. However, some observers believe that Turkey has been optimistic in its expectations of natural gas consumption, and overcommitted itself to future imports of gas.

East Asian countries also are potentially attractive markets. Japan already imports a significant quantity of gas; and energy consumption in India and Pakistan is growing rapidly. Perhaps most significant, China's proven oil and gas reserves are small compared with the current and potential size of its economy and recent steep increases in its oil consumption. This has led to Kazakhstan and China to agree to build a pipeline between the countries.[4]

---

[3] Caspian Sea Region: Survey of Key Oil and Gas Statistics and Forecasts, July 2005.

[4] "Kazakhstan, China Revive Pipeline Deal," Middle East Economic Survey, 19 July 2005.

The prospects of Caspian energy exports to the regions identified above may be limited by newly expanding or developing non-Caspian energy exports to those regions. These developments include expansion of North Africa's gas export capacity, discovery of a large natural gas province in and near Egypt, development of a large gas field in Pakistan, and growing liquefied natural gas export capacity of Persian Gulf nations.

There are, however, inter-related geographical, political, economic, technological, legal, and psychological obstacles to the further exploration for and development of Caspian Sea region energy resources. Because the Caspian Sea is landlocked and the region's nations are distant from the largest energy markets, transportation must at least begin by pipeline, followed in many cases by tanker through the shallow and congested Bosporus straits.[5] Pipelines from the Caspian region completed before 1997, except those in northern Iran, were routed to Russia and designed to link the former Soviet Union internally. The several pipelines now operating have sufficient capacity to handle present production, but little more. Completion of the CPC pipeline from Kazakhstan's Tengiz oilfield to Novorossiisk (Russia) on the Black Sea in 2001 and its planned expansion is notable, but the effective capacity of the CPC line, and that of others, may be constrained by limits on tanker passage through the Bosporus. When the Baku-Tbilisi-Ceyhan pipeline becomes operational in late 2005,[6] its capacity plus that of presently operating pipelines will total 2.1 million bbls/day. New pipelines to serve East Asian markets have economic potential but could be lengthy, and entail transit through Afghanistan, Iran, and/or Pakistan. Routes to East Asian markets via Iran would include shipping through the Persian Gulf.

These issues are complicated by the fact that pipeline routes face potential disruption by regional conflicts. These include longstanding tension between India and Pakistan, continuing unsettled conditions in Afghanistan, the Armenia-Azerbaijan dispute over Nagorno-Karabakh, separatist efforts in Georgia, and military activity in Chechnya.

On the purely economic side, the longer the pipeline route, the less attractive it is to producers, other things being equal, inasmuch as energy competes on a delivered-cost basis and transit fees (based upon distance) effectively lower the wellhead price received by producers. Because transit fees are a source of revenue to governments, politics as well as economics come into play in pipeline route selection. Built-in precautions to minimize environmental impacts, particularly in and around the Sea, add to pipeline costs. In addition, much of Caspian energy resources are offshore, requiring special large drilling rigs. Very limited rig production capacity in the relatively isolated region makes the acquisition of rigs expensive and logistically difficult, hampering development of Caspian energy resources. This situation is easing a little as one new rig was added to the fleet in the past year and another is in the production pipeline.

Full realization of the energy potential of the region also is impeded by the unresolved legal status of the Caspian Sea. Despite a number of efforts, so far only Azerbaijan, Kazakhstan, and Russia among the littoral states have reached agreement on delineating ownership of the Sea's resources or their rights of development. Potential wealth from development heightens the stakes and intensifies the claims by each country.

Investment enthusiasm slackened after the surge of production-sharing agreements during the early and mid-1990s. Some recent exploration efforts have had disappointing results, particularly with respect to oil. Somewhat reduced activity, from less investment, has reduced the rate of discovery, with a further psychological effect. On the other hand, the March 2003 acquisition by China of a large stake in the North Caspian Sea Project suggests some confidence in the prospects of a least one large venture.

Despite the obstacles discussed above, energy development in the Caspian Sea region is proceeding and is likely to proceed further given the widely perceived prospect of very large energy resources in the Caspian Sea region. The pace of development, however, may be less rapid than might be the case with fewer hurdles.

---

[5] Limited depth, heavy traffic, and environmental considerations have resulted in restrictions on travel through the Bosporus straits imposed by Turkish authorities. Supporters of the Baku to Ceyhan pipeline assert that Ceyhan, a Turkish Mediterranean Sea port, can handle very large carriers, while the Supsa and Novorossisk ports are restricted to smaller tankers that can transit the Bosporus. Also, Ceyhan can remain open all year, whereas Novorossiisk is closed up to 2 months per year.

[6] Linefill of the BTC pipeline began in May 2005; it is expected that the first tanker will be loaded in the fourth quarter of 2005. "BTC Inaugurated," FSU Oil & Gas Monitor, 25 May 2005, p. 10.

Energy Policy Positions of Relevant Governments [7]

Each in its own way, other major countries in the energy arena have taken aggressive stands with respect to energy supplies. Internally, Russia has moved to take control of its own energy supplies. It may be argued that this was partially the motivation behind the Russian government's prosecution of Mikhail Khodorkovsky, CEO of Yukos. Khodorkovsky, who acquired state-owned assets during the privatization process, adopted open and "transparent" business practices while transforming Yukos into a major global energy company.[8] Yukos is being broken up and its principal assets sold off to satisfy alleged tax debts. At a state-run auction, Yukos' main oil production subsidiary was sold to Baikalfinansgrup, the sole bidder, for about half of its market value, according to western industry specialists. The previously unheard-of Baikalfinansgrup reportedly is a group of Kremlin insiders headed by a close associate of President Putin. Then, Baikalfinansgrup was purchased by Rosneft, a wholly state-owned Russian oil company. This and other Russian government actions have clouded prospects for private investment, including that by U.S. and other foreign companies.

In Central Europe, Russian firms with close links to the Russian government have used leverage to buy up energy companies to gain control over energy supply. For example, Yukos obtained majority control of a Lithuanian refinery by slowing oil supply to it, and buying it at a reduced price. In Latvia, the Transneft pipeline cutoff all oil shipments to the port of Ventspils (diverting the flow to the Russian port of Primorsk). Many see Transneft's move as a tactic to obtain a controlling share of the firm that operates the Ventspils terminal.[9]

Central Asian countries have extensive energy ties to Russia stemming from the numerous transportation routes that are Moscow oriented. Russia initially opposed western investment in Caspian Sea energy projects, insisted that oil from the region be transported through Russian territory to Black Sea ports, and argued for equal sharing of Caspian Sea oil and gas. But it has become more agreeable, and even cooperative with, western projects, and it has signed an agreement with Azerbaijan and Kazakhstan on Caspian seabed borders essentially based upon shore mileage.

In East Asia, the largely undeveloped energy resources of neighboring Siberia have become the objective of a scramble by Japan, South Korea, and China to meet their increasing energy needs (particularly with respect to China) while reducing dependence on the Middle East. China and Japan appear to be engaged in a bidding war over Russian projects and in a contest over access to Russian oil via a pipeline. China, Japan, and South Korea have been moving aggressively to shore up partnerships with existing suppliers, pursue new energy investments overseas, and pursue alternatives to petroleum. A relatively minor skirmish has erupted between Japan and China in which Japan has accused China of producing oil or gas from a field in waters close to the median line between the countries in the East China Sea. Japan asserts that China's actions risk extracting oil or gas from shared deposits. China has countered that, bey virtue of its shallow continental shelf, its economic zone extends further than the median line.[10]

China has become increasingly concerned about its growing energy needs. The government's Tenth Fiscal Five-Year Plan for 2001–2005 included a new plan to establish a strategic stockpile for its energy sector. Beijing has also sought to establish supply sources outside of the volatile Middle East, including buying a stake in a Spanish firm to become the largest offshore producer of oil in Indonesia; signing a 25-year contract to buy liquefied gas from Australia; pledging to construct a 1200 kilometer-long oil pipeline from Kazakhstan; and signing deals with over 20 countries, many of them outside the Middle East, to buy into foreign oilfields. In the past 2 years alone, Chinese companies have acquired assets in Ecuador, Australia, Kazakhstan, Azerbaijan, Algeria, and Oman, among others.

Chinese industry and officials have made particular inroads in the Caspian region. Most prominent was an accord between China and Kazakhstan, giving the PRC's state-owned oil company Chinese National Petroleum Company (CNPC) a 60 percent stake in the Kazakh state firm Aktobemunaigaz. The two companies may

---

[7] Nearly all of the discussion of other nations' energy policy in this section is taken from the following CRS documents: CRS Report RL33093, China and the CNOOC Bid for Unocal: Issues for Congress, by several authors; CRS Issue Brief IB92089, Russia, by Stuart D. Goldman; CRS Report RL32087, Russian Oil and Gas Companies and Central and Eastern Europe, by Steven Woehrel; and CRS Report RL32466, Rising Energy Competition and Energy Security in Northeast Asia: Issues for U.S. Policy, by Emma Chanlett-Avery.

[8] At the onset of the prosecution of Khodorkovski, Yukos was ranked by some as the fourth largest oil company in the world.

[9] Ariel Cohen, "Don't Punish Latvia," Washington Times, May 5, 2003.

[10] "Japan accuses China in oilfield dispute," FT.com, September 20, 2005, viewed Sept. 22, 2005.

develop a pipeline between Atyrau and the western province of Xinjiang. Acquisitions in Azerbaijan and preferential rights to develop natural gas in Turkmenistan also have boosted Beijing's presence in the region. China also has worked to strengthen the Shanghai Cooperation Organization, a regional security organization that includes China, Russia, Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan.

Other major Chinese initiatives include expanding the natural gas infrastructure and developing gas-fired power plants that will use liquefied natural gas instead of oil. The China National Offshore Oil Corp (CNOOC) announced plans to build a third LNG terminal by 2009. Natural gas is an attractive alternative in that it is plentiful outside the Middle East and relatively environmentally friendly. In the short-term, however, the cost of gas infrastructure and the availability of large amounts of inexpensive coal will preclude extensive use of natural gas.

APPENDIX

SELECTED MAJOR PROPOSED RUSSIAN OIL EXPORT PIPELINES [11]

There are several proposals to expand Russian oil pipelines. The largest of Russia's export pipelines to Europe, the 2,500-mile Druzhba line has a capacity of 1.2–1.4 million bbl/d. It begins in southern Russia, near Kazakhstan, where it collects oil from West Siberia, the Urals, and the Caspian Sea. From Belarus to where the pipeline splits in two at Mozyr, the system is only approximately 50 percent utilized. After Mozyr, both branches are fully utilized, one running through Belarus, Poland and Germany; and the other section running through Belarus, Ukraine, Slovakia, the Czech Republic, and Hungary. Work has begun to increase the pipelines' capacity between Belarus and Poland. A proposal to extend the pipeline into Germany (specifically to Wilhelmshaven) would reduce tanker traffic in the Baltic Sea, and would allow for exports of Russian crude oil to the United States via Germany.

The Baltic Pipeline System (BPS) went on line in December 2001 carrying crude oil from Russia's West Siberian and Timan-Pechora oil provinces westward to the newly completed port of Primorsk in the Russian Gulf of Finland. Throughput capacity at Primorsk has been steadily increased to around one million bbl/d by December 2004. The BPS gives Russia a direct outlet to northern European markets, allowing the country to reduce its dependence on transit routes through Estonia, Latvia, and Lithuania. The growth of the BPS has come at considerable cost to the Baltic countries, as Russian crude has been re-routed through the BPS. Russian authorities have stated that when allocating the country's exports, precedence will be given to sea ports in which Russia has a stake over foreign ones. Pending government approval, the pipeline will be expanded to 1.2 million bbl/d.

A proposed pipeline would carry crude oil from Russia's West Siberian Basin and Timan-Pechora basin westward to a deepwater tanker terminal at Murmansk on the Barents Sea. This would allow for between 1.6 and 2.4 million bbl/d of Russian oil exports to reach the United States via tankers within only 9 days, much faster than shipping from the Middle East or Africa. LNG facilities at Murmansk and Arkhangelsk (to the southeast) also have been suggested, possibly allowing for gas exports to American markets. Despite support for the Murmansk proposal from Russian oil companies, American oil companies, and the U.S. Government, Transneft (and thereby the Russian government) has approached the project with trepidation. Transneft was considering a shorter western route with a terminus at Indiga instead of Murmansk, and Transneft's CEO said the Murmansk project was no longer economically feasible. The Indiga pipeline would be closer to the Timan-Pechora oil fields than the Murmansk pipeline, but, in contrast to Murmansk, the port of Indiga is iced over during the winter. Since the Russian government has given priority to the construction of the Taishet-Nakhodka pipeline (see below), Transneft is reluctant to take on two large pipeline projects at the same time.

The Adria pipeline runs between Croatia's port of Omisalj on the Adriatic Sea and Hungary. Originally designed to load Middle Eastern oil at Omisalj and pipe it northward to Yugoslavia and then to Hungary, the pipeline's operators and transit states have been considering reversing the flow—a relatively simple step—giving Russia a new export outlet on the Adriatic Sea. Connecting the pipeline to Russia's Southern Druzhba system requires the agreement of Russia, Belarus, Ukraine, Slovakia, Hungary, and Croatia. These countries signed a preliminary agreement on the project in December 2002; however, negotiations over the project's details (including tariffs and environmental issues) have been slow. Some analysts expect that

[11] Nearly all of the discussion of Russian oil and pipelines is taken from the Russia Country Analysis Brief of February 2005, prepared by the Energy Information Administration.

the Adria pipeline could transport about 100,000 bbl/d of Russian crude in the first year of reversal, with an ultimate capacity of about 300,000 bbl/d.

The prospective large Chinese market for oil has led to serious consideration of building a pipeline from the Russian city of Angarsk to Nakhodka (near the Sea of Japan) or to Daqing, China. The situation is fluid, and no definitive decision as to choice has been made.

The route to Nakhodka is longer, passes close to Lake Baikal (a site with environmental-related obstacles), and consequently is more expensive than the Daqing route. It will provide a new Pacific port from which Russian oil could be shipped by tanker to other Asian markets and possibly North America. The Daqing option is favored by China, although China could obtain exports via the Nakhodka route. Russian officials and Transneft executives have reported that the Nakhodka route would include a pipeline spur from Skovorodino (located about 30 miles from China), which could provide China with Russian oil.

Selected Major Actual and Proposed Russian Gas Export Facilities

The 750-mile Blue Stream natural gas pipeline connects the Russian system to Turkey, 246 miles of which extends underneath the Black Sea. Natural gas began flowing through the pipeline in December 2002 at a rate of 71 billion cubic feet per year (bcf/y), which was to increase by 71 bcf/y. Estimates put 2004 transport levels at approximately 565 bcf/y. However, in March 2003, Turkey halted deliveries through Blue Stream, invoking a clause in the contract allowing either party to stop deliveries for 6 months. After filing suit in Stockholm's International Arbitration court, the two sides came to an agreement in November 2003 and the supply of natural gas to Turkey resumed in December 2003.

Under one proposal, the Yamal-Europe I pipeline (1 tcf per year), which carries natural gas from Russia to Poland and Germany via Belarus, would be expanded another 1 tcf per year. However, Gazprom and Poland disagree on the exact route of the second branch as it travels through Poland. Gazprom is seeking a route via southeastern Poland to Slovakia and on to Central Europe, while Poland wants the branch to travel through its own country and then to Germany.

The idea of a North Trans-Gas pipeline (or North European Gas Pipeline), extending over 2,000 miles from Russia to Finland and the United Kingdom via the Baltic Sea, was proposed in June 2003 by Russia and the UK. About 700 miles of the pipeline will pass under the Baltic Sea. In January 2004, the Russian government issued an official decree in support of the pipeline's construction and several European oil and natural gas concerns have reportedly shown interest in the project. However, there presently is no definite consortium developing the pipeline. Gazprom's CEO announced in February 2005 that the pipeline would be delayed from its 2007 start date to 2010. The project is expected to cost $5.7 billion and to transport approximately 0.7–1.0 tcf of natural gas beginning in 2010. The main advantage of this pipeline to Russia is that it no longer will have to negotiate transit fees with nearly half a dozen countries or pay them in natural gas. A possible spur to Sweden also has been considered. Although both countries are enthusiastic about the project, unresolved conflicts between the EU's liberalized natural gas market and Russia's state regulated system could be a hindrance.

Rusiya Petroleum (a consortium led by TNK-BP), South Korea's state-owned Korea Gas Corporation (Kogas), and the Chinese National Petroleum Company (CNPC) have announced plans to construct a pipeline connecting Russia's Kovykta field to China's northeastern provinces and across the Yellow Sea to South Korea. The plan calls for a 1.2 billion cubic feet-per-year pipeline that would deliver roughly two-thirds of its natural gas annually to China, delivering the rest to South Korea and (in smaller quantities) to the domestic market en route. The partners expect that the pipeline could come online in 2008.

There have been proposals for LNG export facilities at Murmansk, Yamal, and Shtokman near the Barents Sea. These terminals could provide U.S. East Coast LNG terminals with natural gas in the future. The economic success of Norway's nearby Snovit project, already further along the way to completion, will be a barometer for the success of other Barents Sea LNG terminals. To serve the Western United States and Asia, the developers of Sakhalin II have begun construction on the south end of Sakhalin Island.

Maps

http://www.eia.doe.gov/emeu/cabs/Caspian/Maps.html

Senator HAGEL. In conclusion, do either want of you want to add anything?

Dr. HARBERT. I would only add that this is a region of tremendous opportunity, and that, as Paul mentioned, this is a win-win, and that for these governments to take advantage of their natural resources for the benefit of their own economies requires the right investment climate and the right type of investment that multinational corporations offer.

Senator HAGEL. Thank you.

Mr. Simons?

Mr. SIMONS. No, thank you.

Senator HAGEL. Well, good to have you both back with us. And we are always appreciative of your efforts. Give our regards and thanks to your colleagues.

Thank you.

As the first panel is leaving, and as Bertie is setting up a new set of name plates, the second panel can move up to the table.

[Pause.]

Senator HAGEL. Bertie, thank you. You always take good care of our guests. We are grateful. He usually gives each of you a glass of ethanol in the afternoon, just to make sure you're awake.

Thank you, again. We are most grateful for each of you coming forward. And I think all of you, almost all of you, have been here a number of times and have testified before a number of committees. So, we're, again, appreciative of your efforts to come forward and share with us some of your thoughts on the issue that we're examining today.

In the area of energy, which is vast, as you all know, we look forward to your testimony, and I'll have some questions at the end. Take the time that you need. And, as I introduced you, that's how we will begin.

Mr. West, welcome back.

STATEMENT OF J. ROBINSON WEST, CHAIRMAN, PFC ENERGY, WASHINGTON, DC

Mr. WEST. Thank you, Senator.

I have my written testimony, and I'd like to a couple of points make, some of which were covered, in part, before.

One, I think that the timing of this hearing is very important, because Russia takes over the leadership of the G-8 in January. And I think this is an opportunity for both Russia and the G-8 which should not be lost. This is very timely.

Russia is the only member of the G-8 which is not only a significant producer—the United States is also a significant producer—but it's also a significant exporter, so it really has a special role to play in the G-8. It has substantial oil reserves, but when it comes to gas, it is the Saudi Arabia of gas. It can play an already significant role, and it can play a tremendously important role.

But it also lacks certain critical factors. It has the resources, but it lacks other things. Energy production requires massive long-term investment, capably managed. Russia has a long and distinguished history in oil and gas, but the current Russian oil and gas sector was created out of the chaos of the last 15 years, and it lacks the stability and organizational skills necessary to mount a giant multi-phased energy program, which is what's going to be required for Russia and for the world economy.

President Putin has grand designs for the Russian energy industry. As the Russian military has fallen away, energy has become the keystone and capstone of—it is their foreign policy calling card, and it is their calling card to have a place at the high table of the world economy and geopolitics. President Putin believes the state should play a dominant role in certain strategic industries, particularly in oil and gas. He is well within his rights to promote this policy, but the sector must be managed efficiently. And right now, frankly, it isn't.

We need management accountability and transparency, which remain serious problems, in each organization, along with the capital structure, management systems, and strategic outlook needed to organize and execute multi billion-dollar projects, taking 10 or 15 years to realize. This—just having a big bureaucracy managing things isn't good enough; it's got to be a competent bureaucracy, and there is very little demonstrated ability to manage a big portfolio of world-class projects.

One of the points, also, that we believe is that my firm, PFC Energy Estimates, indicate that Russian oil production, which is now at about 9.2 million barrels per day, will peak at just over 10 million barrels per day in 2008, and then begin to plateau and decline unless there is a huge infusion of capital, technology, and management for further exploration and development. More importantly, the end of Russia's oil renaissance spells the end of recent growth in non-OPEC energy supplies. If you look at global oil markets, virtually all the surge in non-OPEC oil production has come from Russia.

There is one slight misunderstanding that I think is important to correct. In the previous panel, the point was made that production had risen rapidly at the end of the nineties and the beginning of the new millennium. But the fact of the matter is, Russian production had collapsed earlier, and is now just getting back up to its former levels. So, this was really a brownfield renaissance. These were discovered fields. And so, I think it's important to put that in perspective.

I think there are three areas that should be focused on. One is oil exploration, the second is liquefied natural gas, and the third is infrastructure. And the previous panel talked about it, and I know there will be discussion on gas.

Without further exploration in other prospective regions—notably, Eastern Siberia and the Arctic—we believe Russian production will begin to fall by the end of the decade. However, without a stable legal and operating environment and a tax policy that encourages investment in exploration, Russia simply will not meet its energy potential.

Secondly, Russia is unique; its oil resources are vast distances from the border in export markets. As was pointed out in the earlier panel, the government, through Transneft, controls the oil and, through Gazprom, controls the gas. And there's going to be massive investment required in state companies. And finding a vehicle to do this is not uncomplicated.

And another point is LNG—is liquefied natural gas. And many of the future megafields are located predominantly offshore, which require technology and expertise, especially in liquefied natural

gas. And Gazprom, which insists on controlling many of these, simply has no experience in this area.

And it's going to be LNG which is going to be the real energy bridge, if there is one, between the United States and Russia. And I think both Presidents, at Bratislava and other points, have made this. And unless the northern gas—Siberian gas is—develop LNG exports fairly quickly, however, other competing projects in Africa and the Middle East will beat them in the race to U.S. markets. There is a window. And if Russia doesn't get in this—in the queue, there are other places in West Africa and North Africa and the Middle East, and possibly even Latin America, that'll beat it out.

As I mentioned earlier, there has been a brownfield renaissance, but, you know, exploration is going to be very important, and the private sector and international companies can really be critical in helping to support that.

Again, Russia's energy sector power has been reconcentrated in state companies, or companies which are loyal to state interests. This is simply a fact. It's clear how committed—or, it is not clear how committed or able the state companies are to manage the sector efficiently. The challenges and needs are daunting. To put it in perspective, Gazprom—to give you an idea of the inefficiency of Gazprom, Gazprom consumes more gas to extract, process, and transport its gas per year than the entire country of France consumes in a year. So, instead of dwelling on the loss of Yukos—and there's been a lot of politics around here—I think it's very important that people focus on substantively getting Russia—helping Russia to optimize its portfolio. And the Government should look for ways to resurrect the U.S. energy dialogue in ways that promote efficiency, the participation of international oil companies in key projects, and the development of new resources within the context of the Kremlin's emerging energy doctrine. It's their oil and their gas—they're going to run it the way they want. But they have to understand it has to be run competently. And I think we've got to help them.

But to get critical projects moving, international partners are going to be absolutely essential to assure high operating standards and the necessary capital requirements are available. Also that the U.S. dialogue must focus on real deals, not vague memorandum of understanding often signed by Russian companies, with no follow-through. The focus should also shift to more achievable and tangible discussions, such as technical solutions for pipeline bottlenecks, technology to increase energy efficiency of infrastructure, these kinds of—how to make the system work as well as it can.

One of the things that I think is also important is that the dialogue and the U.S. Government should encourage the development of highly accountable, agile, and risk-taking independent oil and gas companies in Russia. This can become very, very important to moving projects forward. If you rely just on big state companies, I don't think we're going to get where we want to go. The oil and gas sector should not be left to state enterprises alone.

In turning to Kazakhstan, I think it's important to recognize that Kazakhstan is arguably one of the most important new upstream investment frontiers since the opening of the North Sea in the 1970s, their huge—three supergiant fields—Tengiz, Karachaganak,

which is one of the world's largest gas condensate fields, and Kashagan, which is the largest single discovery in the last 25 years, and which is being developed by a consortium of companies, including Exxon and ConocoPhillips. But, ultimately, for Kazakhstan to realize its production potential, it'll have to decide what additional pipeline routes are used—to use or to build beyond the existing Soviet-era Transneft and CPC pipelines. Kazakhstan's output can continue to grow only if it gets access to more pipeline capacity before 2010.

Just as the world's energy security benefits from the diversity of supply, the regional energy security of Eurasia is enhanced by the diversity of export routes. Choke points in Russia, the Caucasus or the Bosporus can be mitigated through multiple export options. China is going to play a critical role in this. China borders Kazakhstan in the east, and it's also competing for access to Kazakhstan's reserves, introducing a noncommercial element to the competition for Kazakh resources. For example, it broke ground in 2004 to build its first-ever oil pipeline to connect foreign reserves to China before it struck its $4 billion acquisition, last month, of PetroKazakhstan. CNPC will become the second largest producer in Kazakhstan, after Kazakhstan's national oil company. However, China's involvement with the Kazakh energy sector should be seen as positive and natural evolution. We should not see it as competing. This is something I don't think we should discourage. And, for the global energy markets, as well, it provides additional diversity and should provide more diversity of export groups.

One thing that is confusing to foreign oil company producers in Kazakhstan is the ultimate U.S. strategy with regard to multiple exit routes. Pipelines are projects with long lives, and politics and geopolitics can determine whether they operate or shut down. However, over the long life of a pipeline, political and geopolitical circumstances can change, especially in Russia, in regions such as the Caspian. I'd remind you that at the end of the Carter administration, the beginning of the Reagan administration, there was adamant opposition to the big gas lines from Russian going to western Europe. This turned out to be a mistake. Russia has turned out to be a very reliable supplier to western Europe, and it's an important link, and it's tended to stabilize Russia and build links with the West.

The BTC pipeline is a perfect case, also. It was conceived in the early 1990s, with the desire to bypass Russia. Yet before the pipeline was even commissioned, BP, its operator and largest investor, is now the largest foreign investor in Russia, owning 50 percent of TNK-BP, as represented in this panel, which is now the second largest oil producer in Russia.

Given the size and scale of the Kashagan project, which is a world-class project—this is a supergiant field; this is an elephant—the consortium partners are looking for export routes to reach markets. Pressure to build a pipeline via Iran is likely to grow. Non-U.S. foreign oil company producers may decide to stop second guessing U.S. policies and opt for commercial imperatives.

In the end, whatever U.S. policy is, this is a business, and people have to recognize this. And if certain policy steps are taken to deny logical commercial investments, there will be a cost. It's certainly

within the purview of Congress and the Administration to set whatever policy, but it's got to recognize that certain policies may lead to costs which could hurt the U.S. consumer and make life more difficult in the oil markets.

In conclusion, both Russia and Kazakhstan, the timing for construction and the direction of new export routes will influence the pace of development of the energy sector in both countries. High oil prices have empowered both countries to pursue more resource, nationalist policies, and promote their respective national energy companies and project management skills, to explore and develop more technically complex projects in the Eurasian frontier.

So, in conclusion, I would say, whatever policies are undertaken by the U.S. Government and recommended by Congress, I think it's very important to recognize that they must be made within a rational commercial context, or they can be self-defeating.

Thank you.

[The prepared statement of Mr. West follows:]

PREPARED STATEMENT OF J. ROBINSON WEST, CHAIRMAN, PFC ENERGY

Good afternoon. Senator Hagel and distinguished members of this Subcommittee, it is a pleasure to come before you today to address such an important topic. My name is Robin West and I am the Chairman of PFC Energy. PFC Energy is a strategic advisory firm, based in Washington, DC. We work with most of the companies in the global petroleum industry on various aspects of their international oil and gas investments and market strategies.

RUSSIA AS THE ONLY G-8 ENERGY EXPORTER

The timing of today's hearing is fortuitous as it occurs in the lead up to Russia assuming the 6-month leadership of the G-8 in January 2006. President Putin has announced that the theme of his presidency will be energy security. Given recent events, this would be a good idea now no matter which country was leading the G-8, but makes particularly good sense under Russian leadership.

Of all the G-8 members, Russia is the only nation with massive production and large reserves of oil and gas. It produces 9.2 million barrels of crude oil per day (bpd) and 22 trillion cubic feet (tcf) of natural gas. The U.S., the only other large producer in the G-8, generates 5.4 million barrels of crude oil per day and 19 tcf of gas. But Russia exports 4.85 million barrels of crude oil per day (bpd) and 7.7 tcf of gas, whereas the U.S. imports about 12.1 million bpd of crude oil and products and 4.1 tcf of gas. Russia supplies world markets now and can do even more in the future. Given high prices and maturing production elsewhere, such as the North Sea and North America, Russia has a critical role to play with its large estimated reserves of oil, over 72 billion barrels and 1694 trillion cubic feet of gas. Russia is the Saudi Arabia of natural gas.

Russia has the reserves to play this leading role on the world energy stage, but it lacks other critical factors. Energy production requires massive long-term investment capably managed. Russia has a long and distinguished history in oil and gas. The current Russia oil and gas sector however created out of the chaos of the last 15 years lacks the stability and organizational skills necessary to mount a giant multi-phase energy program.

STRONG STATE OIL AND GAS FIRMS TO DOMINATE THE RUSSIAN HYDROCARBON SECTOR

President Putin has grand designs for the Russian energy industry. He believes the state should play a dominate role in certain strategic industries, particularly in oil and gas. He is well within his rights to promote this policy but the sector must be managed efficiently. State enterprises, notably Gazprom, Rosneft—Russia's national gas and oil companies, respectively and Transeft, Russia's oil pipeline company, have large assets and some very capable people. However, management accountability and transparency remain serious problems in each organization along with the capital structure, management systems, and strategic outlook needed to organize and execute multi-billion dollar projects taking 10 or 15 years to realize.

One only has to read to the business headlines to be familiar with the on-again, off-again merger of Gazprom and Rosneft or have followed the completely bungled

destruction of Yukos to realize that the current policies will not permit Russia to meet its energy potential. Gazprom's imminent bid for Sibneft, Russia's No. 5 oil producer and one of the most efficiently managed energy companies in Russia, combined with Rosneft's poaching of Yuganskneftegaz, Yukos' crown jewel production subsidiary, risks reversing the tremendous efficiency gains the Russian sector made in the 1990s—gains that were primarily the result of the adoption of Western technology and management know-how. The impact could be enormous, both for Russia and world's energy markets, as the world needs every barrel of Russian oil and molecule of Russian gas.

Russia is the largest world's largest gas producer and now the No. 2 oil producer, but its production growth has faltered in the past year. PFC Energy estimates indicate that Russian oil production, now at 9.2 million barrels per day, will peak at just over 10 million barrels a day in 2008, and then begin to plateau and decline unless there is a huge infusion of capital, technology and management for further exploration and development. More importantly, the end of Russia's oil renaissance spells the end of recent growth in non-OPEC energy supplies. But with growing Chinese and Indian demand plus the insatiable appetite of the U.S., markets will be tight and even more reliant on the Middle East.

BRINGING RUSSIAN RESERVES TO THE INTERNATIONAL MARKET

The Russian energy sector needs international investment in several critical areas—oil exploration, liquefied natural gas, and infrastructure.

There may be large energy reserves in Russia, probably the largest outside of the Middle East. But without massive investment and management skills, it will not flow. Billions will be needed as well to expand its export capacity. Extensive exploration has taken place in Western Siberia, where most of the oil production now occurs. Without further exploration in other prospective regions, notably Eastern Siberia and the Arctic, Russian production will begin to fall by the end of the decade. However, without a stable legal and operating environment and a tax policy that encourages investment in exploration, Russia will not meet its energy potential.

Russia is unique in that oil resources are vast distances form the border and export markets. A large network of petroleum pipelines, managed by Transneft, requires critical upkeep and expansion costing billions. Pipelines linking Russia to China and Japan need to be built. Likewise, Transneft should commit not to hamper the operation and expansion of pipelines crossing Russia, notably from the Caspian region.

Russia with its immense gas reserves is the largest supplier of natural gas to Western Europe. This gas moves through pipes built in the early-1980s over the strenuous objection of the Carter and Reagan administrations. In retrospect, this opposition was mistaken, since Russia has been a consistent, reliable supplier to the West. However, Gazprom faces production challenges within Russia and is still reliant on Soviet-era production facilities in Central Asia, primarily in Turkmenistan, to meet its supply contracts in Western Europe. With the exception of the Zapolyarnoye field, which was discovered in the 1960s but not opened in 2001, Gazprom has not commissioned a major field since the dissolution of the Soviet Union nearly 15 years ago.

Future mega-fields in Russia are located predominately off-shore, which require technology and expertise, especially in the Liquefied Natural Gas (LNG) sphere, that Gazprom lacks. Progress is slowly being made with Sakhalin projects, and most recently with Chevron and ConocoPhillips named among six IOCs short-listed for the giant Shtokman LNG project. LNG is a different business than pipeline gas. It involves super cooling natural gas to a liquid, loading it on large specialized tankers, and shipping it long distances to terminals near concentrated markets, primarily in Western Europe, North America, and Asia. LNG projects involve a chain of massive investments tied by complex commercial arrangements competing against other LNG projects.

Russia has virtually no experience in LNG, and yet LNG represents a critical opportunity for Russia. More importantly, LNG is the means by which a true energy bridge can be built between Russia and the U.S., a goal of both Presidents Putin and Bush. Unless the northern Siberian gas is developed into LNG exports quickly however, other competing projects in Africa and the Middle East will beat them in the race to the U.S. markets.

However, negotiations undertaken by international companies in Russia are an ordeal. State enterprises are often slow and unfocused, negotiating with many companies for the same projects. The bureaucracy is opaque and sometimes corrupt. Russian oil and gas laws can be unworkable, titles to reserves contradictory, and in some cases, tax laws effectively confiscatory.

RESURRECTING THE U.S.-RUSSIA ENERGY DIALOGUE

The U.S. has focused on Russia for an energy partnership because of its impressive oil production increases. No other country had made such production gains—growing from 6.8 million barrels a day to 9.2 million barrels a day in 2004. As mentioned previously, this growth was fueled by the so-called "brownfield renaissance" where Gazprom and the Russian oil companies continued to exploit existing big fields, and avoided the daunting task of developing large new greenfield oil and gas projects. The U.S. Government sought to define a closer partnership, whereby U.S. oil companies would participate in the development of the expensive new fields and pipelines that drive future production increases. Just as the U.S.-Russia energy relationship appeared to be heading toward a clearer definition in 2003, the arrest of Khodorkovsky and manner in which Yukos was destroyed effectively put the U.S.-Russia energy dialog on hold as the Kremlin grappled with how it wants to manage its energy sector, a debate which persists to this day.

It is clear that Russia's energy sector will be dominated by state companies, or companies "loyal" to the state's interests. That is a fact. It is less clear how committed—or able—the state companies are to managing the sector efficiently. The challenges and needs are daunting—to put it in perspective, Gazprom consumes more gas to extract, process and transport its gas per year than the entire country of France consumes in a year.

Instead of dwelling on the loss of Yukos from Russian energy scene, the U.S. government should look for opportunities to resurrect the U.S.-Russia energy dialog in ways that promote efficiency, participation of IOCs in key projects and the development of new resources within the context of the Kremlin's emerging energy doctrine. To get critical projects moving quickly, international partners are needed to ensure that high operating standards and the necessary capital requirements are available.

However, to be effective, the U.S.-Russia energy dialog must focus on real deals, not vague memorandum of understanding often signed by Russian companies with no follow through. The focus should also shift to more achievable and tangible discussions, such as technical solutions for pipeline bottlenecks, technology to increase energy efficiency of infrastructure, etc. Too often the dialog has focused on overly ambitious, Soviet-style mega-projects that have ended in failure due to a lack of political will or commerciality, or both.

Likewise, steps should be taken to encourage the development of highly accountable, agile, and risk-taking independent oil and gas companies in Russia. The oil and gas sector should not be left to state enterprises alone.

CASPIAN SEA DEVELOPMENT TO BE DETERMINED BY EXPORT ACCESS

The location of the Caspian Sea region, between Russia and Iran, has determined the focus of U.S. interests toward this region. In part to promote the sovereignty of the newly independent countries of Central Asia, as well as to maintain the isolation of Iran, the U.S. government dedicated the majority of its regional efforts in the 1990s to energy policy. The most visible result of this effort is $3.6 billion, 1,100-mile Baku-Tbilisi-Ceyhan pipeline which is scheduled to deliver first oil this year.

Despite the initial flurry of activity focused on Azerbaijan, due in a large part to its strategic location bordering Iran, Kazakhstan is arguably one of the most important new upstream investment frontiers since the opening of the North Sea in the 1970s. IOC participation to date has focused on three key mega-projects: Tengiz—one of the world's giant oil fields, operated by Chevron with ExxonMobil and Kazmunaigaz, Kazakhstan's national oil company, holding minority stakes; Karachaganak—the world's largest gas condensate field, operated by ENI and BG with Chevron holding a minority position; and Kashagan—the largest single discovery in the past 25 years which is currently underdevelopment by a consortium led by ENI with ExxonMobil and ConocoPhillips among the project partners. Collectively, all three projects have the potential to propel Kazakhstan into the elite company of the world's largest energy producers. Kazakhstan's exports currently average 800,000 barrels per day, with the potential to increase upwards of 1.6 million barrels per day by 2010, and by 2020 nearly 3.6 million barrels per day.

Additional significant investment by Western companies in Kazakhstan's offshore, which is technically complex given its unique characteristics, is predicated on the Kazakhs offering attractive and transparent fiscal terms. However, as highlighted by the Kazakhs' recent use of a controversial pre-emption right to buy into the Kashagan project consortium or the less than favorable new Production Sharing Agreement (PSA) law, the Kazakh government's intent is clearly to create a much more robust national oil champion in the coming years with a greater volume of production directly under its control.

Ultimately, for Kazakhstan to realize its production potential, it will have to decide what additional pipeline routes to use or build beyond the existing Soviet-era Transneft and Caspian Pipeline Consortium (CPC) pipelines. Kazakhstan's output can continue to grow only if it gets access to more pipeline capacity beyond 2010. The expansion of the CPC pipeline, which crosses Russia to the Black Sea, has been cast into doubt as Russia, which owns a stake in the pipeline, has sought renegotiate the terms of the project. Meanwhile, and perhaps not coincidentally, Russia is simultaneously promoting the upgrading of the Atyrau-Samara route, which links into its Transneft system. Kazakhstan is also considering accessing the BTC pipeline, which would require the upgrading of port facilities to ship crude by tanker across the Caspian Sea before offloading into the BTC pipeline.

Just as the world's energy security benefits from the diversity of supply, the regional energy security of Eurasia is enhanced by the diversity of export routes. Choke points in Russia, the Caucasus, or the Bosporus can be mitigated through multiple export options. Unlike the Chinese, IOC-led pipeline consortiums, including BTC, must make their investment decisions on a commercial basis, including the timing of alternative available export options and adequate supply over the life of the pipeline. Still, experience in the region has shown that politics can play an important role in pipeline commitments, but politics is difficult for companies to predict.

China, which borders Kazakhstan to the east, is also competing for access to Kazakhstan's reserves, introducing a non-commercial element to the competition of Kazakh resources. It broke ground in 2004 to build its first-ever oil pipeline to connect foreign reserves to China before it struck its $4 billion acquisition deal last month of PetroKazakhstan, a Canadian based oil company with operations exclusively in Kazakhstan, which will supply the pipeline. With this transaction, CNPC will become the second largest producer in Kazakhstan, after Kazakhstan's national oil company. However, China's involvement in the Kazakh energy sector should be seen as a positive and natural evolution for the region, and for the global energy markets as well, as it provides additional diversity of export routes as well incremental supply to the world markets.

One thing that is confusing to foreign oil company producers in Kazakhstan is the ultimate U.S. strategy with regard to multiple exit routes. Pipelines are projects with long lives and, yes, politics and geopolitics can determine whether they operate or shut down. However, over the long life of a pipeline, political and geopolitical circumstances can change—especially in Russia and regions such as the Caspian. The BTC pipeline is a perfect case in point. It was conceived in the early 1990s with the desire to bypass Russia. Yet before the pipeline is even commissioned, BP—its operator and largest investor—is now the largest foreign investor in Russia, owning 50 percent of TNK-BP, which is now the second largest oil producer in Russia.

Given the size and scale of the Kashagan project, the consortium partners are looking for export outlets to reach markets. Pressure to build a pipeline via Iran is likely to grow. Non-U.S. foreign oil company producers may decide to stop second-guessing U.S. policies and opt for commercial imperatives.

CONCLUSION

In both Russia and Kazakhstan, the timing for construction and the direction of new export routes will influence the pace of development of the energy sector in both countries. High oil prices have empowered both countries to pursue more resource nationalist policies and promote their respective national energy companies as the dominate player in the sector.

However, IOC participation will still be required to bring their technology and project management skills to explore and develop more technically complex projects in Eurasia' frontier regions. For too long, energy has been used policymakers as a proxy for geopolitical influence in the region, instead of seeing the resources as the basis for economic independence and interdependence as the countries of Eurasia become integrated in the world energy markets.

From a policy perspective, these regional issues of production and transportation are interwoven with U.S. strategy for global energy security. U.S. policy can and should promote increased oil and gas trade with Russian and the Caspian Sea region, which will contribute to the diversity of supply and to the future economic growth and security of these countries—a result that will have considerable consequences for U.S. energy and foreign policy objectives.

Senator HAGEL. Mr. West, thank you.

Mr. Ferguson, welcome.

STATEMENT OF ALASTAIR FERGUSON, DEPUTY EXECUTIVE DIRECTOR FOR GAS DEVELOPMENT, TNK-BP, MOSCOW, RUSSIA

Mr. FERGUSON. Thank you.

Mr. Chairman, I appreciate your invitation to address this hearing entitled "Energy Supplies in Eurasia and implications for U.S. Energy Security." And, as the deputy executive director for gas development at TNK-BP, based in Moscow, I spend a considerable amount of my time working on East Siberian developments.

For the record, TNK-BP is a company jointly owned by both BP and Alfa-Access-Renova, and, at more than $10 billion, represents the largest single foreign investment in Russian history. We're currently the second-largest producer of oil in Russia, roughly the same worldwide level as Chevron, and larger than ConocoPhillips.

In addition to presenting my oral testimony, I ask permission to submit a slide presentation on unlocking of East Siberian resources into the record.

Senator HAGEL. It will be included in the record. Please proceed. Thank you.

Mr. FERGUSON. My testimony today will center on the hydrocarbon-rich region of East Siberia and the role that it can specifically play in helping to meet global energy demands over the coming decades, including the United States, to ensure that liquefied natural gas will be available for both the West Coast, for both Middle East and Asia-Pacific suppliers.

Before starting, let me state clearly that I'm here representing a Russian company, and that, while the main focus of our activities is inside Russia, we appreciate the importance of engaging with key external audiences to understand the significant role of Russia in global affairs. And that clearly includes this committee.

As part of Russia's upcoming chairmanship of the G-8 next year, energy will be very high on that agenda, and my comments here today are in support of these efforts. What I'm about to say, I and my senior colleagues have said inside Russia many times.

In today's tight energy markets, every energy producer is important to global supply. Russia, specifically, is one of the most important members of that club. The country has the world's largest proven resources of natural gas, the second-largest coal reserves, and the eighth-largest proven oil reserves. Yet there are significant challenges.

While Russia remains the largest non-OPEC producer of oil, production rates have been largely stagnant for the past 12 months, and industry analysts expect that trend to continue. Therefore, increasing Russian production will be critical to meeting future global oil demand.

As for natural gas, Russia holds nearly twice the reserves of the next-largest country, Iran. In 2004, Russia was the world's largest natural gas producer, as well as the world's largest exporter.

According to the U.S. Department of Energy, however, Russia's natural gas industry has not been as successful as its oil industry at increasing production. The DOE notes that Russia's energy strategy calls for only modest natural gas production growth, about 1.3 percent, by 2010. In addition, and significantly, Gazprom's big three major fields in West Siberia, which comprise more than 70

percent of Gazprom's total natural gas production, are now in decline.

Interestingly, Russia's gas pipeline exports only flow west, to Europe, not east, to the growing—fast-growing Asia-Pacific markets. But Russia has successfully built a sizeable European business, supplying about 25—between 27 to 30 percent, depending on the calculations, of current European market demand.

Now, Asia has become a principal driver in world energy markets, largely due to China's remarkable consumption growth in recent years. The continuing surge in China's oil demand, which increased by 15 percent, or almost one million barrels per day in 2003 alone, has emerged as a major factor in influencing prices.

As the gap between consumption and production levels in Asia expands, the regional economic powers appear to be concerned that tight supplies and consequent high prices may constrain economic and industrial growth. As China, Taiwan, South Korea, Japan, and even the U.S. West Coast scramble to meet their growing energy needs, the largely undeveloped resources of East Siberia have become viewed as a potentially important supply option.

The Russian energy strategy to 2020, as outlined in the middle of 2003, set specific targets to deliver Russian gas and Russian pipeline gas into key Asia-Pacific markets and open up a new export corridor to the East from 2010. The real question is how best to meet this demand.

As mentioned earlier by other speakers, Russia has significant proven energy reserves, but many of its untapped resources are geographically well-positioned to supply the growing Asia-Pacific markets, including the U.S. Perhaps the most significant undeveloped hydrocarbon region is East Siberia, an area analogous, in terms of its energy riches, with the Caspian Sea 15 years ago. The parallels are actually quite striking. Significant undeveloped resource space, both oil and gas, a need for technology and large-scale financial investment to establish both new export corridors and infrastructure, and a need for key strategic geopolitical decisions from the respective governments.

A cursory look at the region indicates that it could, in fact, be much bigger. First, its size. As you can see from the first chart—the first enlarged chart, over here—East Siberia is a massive geographical area, 90 percent of the size of the continental U.S. As Senator Hagel knows, Nebraska fits into this region 36 times.

As for its hydrocarbon resource potential, Russian and Western geologists have found that the vast majority of the province has the potential to contain oil and gas in truly world-scale quantities.

As you can see from the second chart, so far only about 4½ percent of the oil producing areas have been explored, and about 7 percent of the gas areas. But this has already resulted in proven gas reserves of just under 200 trillion cubic feet, exceeding those of both the United States and the Gulf of Guinea. The resource base in one field alone, Kovykta, is more than the whole of China's gas resource space.

As for oil, at the bottom of this chart, seven billion barrels have been proven, but there is the potential for this figure to reach a level equal to all of U.S. and Caspian proven reserves combined.

Having spent more than 26 years in the oil and gas industry, and seeing how the advances of technology have taken us to the extremes of our planet in search of resources, I can safety tell you that this is one of the largest remaining undeveloped hydrocarbon basins in the world today.

I believe the next key question, therefore, is how to develop these resources and get them to market. The Russian Government is currently considering options for construction of an oil pipeline to China, and the country's eastern coastline to serve regional energy markets, including Japan and the U.S. West Coast. A proposed gas pipeline, however, is more problematic.

Some critics argue that Russian should develop either the Sakhalin gas fields offshore in eastern Russian or the East Siberian gas fields. They maintain that the current market does not justify development of both. We feel strongly otherwise. And let me explain.

While current U.S. West Coast uncontracted LNG demand is relatively small, the amount of expected demand by 2020 is significant—by our calculations, more than 20 billion cubic meters per annum, and nearly three-quarters of that expected supply has yet to be identified.

China, on the other hand, is expected to consume nearly 200 billion cubic meters annual by 2020, and nearly 40 percent of that figure, or five times as much as U.S. West Coast demand, will need to be imported and has yet to be contracted.

If one adds in the other Asia-Pacific countries, the region, as a whole, will require 200 to 250 billion cubic meters per annum of gas imports by 2020, to be contracted over the next 15 years. This is double the current level of LNG imports to the region today, and will result in intense competition for resources.

As far as reserves are concerned, the amount of gas reserves and resources in Sakhalin is smaller than Kovykta in East Siberia, and this is especially important, when considering that those who favor a Sakhalin or East Siberia approach see this gas supplying Chinese, Japanese, and U.S. West Coast markets, amongst others.

Secondly, the gas from Sakhalin is associated gas, meaning that its production rates track that of the oil reserves where it is situated. This means that it rises and falls with oil production and is difficult to guarantee a steady supply of gas to those markets.

Clearly, Sakhalin cannot provide all of—for all of these demands alone, nor can one field like Kovykta and East Siberia. But together they can make a major contribution to growing regional energy consumption, and can significantly alter the Asia-Pacific region gas balance. In fact, the Asia-Pacific market is so significant that it justifies fuel-field development and construction of a 4,800 kilometer pipeline from East Siberia to China and on to South Korea, one that would stretch from this committee hearing room in Washington to Anchorage, Alaska, at a cost of up to 18 billion U.S. dollars.

Without Kovykta and East Siberia, however, the picture is very different. The fast-growing economies of East Asia are likely to sink, pulling in a significant amount of gas production from other regional producers, including the Middle East, Indonesia, and Australia, and this will result in the U.S. West Coast being severely

limited in its supply options. And, second, it will drive global prices for natural gas higher, because the massive gas fuels in East Siberia, including Kovykta will remain stranded.

Timing is another key issue here. China, Taiwan, South Korea, and Japan all understand these dynamics extremely well. They're not only looking to the future, but are also planning for it. China, for example, is studying the options to construct as many as 11 LNG regasification facilities along its east and northeastern coast to take Middle East, Indonesian, and Australian liquefied natural gas in the event that East Siberian gas fields transporting Russian pipeline gas to China are not developed. So, even with the development of East Siberia, China will need some additional LNG, but, without, it will need to focus clearly on LNG from other markets.

At TNK-BP, we've spent the last 2 years studying these issues in detail. And over the previous 5 to 8 years, the companies—the legacy companies have spent $300 million in this process. We have analyzed the various transportation options and project costs. We've engaged in extensive research and negotiations in market demand. And we have assessed the impact of developing Kovykta and Sakhalin gas at the same time.

We feel that we understand these issues well, and it is our view that both projects can, and should, be developed at the same time. There is significant market demand in China, Taiwan, South Korea, Japan, and the United States to develop Sakhalin and, at the same time, utilize the natural gas from East Siberia—in Kovykta, specifically.

Let me add that Kovykta needs to be viewed as the anchor project around which East Siberian gas resources can be developed. East Siberian pipeline gas can supply Asia markets and indirectly free supplies of LNG to be exported to U.S. West Coast markets.

In summary, this is about getting the right gas to the right markets at the right time. Furthermore, we believe that the East Siberian energy can be developed in a way that fosters regional cooperation and energy security while maximizing market economic principles by providing China, the U.S., and others the energy needed to meet future demand.

East Siberian pipeline gas to Asia is also the most cost-effective way to export Russian gas while providing for important regional development in Russia. This would, in turn, maximize the revenues to Russia.

In short, and as mentioned by the previous speakers, this is a true win-win scenario that will fundamentally change the energy relationship between Russia, China, and South Korea, and, at the same time, provide greater energy security to the Asia-Pacific region.

In summary, I'd like to reiterate what I said at the start of my comments. I was invited here as the representative of a Russian company that understands the importance of engaging with key external audiences. And, as part of Russia's upcoming chairmanship of the G-8 next year, energy security will be very high on the agenda. And my comments here today are in support of these efforts.

While East Siberia is a relatively unknown hydrocarbon region today, I hope that I've demonstrated just how important it will be

over the coming years and decades to be an important support of supply to world markets if developed in a timely and efficient way.

Thank you.

[The prepared statement of Mr. Ferguson follows:]

PREPARED STATEMENT OF ALASTAIR FERGUSON, DEPUTY EXECUTIVE DIRECTOR FOR GAS DEVELOPMENT, TNK-BP

Mr. Chairman, members of the Committee, I appreciate your invitation to address this hearing entitled "Energy Supplies in Eurasia and Implications for U.S. Energy Security." My name is Alastair Ferguson and I am the Deputy Executive Director for Gas Development at TNK-BP. TNK-BP is a company jointly owned by BP and Alfa-Access-Renova, and at more than $10 billion represents the largest single foreign investment in Russian history. We are currently the second largest producer of oil in Russia; roughly the same worldwide level as Chevron and larger than ConocoPhillips.

My testimony today will center on the hydrocarbon rich region of East Siberia and the role that it can play in helping to meet global energy demands over the coming decades—including, for the United States, to ensure that liquefied natural gas will be available for the West Coast from both Middle East and Asian-Pacific suppliers.

Before starting, let me state clearly that I am here representing a Russian company and that while the main focus of our activities is inside Russia, we also appreciate the importance of engaging with key external audiences that understand the significant role of Russia in global affairs—and that clearly includes this Committee. As part of Russia's upcoming chairmanship of the G-8 next year, energy will be high on the agenda. My comments here today are in support of these efforts. What I am about to say I, and my senior colleagues, have said many times inside Russia.

RUSSIA'S RESOURCE BASE

In today's tight energy markets, every energy producer is important to global supply. Russia specifically is one of the most important members of that club. The country has the world's largest proven resources of natural gas, the second largest coal reserves and the eighth largest proven oil reserves.

Yet there are challenges. While Russia remains the largest non-OPEC producer of oil, production rates have been largely stagnant for the past 12 months—and industry analysts expect that trend to continue. Therefore, increasing Russian production will be critical to meeting future global oil demand.

As for natural gas, Russia holds nearly twice the reserves (1694 tcf, 48 tcm) of the next largest country, Iran. In 2004, Russia was the world's largest natural gas producer (57 bcfd, 589 bcma) as well as the world's largest exporter (14.2 bcfd, 148 bcma).

According to the U.S. Department of Energy, however, Russia's natural gas industry has not been as successful as its oil industry at increasing production. The DoE notes that "Russia's energy strategy calls for only modest natural gas production growth (about 1.3 percent) by 2010." In addition, Gazprom's Big Three major fields in Western Siberia which comprise more than 70 percent of Gazprom's total natural gas production are now in decline. Interestingly, Russian gas pipeline exports only flow west to Europe—not east to growing Asian markets. Russia has successfully built a sizable European business supplying (150 bcma) about 27 percent of current European market demand.

GROWING DEMAND IN ASIA

Asia has become a principal driver in world energy markets, largely due to China's remarkable consumption growth in recent years. The continuing surge in China's oil demand, which increased by 15 percent, or almost 1 million barrels per day in 2003 alone, has emerged as a major factor in influencing world oil prices.

As the gap between consumption and production levels in Asia expands, the region's economic powers appear to be concerned that tight supplies and consequent high prices may constrain economic growth. As China, Taiwan, South Korea, Japan and even the U.S. West Coast scramble to meet their growing energy needs the largely undeveloped resources of East Siberia have become viewed as a potential important supply option. The Russian Energy Strategy to 2020 as outlined in 2003 set specific targets to deliver (10 bcfd, 106 bcma) Russian gas into key Asia Pacific markets and open up a new export corridor to the east. The real question is how best to meet this demand.

EAST SIBERIAN RESOURCES

As discussed above, Russia has significant, proven, energy reserves. Many of its untapped resources are geographically well positioned to supply the growing Asia-Pacific markets—including the United States. Perhaps the most significant undeveloped hydrocarbon region is East Siberia; an area analogous in terms of its energy riches with the Caspian Sea 15 years ago.

The parallels are striking—significant undeveloped resource base (both oil and gas), a need for technology and large-scale financial investment to establish new export corridors, and a need for key strategic/geopolitical decisions from respective governments. A cursory look at the region indicates that it could, in fact, be much bigger.

First, its size. As you can see from this chart, East Siberia is a massive geographical area; 90δrcent of the size of the continental United States. As Senator Hagel knows, Nebraska fits into this region 36 times.

As for its hydrocarbon resource potential, Russian and western geologists have found that the vast majority of the province has the potential to contain oil and gas in truly world-scale quantities. As you can see from this second chart, so far only 4.4δrcent of oil producing zones have been explored and only 7 percent of the gas zones—but this has resulted in proven gas reserves of 198 tcf, (5,6 tcm) exceeding those of both the United States and the Gulf of Guinea. The resource base in one field alone, Kovykta (2 tcm) is more than the whole of China's gas resource base. As for oil at the bottom of this chart, 7 billion barrels have been proved but there is the potential for this figure to reach a level (75 billion barrels) equal to all U.S. and Caspian proved reserves combined.

Having spent more than 26 years in the oil and gas industry—and seeing how the advances of technology have taken us to the extremes of our planet in search of resources—I can safely tell you that this is one of the largest remaining undeveloped hydrocarbon basins in the world.

ACCESS TO MARKETS

I believe the next key question, therefore, is how to develop these resources and get them to market.

The Russian government is currently considering options for construction of an oil pipeline to perhaps China and the country's eastern coastline to serve regional energy markets including Japan and the U.S. West Coast.

A proposed gas pipeline, however, is more problematic. Some critics argue that Russia should develop either the Sakhalin gas fields offshore eastern Russia or the East Siberian gas fields, including the massive Kovykta reserves. They maintain that the current market does not justify development of both fields. We feel strongly otherwise. Let me explain.

While current U.S. West Coast un-contracted LNG demand is relatively small, the amount of expected demand by 2020 is significant (more than 20 billion cubic meters annually), and nearly ¾ of that expected supply has yet to be identified. China, on the other hand, is expected to consume nearly 200 billion cubic meters annually by 2020, and nearly 40 percent of that figure—or 5 times as much as U.S. West Coast demand—will need to be imported and has yet to be contracted.

If one adds in the other Asia-Pacific countries, the region as a whole will require 200–250 bcma of gas imports by 2020 to be contracted over the next 15 years. This is double the current level of LNG imports to the region today and will result in intense competition for resources.

As far as reserves are concerned, the amount of gas reserves in Sakhalin are smaller than Kovykta—and this is especially important when considering that those who favor a Sakhalin or Kovykta approach see this gas supplying Chinese, Japanese and U.S. West Coast markets. Second, the gas from Sakhalin is "associated gas" meaning that its production rates track that of the oil reserves where it is situated. This means that it rises and falls with oil production and is difficult to guarantee a steady supply of gas to markets.

Clearly, Sakhalin cannot provide for all of these demands alone—nor can Kovykta—but together they can make a major contribution to growing regional energy consumption and can significantly alter the Asia Pacific Region gas balance. In fact, the Asia-Pacific market is so significant that it justifies full-field development and construction of a 4,800 kilometer pipeline from East Siberia to China and onto South Korea—one that would stretch from this Committee hearing room in Washington to Anchorage, Alaska—at a cost of $18 billion dollars.

Without Kovykta, however, the picture is very different. The fast growing economies of East Asia will act as a sink, pulling in a significant amount of gas production from the other regional producers including the Middle East, Indonesia and

Australia. This will result in the U.S. West Coast being severely limited in its supply options—and second, it will drive global prices for natural gas higher because the massive gas fields East Siberia, including Kovykta, will remain stranded.

Timing is another key issue here. China, Taiwan, South Korea and Japan all understand these dynamics extremely well. They are not only looking to the future, but also planning for it. China, for example, is studying options to construct as many as 11 LNG re-gasification facilities along its east and northeastern coasts to take Middle East, Indonesian and Australian liquefied natural gas in the event that the East Siberian gas fields transporting pipeline gas to China are not developed. Even with development of East Siberia, China will need some additional LNG, but without they will need to focus clearly on LNG from other markets.

At TNK-BP, we have spent the last 2 years studying these issues in detail and spending $300 million in the process. We have analyzed the various transport options and project costs. We have engaged in extensive research and negotiations on market demand and we have assessed the impact of developing Kovykta and Sakhalin gas at the same time. We feel that we understand these issues well and it is our view that both projects can and should be developed at the same time. There is sufficient market demand in China, Taiwan, South Korea, Japan and the United States to develop Sakhalin and at the same time utilize the natural gas from Kovykta and East Siberia. Let me also add that Kovykta should be viewed as the anchor project around which East Siberia's gas resources can be developed. East Siberian pipeline gas can supply Asian markets and indirectly free supplies of LNG to be exported to American markets.

In summary this is about getting the right gas, to the right markets, at the right time.

Furthermore, we believe that East Siberian energy can be developed in a way that fosters regional cooperation and energy security while maximizing market economic principles by providing China, the U.S. and others, with the energy needed to meet future demand. East Siberian pipeline gas to Asia is also the most cost effective way to export Russian gas—while also providing for important regional development in Russia—and would in turn maximize revenues to Russia. In short, this is a true win-win scenario that will fundamentally change the energy relationship between Russia, China and South Korea, and provide greater energy security to the Asia-Pacific region.

CONCLUSION

Senator, in summary I would like to reiterate what I said at the start of my comments. I was invited here as the representative of a Russian company that understands the importance of engaging with key external audiences. As part of Russia's upcoming chairmanship of the G-8 next year, energy security will be high on the agenda and my comments here today are in support of these efforts. While East Siberia is a relatively unknown hydrocarbon region, I hope that I have demonstrated today how it has the potential over the coming years and decades to be an important source of supply to world markets if developed in a timely and efficient way.

Thank you for your time and attention.

Senator HAGEL. Mr. Ferguson, thank you.

Ms. Baran, welcome.

STATEMENT OF ZEYNO BARAN, DIRECTOR OF INTERNATIONAL SECURITY AND ENERGY PROGRAMS, THE NIXON CENTER, WASHINGTON, DC

Ms. BARAN. Thank you, Mr. Chairman, for the opportunity to appear before you today.

With your permission, I would like to submit my full statement and briefly highlight some of the key points.

Senator HAGEL. It will be included in the record. Please continue.

Ms. BARAN. Thank you.

The Eurasian region is strategically important for the U.S. in diversifying energy supplies away from reliance on Saudi Arabian and Persian Gulf energy resources. While the U.S. needs to ensure that these hydrocarbons are developed and that they reach world markets cheaply and safely, it also needs to make sure the coun-

tries in the region will reform internally. Otherwise, as we try to diversify away from dependence on Middle Eastern oil and gas, we will be creating a second Middle East.

Senator Hagel, as you well know, the U.S./Caspian Sea multiple pipeline strategy that was developed in the 1990s was fairly effective. Given changes across Eurasia, it is important to come up with a new framework for the broader Eurasian region.

Today, the biggest policy challenge for the U.S. is Russia. As other speakers mentioned, Russia is the world's largest gas exporter, and the second-largest oil exporter after Saudi Arabia. A Department of Energy report describes the Russian gas monopoly Gazprom as "one of Moscow's main foreign policy tools." Russia's use of energy as a foreign policy tool is the key point on which I would like to focus in my testimony.

Over the past several years, we have seen Putin dismantle Yukos, once the largest Russian oil company. Through state-owned Rosneft, the Kremlin has gradually consolidated the assets of Yukos under its control. Gazprom is also planning to buy the privately held Sibneft, Russia's fifth-largest oil producer, and enter the oil sector as well. Soon, Putin will be in direct control of the world's largest integrated oil and gas enterprise.

Adding to the strength of its monopolistic base at home has been the increase in oil prices. I believe as long as oil prices remain high, there is little incentive for the Russian Government to improve the investment climate and attract the billions of dollars of capital necessary to increase oil and gas production. But it is in America's and world energy security's interests for Russia to produce more oil and gas, and as we heard, it is important to act fast.

Early oil is running out, and huge investment and new technologies are needed to exploit the more remote and difficult fields, such as those in the West and East Siberia. Therefore, now is a good time to discuss a set of new initiatives and conditions, especially as Russia prepares to assume the presidency of the G-8. Russia has already stated that energy security will be its major theme. The U.S. needs to have its own energy security strategy as well.

The U.S. needs to engage with Russia on energy and ensure that it can purchase Russian oil and gas, including LNG, on a commercial basis. In order for this to occur, the U.S. and Russia need to work together to channel Gazprom and other oil and gas industry operators toward market-based and to mitigate monopolistic power.

The U.S. and the EU share similar interests in this area. In fact, their common position should be to try to break up the monopolies that control the oil, natural gas, and electricity industries across Europe and Eurasia. Not only are monopolies clearly bad for consumers, charging higher prices than would firms in a more competitive situation, but they also offer geostrategists in the Russian government an irresistible temptation to use energy supplies as leverage over Russia's neighbors.

Russia will need a lot of investment in new infrastructure in order to develop its major oil and gas fields. The U.S., together with the EU, could put together a large package with the involvement of international financial and lending institutions, as well as the Western and Russian private sector. But this package should

be made conditional on Russia improving the investment climate by promoting the rule of law and bringing transparency to governance. These forms will be required to make the major investments happen.

The U.S. needs to hold a transatlantic discussion to urge the Europeans not to cut any further long-term deals with Russian monopoly companies without any pressure to change; otherwise, Europeans will be hurting Russian energy development as well as their own long-term security.

Last December, the International Energy Agency expressed concern that the EU as a whole was becoming too reliant on Gazprom, which could use its power as a monopoly supplier to push up gas prices.

Despite its might, Gazprom is vulnerable. It is burdened with its obligation to supply Russian consumers with gas at below market prices. Gazprom needs to undertake significant corporate restructuring and reinvest in technology to increase its domestic production. Otherwise, in order to meet its supply commitments it will continue to acquire as much cheap gas in Central Asia as possible and sell that gas more expensively to Western markets.

Essentially, Gazprom's diplomacy is to press the countries around the Black Sea and the Caspian Sea region to agree to gas supply and transit agreements that satisfy the company's goals; specifically, keeping Central Asian gas prices at below world market rates, channeling such Central Asian gas to low-paying Russian consumers, and protecting its lucrative European markets by freezing out Central Asian suppliers. In short, Gazprom is trying to strengthen its monopoly power, which, in turn, will strengthen its leverage and that of the Russian Government over European gas consumers. Given the long-term implications of such a development, I strongly support the creation of a transatlantic initiative on Eurasian gas.

Mr. Chairman, the second key issue I would like to focus on is the Bosporus choke point and a new corporation possibility. As you, yourself, noted, the bulk of the Russian oil is transported to the Black Sea, and, from there via tankers to world markets. The increasing amount of oil being transported to the Black Sea has caused the dangerously narrow and overcrowded Bosporus to become a real choke point, stalling traffic in and out of this closed body of water. In severe weather conditions, delays can be up to 30 days, which is hugely costly for the oil companies. Once Russian and Kazakh oil is produced at full capacity and transported to the Black Sea, traffic through the straits will simply become paralyzed.

BTC will take some of this oil, but at least one more bypass pipeline is needed. Given the importance of uninterrupted oil exports to its economy, Russian is now actively looking for a second Bosporus bypass pipeline.

A win-win project on which the U.S. can work with Russia and Turkey is to encourage Turkey to provide incentives for companies to construct a new oil pipeline across Turkey to Ceyhan. With a capacity of one million barrels per day, such a pipeline would also increase Russian government tax revenues by five to six billion dollars per year. The U.S. could then focus oil exports into the Medi-

VerDate 11-MAY-2000 15:23 Apr 24, 2007 Jkt 000000 PO 00000 Frm 00057 Fmt 6633 Sfmt 6601 H:\DOCS\33726.TXT sfrela2 PsN: sfrela2

terranean at Ceyhan, thereby creating a sort of oil supermarket where traders buy Iraqi, Azeri, and Urals crude.

A third issue I would like to discuss is the implication of the Russian/Chinese energy partnership in light of the developments in and around Central Asia over the last several years.

While it is difficult to think of a long-lasting Russian/Chinese strategic partnership, at least for now both seem to have decided to cooperate to reduce the U.S. influence and presence in Central Asia through the framework of the Shanghai Cooperation Organization, or SCO. Last month, Russia and China held joint military exercises. Russia and India will hold their first-ever joint army drill next month. In 2006, all of the SCO members and observers are expected to participate in such military exercises.

While Russia, China, and India have expressed interest in, "maintaining stability in Central Asia and ensuring the stability of oil supplies," it makes one wonder if an anti-American alliance is in the making. Given the participation of Iran in the SCO, and its new president's preparedness for a confrontation with the U.S., it would be prudent for the U.S. to pay close attention to these developments in Central Asia.

Moreover, Russia, China, Iran, and India have also been increasing their energy cooperation. Given that all have state-owned monopoly companies, their business practices are different than those of Western companies. They are also able to offer government backing and non-transparent incentives Western companies are unable to offer. These developments are clearly not in the interests of the United States of America or of American companies.

Finally, a realistic approach to the region's hydrocarbon-rich, but democracy-poor countries such as Turkmenistan and Uzbekistan is needed in order for the West to make full use of alternative sources and transport routes in the region. We need to recognize that the U.S. democracy and freedom agenda is in direct opposition to that which the major SCO countries are preaching today. Therefore, the United States needs to develop new policies that better address the new challenges so that U.S. energy security can be strengthened and influenced, maintained, and deepened across Eurasia.

In this context, I would like to conclude by expressing my strong disagreement with the State Department's reported decision to move Central Asia out of the European Bureau and into the South Asian Bureau. The U.S. has been able to help the Caspian Sea region's energy projects and internal reform process by offering the region an East-West perspective. If the Central Asian countries are placed together with Afghanistan, Pakistan, and India, the chances of them coming under the SCO's influence will be significantly increased. Most importantly, Kazakhstan, which has long made clear its long-term vision to be closely engaged with Euroatlantic institutions, will be left with little option but to increase cooperation with its giant neighbors—Russia, Iran, and China. And such cooperation may come at the expense of energy cooperation with the U.S.

Therefore, I would like to conclude my presentation by urging you, Mr. Chairman, to carefully consider this pending reorganization of the U.S. Government as you deliberate on ways to increase U.S. energy security.

[The prepared statement of Ms. Baran follows:]

PREPARED STATEMENT OF ZEYNO BARAN, DIRECTOR, INTERNATIONAL SECURITY AND ENERGY PROGRAMS, THE NIXON CENTER

Thank you, Mr. Chairman and Members of the Committee, for the opportunity to appear before you to share with you my views on Eurasian energy dynamics and implications for U.S. energy security. I have closely followed Eurasian energy developments and U.S. policy toward the Caspian Sea Basin since the mid-1990s, and I am delighted to be part of this hearing today.

With its significant oil and gas reserves, especially in Russia and Kazakhstan, the Eurasian region is vitally important to the U.S. strategic effort to diversify energy supplies away from sources in the Middle East. The U.S. has a clear need to ensure that these supplies reach world markets cheaply and safely; however, it has an equal need to ensure internal reforms in the countries of the region. If it fails to do so, its effort to end its energy dependence on oil and gas from Saudi Arabia and the Persian Gulf will only result in the creation of a "second Middle East," with equally damaging consequences for U.S. interests.

A REVIEW OF U.S. CASPIAN ENERGY STRATEGY

In the 1990s, the U.S. developed a multiple pipeline policy to the oil and gas reserves of the Caspian Sea. The intention of this policy was to allow the production of the region's newly independent countries to reach Western markets without having to rely solely on Russia's transportation infrastructure. The U.S. strategy was founded on four major objectives. The first was to strengthen the independence and prosperity of the Caspian states through the revenues obtained from energy production. The second was to bolster the security of worldwide energy markets by ensuring the free flow of supplies unfettered by the policies of regional competitors and by geographic chokepoints such as the Bosporus. Third was to reestablish close economic linkages among the new states of the region in order to prevent or mitigate regional conflicts, while the final goal was to enhance overall business opportunities.

The U.S. extended its support to five major pipeline projects intended to achieve the above-mentioned goals. The most significant projects backed by the United States were the two pipelines along the so-called East-West Energy Corridor. First was the Baku-Tbilisi-Ceyhan (BTC) oil pipeline, which later this year will begin transporting Azerbaijani (and, in the future, Kazakhstani) oil through Georgia to Turkey's Mediterranean port of Ceyhan, and second was the South Caspian Gas Pipeline, which after its completion next year will transport Azerbaijani gas via Georgia into Turkey and onward to Western Europe.

U.S. support for these two projects did not reflect any anti-Russian agenda; it was instead intended to break the Russian monopoly on economic and political relations with Azerbaijan and Georgia so that these newly emerging states could freely develop their economic and foreign policies without fear of reprisal. The breaking of the Russian monopoly over the region's transportation system also helped Western companies operating in Azerbaijan and Kazakhstan. Once they were able to use the east-west pipelines and railroads to get their oil to markets, the companies were in a much stronger negotiating position vis-a-vis Russian corporations, who had become accustomed to charging high transport tariffs and gave preferential treatment to Russian companies. The availability of alternative routes provided security for Western companies operating in this region.

Despite the strong support of the U.S. Government, the east-west pipelines would never have materialized were it not for their commercial attractiveness. American involvement was certainly important to the oil companies and other investors, as it substantially reduced the political risk of these projects. However, U.S. support was not sufficient by itself to make the projects a reality; the international consortium responsible for the development of Azerbaijani oil and gas did not make the final decision on either pipeline until each state signed the internationally-binding agreements offering the investors the right incentives and the necessary legal protection.

Ultimately, U.S. Caspian policy envisioned these pipeline projects acting as engines of economic growth, providing an impetus for political and economic reform in both the producing and transit states. Indeed, to avoid the so-called "resource curse" experienced by many energy-rich countries in the developing world, Azerbaijan and Kazakhstan have created Oil Funds that are transparently managed and monitored by international financial institutions and NGOs. While the governments have used part of the money to improve the living conditions of the countries' poorest citizens, the bulk of the energy revenues have been set aside in investments for the future. Although the implementation of democratic and political reforms have been slow, both countries are heading toward critically important elections this fall,

and both leaderships seem committed to conducting elections that would meet international standards.

PUTIN AS THE CEO OF RUSSIAN OIL AND GAS

The U.S. vision in its Caspian energy strategy was the correct one, and many of its policy goals are still valid objectives. However, important developments require a new framework for the broader Eurasian region. Today the biggest policy challenge for the U.S. is Russia, which may well become a second Saudi Arabia in more than one sense. Indeed, Russia is already the world's largest gas exporter, and is the second-largest oil producer after Saudi Arabia. According to the Department of Energy, Russia has more than twice the gas reserves of the next country on the list—Iran. The report further states that the Russian gas monopoly Gazprom "holds nearly one-third of the world's natural gas reserves, produces nearly 90 percent of Russia's natural gas, and operates the country's natural gas pipeline network . . . Because exported Russian natural gas accounts for approximately 25 percent of Europe's demand for natural gas, Gazprom is also one of Moscow's main foreign policy tools." This is the key point I would like to focus on in the remainder of my testimony.

As you know, Presidents Bush and Putin concluded a Strategic Energy Partnership in 2002. While it is not clear at all what the U.S. and American companies got out of this partnership, it has been a rather lucrative one for the Russians. With little interference from the United States, Russia has constructed monopolistic oil and gas networks that now threaten the energy security of the entire region. Over the past several years we have seen Putin dismantle Yukos, once the largest Russian oil company, and through the state firm Rosneft gradually consolidate its assets under the Kremlin's control. Yuganskneftegas, the main production unit of Yukos, was effectively nationalized in December 2004; through the acquisition of other assets, Rosneft plans to overtake Lukoil as Russia's leading oil company by 2008. Gazprom is also planning to enter the oil sector and will soon by the privately held Sibneft, Russia's fifth-largest oil producer. Soon Putin will be in direct control of the world's largest integrated oil and gas enterprise.

It is not as if their intention to do so had been kept secret; in September 2003, Anatoly Chubais declared that "Russian business ought to be allowed to expand . . . with the aim of creating a liberal empire" in the former Soviet sphere. This sentiment was echoed at the highest levels of government; in 2004, then-energy minister (and later prime minister) Viktor Khristenko declared that Russia would act "more confident in pursuing its interests, while relying on [the] common resources" of the former Soviet states.

Adding to the strength of its monopolistic base at home and in its "near abroad" has been the increase in world oil prices. As I mentioned earlier, Russia is the world's second largest oil exporter after Saudi Arabia, and earned $34 billion from oil exports in the first half of 2005—almost 50 percent more than the same time last year. Over the last 5 years, Russian economic growth has been primarily fueled by energy exports, and the economy has become dangerously dependent on the energy sector. And as long as oil prices remain high, there is little incentive for the Russian government to improve the investment climate and attract the billions of dollars worth capital necessary to increase oil and gas production.

Instead, Russia can afford to focus on its long-term interests in the energy sector: strengthening Gazprom, both as a gas monopoly and soon as an oil giant; building up Rosneft through former Yukos assets; and maintaining the monopoly power of the state-owned pipeline operator Transneft. All these long-term goals dovetail perfectly with Russia's long-term geopolitical interests.

But it is in America's and world energy security's interest for Russia to produce more oil and gas, and it is important to act fast. Easy oil is running out and huge investment and new technologies are needed to exploit the more remote and difficult fields such as those in the West and East Siberia. Therefore now is a good time to discuss a set of new initiatives and conditions, especially as Russia moves to head the G-8. Russia has already stated that energy security will be its major theme; the U.S. needs to have its own energy security strategy as well.

Given that Russia wants to accede to the World Trade Organization (WTO) by end of the year, the U.S. has some leverage over Russia, but it is limited, especially given that there are other pressing issues in the bilateral agenda ranging from North Korea to Iran. Moreover, the U.S. needs to engage with Russia on energy and ensure that it can purchase Russian oil and gas, including liquidified natural gas (LNG) on a commercial basis. For the purchase to be on a commercial basis, the U.S. and Russia need to work together to channel Gazprom and other oil and gas industry operators toward operations on commercial basis and mitigate monopolistic

power. The U.S. and the EU share similar interests in this area, and in fact, their common position should be to try to break up the monopolies that control the oil, natural gas and electricity industries across Europe and Eurasia as monopolies are clearly bad for consumers, because they charge higher prices than in a more competitive situation, while offering geostrategists in the Russian Government an irresistible temptation to use energy supplies as leverage over Russia's neighbors.

Russia will need a lot of investment to develop new infrastructure needed to develop its major oil and gas fields. The U.S., together with the EU, could put together a large package—with the involvement of international financial and lending institutions, as well as the private sector (Western and Russian)—but make it conditional to Russia improving the investment climate—such as rule of law, transparency and governance, which will be required to make the major investment to happen.

The Russians have responded to competition, especially from the Caspian, and the U.S. therefore needs to maintain its focus on the Caspian. The monopoly control of Transneft over the oil pipelines is one of the major hindrances on Russian oil export. Transneft is creating massive bottleneck as it keeps pipelines under its control and does not let any other company develop pipelines. Russians provided good terms for the early oil pipeline from Baku to Novorrossisyk, mainly after the companies built another early oil pipeline from Baku to Supsa, the Georgian port on the Black Sea—concerned about the competition, the Russians then gave good terms to the companies for their route. Similarly, only after the Baku-Tbilisi-Ceyhan oil pipeline from the Caspian Sea to Turkish Mediterranean port of Ceyhan became real, the Russians became more constructive on the Caspian Pipeline Consortium to transport oil from Kazakhstan to Russian Black Sea port of Novorrossisyk. And now we have seen once Kazakhstan and China began work on their oil pipeline, Russia announced it would be building East Siberia with a spur to the Pacific.

TRANSATLANTIC INITIATIVE NEEDED ON GAS DIVERSIFICATION

The main leverage the U.S. would have is by working with the Europeans, and when they are talking about expanding Russian energy partnership, having them understand that increasing oil and gas supplies from Russia does not necessarily increase their energy security. What the Europeans need to do, given that they are the major market for Russian gas, is to say to Russia they will continue to purchase their gas only after Russia signs on to the Energy Charter Treaty, conducts competitive business, and offers the Central Asian oil and gas transiting Russian infrastructure the same terms.

The U.S. therefore needs to hold a transatlantic discussion to urge the Europeans not to cut any long term deals with Russian monopoly companies without any pressure to change—otherwise, they will be hurting Russian energy development and Europe's own long-term security. For example having Gazprom grow without any checks is not good for Europe's long term security; and in this context, the pipeline agreement between Russia and Germany that would cut out Poland and Ukraine is not a positive development as these two transit countries would not be able to pressure Gazprom to behave in a commercial manner.

Western and Central European countries are dependent on the Russian gas monopoly Gazprom as their sole or primary supplier of natural gas. Consequently, European energy utilities have vested commercial interests in maintaining cordial relations with Gazprom. For example, Germany's Ruhrgas is a major investor in Gazprom. Such relationships create a disincentive for European countries to take a firm line with Russia, even as Russia's policies undercut democracy at home and undermine the sovereignty and independence of its neighbors.

Gazprom has over the last years systematically increased its leverage over European energy markets by bolstering its monopolistic control of regional pipelines. Last December the International Energy Agency already expressed concern that the EU as a whole was becoming too reliant on Gazprom, which could use its power as a monopoly supplier to push up gas prices. Russia in the past withheld oil and gas supplies to pressure the Baltic States and has done the same in the South Caucasus. The fact that Russia has in the past been a reliable gas supplier to Western Europe is meaningless; Russia has never had the kind of power it has recently acquired and we simply have no precedent to help us determine how it will use this power.

Gazprom is not without vulnerability. It is burdened with its obligation to supply Russian consumers with gas at below-market prices. Gazprom needs to undertake significant corporate restructuring and reinvest into technology to increase its domestic production. Otherwise, to meet its supply demand, it will continue to try to acquire as much cheap gas in Central Asia as possible, and sell that gas more ex-

pensively to Western markets. In other words, Gazprom will need to rely on its monopoly control of regional pipelines to compel Turkmenistan, Uzbekistan, and Kazakhstan to continue to sell their gas at below-world prices. This has already made gas into a major geopolitical issue.

Gazprom's diplomacy is to press the countries around the Black and Caspian Seas to agree to gas supply and transit arrangements which satisfy the company's goals, specifically: keeping Central Asian gas prices at below-world-market rates; channeling such Central Asian gas to low-paying Russian customers; and protecting its lucrative European markets by freezing out Central Asian suppliers. In short, Gazprom is trying to strengthen its monopoly power, which in turn will strengthen its leverage (and that of the Russian government) over European gas consumers.

The Central Asian states must therefore settle for barter deals with lower-paying Russian customers, as Gazprom reserves for itself more lucrative deals with Western European consumers. And the West's challenge then is to prevent Gazprom from further strengthening its leverage over European markets by reducing its monopoly power and channeling it toward more market-based behavior.

THE BOSPORUS CHOKEPOINT AND NEW COOPERATION POSSIBILITY

The bulk of Russian oil is transported to the Black Sea and from there via tankers to world markets. The increasing amount of oil being transported to the Black Sea has caused the dangerously narrow and overcrowded Bosporus to become a chokepoint, stalling traffic in and out of this closed body of water. In severe weather conditions, delays can be up to 30 days, which is hugely costly for the oil companies. Once Russian oil companies reach their production targets, and once the Caspian Pipeline Consortium (CPC) begins to transport oil from Kazakhstan to the Black Sea at full capacity, traffic through the Straits will simply become paralyzed. Any incident that caused delays above and beyond those caused by traffic and weather would shut down the passageway for a considerable period, with devastating effects for all countries in the region, which rely on the Bosporus for transportation of imported goods and exported commodities.

The occurrence of such an incident, whether it is a major oil spill or a terrorist attack, is a serious possibility; the consequences of the latter are nearly unimaginable. If an LGP tanker is attacked while traversing the narrow Bosporus through a city of 14 million, over a million people could be killed. After all, Istanbul was already hit twice by terrorists in November 2003 and is a front-line state in the war against terror.

One way to make the Straits safer is to divert some of the oil traffic to bypass pipelines. Once the BTC pipeline opens later in the year, the bulk of Azerbaijani oil will reach world markets via Ceyhan. Other Caspian countries could also use this pipeline, but there still will be significant amount of Russian oil transported via tankers. Given the importance of uninterrupted oil exports to its economy, Russians are now actively looking for a second Bosporus bypass pipeline.

A win-win project the U.S. can work on with Russia and Turkey is to encourage Turkey to provide incentives for companies to construct of a new oil pipeline across Turkey to Ceyhan with capacity of 1 million barrels per day, which would also increase Russian government tax revenues by $5bn to $6bn a year. The U.S. could then focus oil exports into Mediterranean at Ceyhan, and thereby create a sort of oil "supermarket" where traders buy Iraq, Azeri or Urals oil.

IMPLICATIONS OF RUSSIAN-CHINESE ENERGY PARTNERSHIP

Ending months of speculation, Putin has confirmed earlier this month that Russia will build a multi-billion dollar oil pipeline across Siberia to first go to China's Daqing oil terminal and then be extended to Nahodka, the Pacific port from which oil can be shipped to Japan and to the U.S. In addition, Gazprom is in talks with CNPC to lay two pipelines to China. One would carry Russian gas west to join China's internal West-East pipeline and the other would head to the country's northwest direction; for each pipeline, the figures are 20–30 bcm per year.

The Russian-Chinese energy cooperation is extremely significant in light of the developments in and around Central Asia over the last several years. While it is difficult to fathom a long-lasting Russian-Chinese strategic partnership, at least for now both seem to have decided to cooperate to reduce the U.S. influence and presence in Central Asia. Benefiting from the growing concern over perceived U.S. support for the revolutions in Georgia, Ukraine and Kyrgyzstan, Russia and China used the July summit of the Shanghai Cooperation Organization (SCO) to make the first declaration against the presence of the U.S. military bases in the region. The SCO has been a weak regional alliance consisting of co-chairs Russia and China, and the Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan,

with Mongolia as the observer. In July, India, Iran and Pakistan joined as observers as well.

Last month Russia and China held a joint military exercise, Russia and India will hold their first ever joint army drill next month, and in 2006 all of the SCO members and observers are expected to participate in such military exercises. While Russia, China and India have expressed interest in "maintaining stability in Central Asia and ensuring the stability of oil supplies" it makes one wonder if an anti-American alliance is in the making. Given the participation of Iran, and its new president's preparedness for confrontation with the U.S., it would be prudent for the U.S. to play close attention to these developments in Central Asia.

Moreover, a realist approach to the region's hydrocarbon-rich but democracy-poor countries, such as Turkmenistan and Uzbekistan, is needed in order for the West to make full use of the alternative sources and transport routes in the region. The United States needs to develop new policies that better address the new challenges, so that U.S. energy security can be strengthened and influence maintained and deepened across Eurasia.

CONCLUSIONS AND RECOMMENDATIONS

I hope I was able to draw a picture in which the Kremlin knows that control over the Eurasian energy infrastructure, especially its gas pipelines, is its most effective foreign policy tool today. Given that Gazprom will for the foreseeable future be the leading gas supply provider to the EU, the U.S. needs to urge the European gas consumers, as well as transit states, to form a transparent, market-based, commercial relationship with Gazprom. Forging such a relationship requires all these states to strive for increased competition in gas supply and transit arrangements, and to circumscribe Gazprom's monopoly power.

The U.S. can also work with the countries of the former Soviet Union for them to pay upfront for the gas they take from Gazprom and charge Russia for transit services, thus bringing full transparency to the gas relationship. They also need to make sure to not collect any further debt to Russian companies that could force them to reach debt-for-equity deals. The South Caucasus countries can already work with the EU and the Energy Charter to adopt European standards in these dealings; Russia needs to join the Energy Charter as well.

The U.S. needs to recognize that there is a new alliance taking place that brings countries of the SCO closer in cooperating on political, military and economic areas. Russia, China, Iran and India have also been increasing their energy cooperation-given that all have state-owned and monopoly companies, their business practices are different than those of the West. Moreover, they are able to offer government backing and non-transparent incentives Western companies are not able to offer. These developments are neither in the interest of American companies nor in line with U.S. stated Caspian Sea region policies I discussed earlier.

Moreover, U.S. democracy and freedom agenda is in direct opposition to what the major SCO countries are preaching today. While the U.S. may be limited in its ability to influence the region's developments, it nonetheless needs to be consistent in its promotion of internal reform and democratic change. While criticizing Uzbekistan or Turkmenistan for their democratic short-falls, the U.S. and the EU cannot turn a blind eye to developments in Russia in the name of "energy security". At the same time, it is important to be realistic about the implications of pushing the freedom and democracy agenda in a region where other major powers are vying for influence by promising stability instead.

In this context, I would like to express my strong disagreement with the State Department's reported decision to move Central Asia out of the European Bureau and into the South Asian Bureau. The U.S. has been able to help the Caspian Sea region's energy projects and internal reform process by offering the region an East-West perspective. If the Central Asian countries are put together with Afghanistan, Pakistan and India, the chances of them coming under the SCO's influence will be significantly increased.

If this decision is not reversible, then it would be important to assess the signals the U.S. would be sending to the leaderships and the people of Central Asia. Such major reorganization would also require a new Eurasian energy strategy, as the strategy of the 1990s looking East-West would effectively come to an end. A new Central Asian energy strategy would then be devised to integrate the infrastructures of Central Asia and countries like Afghanistan, Pakistan and India. For example the U.S. would then need to strongly support the proposal to get Central Asian gas to India to block Iranian gas. On the negative side, Kazakhstan, which has long made clear its long-term vision to be closely engaged with Euro-Atlantic institutions, will be left with little option but to increase cooperation with its giant neighbors

Russia and China, and such cooperation may come at the expense of energy cooperation with the U.S. I therefore would like to conclude my presentation by urging you Mr. Chairman and Members of the Committee to carefully consider this pending reorganization of the U.S. Government as you deliberate on ways to increase U.S. energy security.

Senator HAGEL. Thank you, Ms. Baran, very much for your comments.

We will get back to each of you, after we hear from Dr. Klare, with some question. So, thank you, again.

Dr. Klare, welcome.

STATEMENT OF DR. MICHAEL T. KLARE, PROFESSOR OF PEACE AND WORLD SECURITY STUDIES, HAMPSHIRE COLLEGE, AMHERST, MA

Dr. KLARE. Thank you very much, Senator. And I want to thank you for giving me this opportunity to appear before you today and also to commend you for holding hearings on such an important and, I would say, not well understood topic.

I will read from my comments. I hope they could be included in the record.

The United States stands today at a critical juncture in its energy policy, particularly with respect to petroleum and natural gas. The demand for energy in this country has been rising steadily over the past few years, because of economic growth and the vital role of energy and transportation. At the same time, many other countries, both developed and developing, have also experienced an increased need for energy.

Satisfying these huge increases in energy demand will place enormous pressure on the global energy industry to satisfy these needs. Fortunately, the industry has, until now, succeeded in satisfying the world's ever-increasing thirst for petroleum products. But now there is reason to doubt whether the steady growth in petroleum output can be sustained in the decades to come, calling into question many assumptions about national energy policy.

Experts in the field have long been aware of this worry, but the devastation wrought by Hurricanes Katrina and Rita have brought this into public consciousness. Katrina was significant for two reasons. First, because it demonstrated just how tight worldwide supplies of oil have become, and secondly because it exposed the vulnerability of drilling operations in the deep waters of the Gulf of Mexico, the only oil-producing area of the United States to experience an increase in output over the past few years. While we can expect the full recovery of most onshore energy operations and near-shore operations in these affected areas, it's not yet evident that we could expect the full recovery of deep offshore operations in the Gulf of Mexico, and this could entail a significant increase in U.S. reliance on imports in the years ahead. And, of course, U.S. reliance on imports have been growing steadily, passing the 50 percent mark in 1998, now up to about 55 percent, and expected to reach 66 percent by 2020.

Where will this additional imported oil come from? It would be nice to think that all of it could come from friendly, stable countries in North America, but this is not likely to prove the case. As America's dependence on imports grows, more and more of this oil will have to come from the developing world and transitional states

of the former Soviet Union, many of them prey to chronic instability.

Exactly which of these countries will prove to be our major suppliers at any given moment of time cannot be pre-determined, but we can expect growing reliance on supplies from the Middle East, the former Soviet Union, the Caspian, West Africa, and Latin America. It's the stated goal of the Bush Administration to try to maximize America's access to these foreign suppliers, and this is the principal objective of the National Energy Policy (in its foreign policy implications) adopted in 2001.

But, despite the efforts of the Administration to increase access to foreign oil, and the evident desire of many of these producers to expand their output, numerous obstacles have arisen to frustrate plans to boost their production. These range from internal unrest and ethnic violence to endemic corruption, managerial incompetence, political wrangling among competing power brokers, terrorism, insufficient investment funds, the faster-than-expected depletion of some older fields, and disappointing drilling results in some newly developed areas.

It's possible, of course, to attribute these problems to unexpected, but temporary, impediments that will disappear in the course of time, allowing for increased production in the future, but a prudent policymaker would have to conclude that something deeper and more systemic is at work precluding large-scale gains in the future.

What is this systemic situation we face? In my testimony, I'll briefly address two problems.

First, a gradual slowdown in the growth of worldwide petroleum output as large, easy to develop fields in more accessible areas go into decline and a bigger share of global output is derived from smaller, deeper, more scattered fields in less accessible areas.

And, second, the natural propensity for oil production in the developing and transitional countries to invite internal unrest and conflict over the allocation of petroleum revenues.

Let me speak briefly about each of these.

First, the growing reliance on less productive, less accessible fields. This is the predictable trajectory of any resource extraction process, in that entrepreneurs will always seek to develop the largest and most accessible sources of supply first, and leave the less attractive sources for later. Needless to say, extraction in these more remote and unattractive areas entails far more demanding and costly technologies than extracting from near-to-hand sites. It also exposes drilling and delivery operations to more extreme challenges of climate and weather, a troubling reality that we now see with greater clarity as a result of Hurricanes Katrina and Rita.

The problems raised by our growing reliance on remote, hard-to-reach reservoirs will persist whether or not we have reached the point of peak worldwide production, as claimed by some. I know that everyone in this room is familiar with the discussion about peak oil, and I won't elaborate on it here. But, while we cannot determine with any certainty that we are at or near the moment of peak petroleum production, I do think we can state with some assurance that the world's remaining oil, however great its extent, exists in fields that lie deeper underground, farther off shore, dispersed in smaller pockets, and located in more extreme climates

than many of the fields now in production. We can still get at this oil and bring it to market, but the costs of doing so will rise, and the net output will not be as great as from earlier fields.

And the development of these remote fields also raise significant environmental concerns, particularly when they entail the construction of long pipelines through environmentally sensitive areas.

The second factor I'll mention briefly is the propensity for oil production in developing countries or transitional societies to invite internal conflict over the allocation of petroleum revenues.

This danger arises most frequently in countries where there are few other significant sources of wealth and where the state owns the rights to underground oil and mineral resource reserves. When these conditions prevail, there is a powerful incentive for avaricious cliques and individuals to gain control of the national government and its resources assets, and, once in power, to retain control for as long as possible, through any means necessary. The natural result is a persistent tendency towards corruption, cronyism, and authoritarianism in all such "petro states," as they have been called. And because the potentates who rule these states are generally reluctant to risk their continued tenure and oil wealth through holding fair elections, the sole option for those who seek a change in government is often through assassination, coup d'etat, terrorism, or armed rebellion. And it's these sort of upheavals that periodically result in the disruption of oil deliveries from key producing areas.

Now, both of these points apply, I believe, with particular vigor to the situation in Eurasia. Eurasia was, of course, one of the main early sites of oil production. Baku was once one of the world's leading centers of oil production. And, in the Soviet era, West Siberia became a major source of energy. But today the onshore fields around Baku are largely depleted, and many of the older fields in Western Siberia are in decline. Any hope of boosting production in Russian and the newly independent republics of the Caspian Sea will, therefore, require the development of harder-to-reach fields in Eastern Siberia and offshore areas. This is an inherently demanding endeavor requiring utilization of advanced technology in the construction of new drilling rigs, pumping stations, and pipelines.

A similar picture holds for the development of natural gas. As Mr. Ferguson indicated, the gas fields in West Siberia are now in decline and we increasingly will have to rely on offshore fields off of Sakhalin and in the Caspian.

Given the difficulties involved in tapping into this oil and gas, it's not surprising that many of these projects have run into substantial difficulties. The estimated cost of the Sakhalin II natural gas project, for example, has doubled over the past few years, from $10 to $20 billion, causing a delay in the startup of export. Development of the giant Kashagan field, which we also heard about, has also run into difficulty, driving up costs and delaying the start of operations.

I won't go into the problems arising from the distribution of these fields through the construction of long pipelines, because this has been addressed, but I do want to point out that these pipelines often go through areas of ethnic unrest, of sites of terrorist activity, and protecting them will become a continuous struggle in the years

ahead, and could entail the United States more deeply in military affairs in those parts of the world, which I think we should look at with great caution.

In addition, many of these remote and offshore projects entail significant environmental dangers. For example, scientists have concluded that construction of the Sakhalin II project poses a significant risk to the survival of the western North Pacific gray whale, a highly endangered species. Much concern has also been voiced about the environmental impact of offshore oil and gas production in the Caspian Sea, the habitat of 400 unique species.

Turning now to the second factor I discussed, the propensity towards authoritarianism and political disorder, we can see signs of this in Eurasia, as well. In Russia, the central government, headed by President Putin, has moved aggressively to extend state control over the nation's energy industry, as we heard from the last speaker. These moves have been accompanied by the arrest of top leaders of Yukos and in other maneuvers that appear to be of dubious legality, giving a greater concentration of power over energy in the President's hands. These moves, even if not strictly illegal, have been widely viewed as part of a larger trend towards the concentration of economic and political power in the President's hands, reversing progress towards democratization in Russia.

Kazakhstan and Azerbaijan have also witnessed the concentration of power in the hands of their presidents, Ilham Aliyev and Nursultan Nazarbaev, respectively. While both have staged elections to convey a veil of legitimacy over their continued rule, neither has permitted a free press, free speech, or the unimpeded existence of opposition parties. Human rights observors in both countries have reported repeated jailings and persecution of independent journalists and opposition political figures. Corruption is also said to be widespread, with friends and relatives of the ruling elite favored with government contracts, while much of the population lives in poverty.

For the present, leaders of both Azerbaijan and Kazakhstan appear to be in firm control of their countries. But just because there are no public expressions of dissent does not mean that there are not reservoirs, deep reservoirs, of discontent in these countries. As recent developments in Kyrgyzstan and Uzbekistan show, powerful anti-government currents can be found just below the surface of allowable public discourse. And what's particularly worrisome about this situation is that many of those who oppose the authoritarian rule in these countries are losing faith in the promise of democracy and turning, instead, to radical Islamic movements for inspiration and leadership.

Let me conclude, then, with just a few observations on the policy implications of this.

First, I believe that we have passed the point at which it is possible to assume that, even with increased effort and investment, the global energy industry will be able to continue expanding petroleum output in tandem with the ever-growing demand expected from the world's developed and developing countries. Total oil output may rise for some years to come, but it will never fully satisfy the world's thirst for more petroleum. This means, I believe, that energy prices will remain high, by historical standards, and that

we will be at constant risk of energy shortages and price hikes from major storms and political upheavals in the oil-producing countries.

There simply is no supply-side solution in sight that can save us from this predicament. Only by curbing our demand can we ease the pressure on oil supplies. Therefore, energy conservation and the development of alternative fuels must constitute the principal thrust of any new national energy policy.

And, finally, I think it would be a terrible mistake for the United States Government to play a conspicuous and insertive role in promoting extensive involvement of American companies in the extraction of Eurasia's oil and natural gas. It's one thing for these private firms to employ the normal channels of international commerce to gain access to Eurasian supplies, but another thing altogether for the U.S. Government to be seen as spearheading such efforts, particularly when this entails the establishment of close ties with powerful elite who control these countries, especially the Caspian countries. Whatever our actual intent, these efforts will be viewed by dissidents in those countries as conferring American approval on the regimes in power, thereby making us, the United States, targets of the dissidents' wrath.

None of the Caspian region's regimes is entirely stable, and, when and if they are swept away by opposition forces, we do not want to be viewed as their evil twins, and so be made persona non grata, as occurred in Iran after the overthrow of the shah in 1980. We could certainly encourage U.S. energy firms to do what they are good at, which is seeking out and producing energy, but we should do nothing to fan suspicions that they are essentially tools of the American government.

I hope that you find my observations useful. Thank you for allowing me to testify.

[The prepared statement of Dr. Klare follows:]

PREPARED STATEMENT OF DR. MICHAEL T. KLARE, PROFESSOR OF PEACE AND WORLD SECURITY STUDIES, HAMPSHIRE COLLEGE, AMHERST, MA

Distinguished Members of the Subcommittee:

Thank you for inviting me to address the question of energy supplies in Eurasia and their implications for U.S. energy security. It is a great honor to appear before this distinguished body. Senator Hagel has performed a valuable national service by focusing attention on the vital issue of energy security, and I hope that my remarks will shed some light on this important topic.

The United States now stands at a critical juncture in the evolution of its energy policy, particularly with respect to petroleum consumption. The demand for energy in this country has been rising steadily over the past years as a result of continued economic growth and the vital role of air, ground, and sea transportation in all aspects of economic activity. According to the U.S. Department of Energy (DoE), total energy use in the United States grew by 16 percent between 1990 and 2002, and is projected to grow by another 35 percent between 2002 and 2025. At the same time, many other countries, both developed and developing, have also experienced an increased need for energy, pushing total world energy use from 348 quadrillion BTUs in 1990 to a projected 645 quadrillion BTUs in 2025, an increase of 85 percent.[1]

The growing worldwide need for primary energy has been translated into increased demand for every conceivable source of energy. This is especially true for petroleum, the world's leading source of primary energy, and for natural gas, the

[1] 1. U.S. Department of Energy, Energy Information Administration (DoE/EIA), International Energy Outlook 2005, Table A1.

fastest growing source of energy. According to the DoE, global consumption of petroleum is projected to rise by 41 percent between 2002 and 2025, from 78.2 to 119.2 million barrel per day (mbd), while consumption of natural gas will rise by 69 percent between 2002 and 2025, from 92.2 to 156.2 trillion cubic feet. Petroleum consumption in the United States—the world's leading consumer of oil—is projected to rise by comparable percentages, from 17.0 mbd in 2002 to 27.3 mbd in 2025.[2]

Satisfying these huge increases in demand will place enormous pressure on the global energy industry. Fortunately for all of us, this industry has, until now, succeeded in satisfying the world's ever-increasing thirst for petroleum products. While there have been some notable bumps along the way—most notably in 1973–74, during the Arab oil embargo, and again in 1979–80, following the Islamic Revolution in Iran—global oil production has generally kept pace with rising worldwide demand. This has been made possible by the development of new fields in such areas as the North Slope of Alaska, the North Sea, the coastal waters of Africa, and the former Soviet Union, as well as through the more efficient exploitation of existing fields. But now there is reason to doubt whether this steady growth in petroleum output can be sustained in the decades to come, calling into question many assumptions about national energy policy.

Experts in the field have been aware of this concern for some time, but the devastation wrought by Hurricane Katrina has brought this into the public consciousness. Katrina was significant for two reasons: first, because it demonstrated just how tight world supplies of petroleum have become in recent years and how little room for maneuver we have in times of crisis; and second, because it exposed the vulnerability of drilling operations in the deep waters of the Gulf of Mexico, the only major oil-producing area of the territorial United States to experience an increase in output over the past few years. While we can expect the full recovery of most onshore energy operations in the affected areas, it is not yet evident that we can expect the full recovery of deep offshore operations, at least not in the immediate future. This could entail a significant reduction in domestic crude production, with an accompanying increase in reliance on imports. Hence the importance and timeliness of this hearing.

As the Members of the Subcommittee are well aware, there has been a steady increase in U.S. dependence on imported petroleum over the past few decades. As recently as 1985, we produced over 70 percent of the oil we consumed. But demand has increased while domestic production has declined, and so the extent of our reliance on imports has steadily grown. We crossed the 50 percent threshold of import dependence in 1998, and, before Hurricane Katrina, were projected to reach 56 percent in 2010 and 66 percent in 2020.[3] How Katrina will affect these projections cannot be determined at this time, but we should expect a more rapid increase in the dependency rate.

Where will this additional petroleum come from? It would be comforting to think that it will all be derived from Canada, Mexico, and other nearby, friendly suppliers, but this is not likely to prove the case. As America's dependence on imports rises, more and more of this foreign oil will have to be obtained from distant producers in the developing world, many of them prey to chronic instability. Exactly which of these countries will prove to be our major suppliers at any given moment in time cannot, of course, be determined in advance, but the DoE does give us a good idea of what the options will look like: according to its most recent projections, 32 percent of world petroleum output in 2025 will be accounted for by the Persian Gulf producers, another 13 percent by African producers, 14 percent by producers in Latin America, and 14 percent by the nations of the former Soviet Union.[4] Whatever the relative share of U.S. supplies provided by these countries at any given moment, all are likely to figure prominently in U.S. foreign energy policy.

It is the stated goal of the Bush administration to diversify the foreign sources of American petroleum supplies and, to the degree possible, to enhance America's access to all of these potential suppliers. These are among the major objectives of the "National Energy Policy" (NEP) adopted by the administration in the spring of 2001 and announced by the President on May 17, 2001. I need not summarize these proposals in detail, but suffice to say that the NEP called on senior government officials to do everything in their power to encourage and assist the leaders of the major foreign oil producers both to increase their country's output and to make this added energy available to consumers in the United States. And, to the degree that they have been able to do so, these officials have endeavored to achieve these objectives.

---

[2] Ibid., Table A4.
[3] Ibid., Tables A4 and E1.
[4] Ibid., Table R1.

But despite these efforts, and the evident desire of many foreign oil producers to expand their output, numerous obstacles have arisen to frustrate plans their efforts to boost production. These range from internal unrest and ethic violence to endemic corruption and managerial incompetence, political wrangling among competing power brokers, terrorist strikes, insufficient investment funds, the faster-than-expected depletion of some older fields, and disappointing drilling results in some newly developed fields.

To lend some specificity to this observation, consider the following. In its 2002 projections of future oil output, the Department of Energy predicted that the combined output of Indonesia, Iraq, Nigeria, Saudi Arabia, and Venezuela would total 24.1 million barrels per day in 2005.[5] However, according to the most recent DoE "country analysis briefs" on these countries, their combined output during the past year or so has averaged only about 18.9 mbd, a shortfall of over 5 mbd. This discrepancy is not due to faulty assumptions on the part of the DoE, but rather to the fact that oil officials in those countries have encountered unexpected impediments to their efforts to boost production. These have included the bitter insurgency in Iraq, political upheaval in Venezuela, ethnic violence in Nigeria, organizational limitations in Indonesia, and what appears to be faster-than expected depletion of large fields in Saudi Arabia. (I say "appears to be" because Saudi officials have not released field-by-field data on the output of their major reservoirs, frustrating efforts by outside observers such as Matthew Simmons of Simmons & Co. International to gauge the country's long-term production capacity.[6])

It is possible, of course, to attribute these shortfalls to unexpected but temporary impediments that will disappear in the course of time, allowing for greatly increased production rates in the years ahead. But a prudent policymaker would have to conclude that something deeper and more systemic is at work, precluding large-scale gains in the future. This assessment, I contend, is the only sensible way to proceed.

What, then, is the systemic situation we face? It is too early to answer this question with any degree of certainty, but I think we can attribute these problems to a number of critical factors. I will address two of these in my testimony: first, a gradual slowdown in the growth of worldwide petroleum output as large, easy-to-develop fields in more accessible areas go into decline and a bigger share of global output is derived from smaller, deeper, more scattered fields in less accessible areas; and second, the natural propensity for oil production in developing countries to invite internal conflict over the allocation of petroleum revenues. I will discuss each of these briefly.

First, growing reliance on less productive, less accessible fields. This is the predictable trajectory of any resource-extraction process, in that entrepreneurs will always seek to develop the largest and most accessible sources of supply first and leave the less attractive sources for later. This trajectory is plainly evident in the case of petroleum. For example, in the United States, the first fields to be developed were in readily accessible, onshore areas of Pennsylvania, Texas, and Oklahoma; only later, as these onshore fields in the Lower-48 went into decline, did the oil companies invest in the extraction of oil from more remote, difficult-to-reach fields in Alaska and the deep waters of the Gulf of Mexico. Needless to say, extraction in these remote areas entails far more demanding and costly technologies than extraction from onshore sites; it also exposes drilling and delivery operations to more extreme challenges of climate and weather—a troubling reality that we now see with greater clarity in the Gulf as a result of Hurricanes Ivan, Katrina, and Rita.

The problems raised by our growing reliance on remote, hard-to-reach reservoirs will persist whether or not we have reached the point of "peak" worldwide petroleum output, as claimed by some. I know that all in this room are familiar with this discussion, and so it need not be elaborated upon here. In any case, there is no way to predict the moment of peak production in advance—we will only know of its occurrence after world output has begun a long-term decline. But while we cannot determine with any certainty that we are at or near the moment of peak production, I do think that we can state with some assurance that the world's remaining oil—however great its extent—exists in fields that lie deeper underground, farther offshore, dispersed in smaller pockets, and located in more extreme climates than many of the major fields now in production. We can still get at this oil and bring it to market, but the costs of doing so will rise and the net output from any given reservoir is likely to be less than that obtained from the large, prolific fields that have satisfied our petroleum needs in the past. Development of these remote

[5] U.S. Department of Energy, Energy Information Administration (DoE/EIA), International Energy Outlook 2002, Table D1.

[6] For discussion of this point, see Matthew Simmons, Twilight in the Desert (Hoboken: Wiley, 2005).

fields will also raise significant environmental concerns, particularly when they entail the construction of long pipelines through environmentally sensitive areas, such as Arctic regions or tropical forests.

The second factor that deserves attention is the propensity for oil production in developing world or transitional societies to invite internal conflict over the allocation of petroleum revenues. This danger arises most frequently in countries where there are no other significant sources of wealth and where the state (rather than private landowners) owns the rights to underground oil and mineral resources. When these conditions prevail, there is a powerful incentive for avaricious cliques and individuals to gain control of the national government—thereby gaining control over the oil sector and all the revenues this entails—and, once in power, to retain control for as long as possible through any means necessary. The natural result is a persistent tendency toward corruption, cronyism, and authoritarianism in all such "petro-states," as they have been called.[7] Because the potentates who rule these states are generally reluctant to risk their continued tenure by allowing generally fair elections, the sole option for those who seek to remove the prevailing regime or to install themselves in its place is through assassination, coup d'etat, or armed rebellion. It is these sorts of upheavals that periodically result in the disruption of oil deliveries from key producing states, adding to the pressure on global supplies.

THE SITUATION IN EURASIA

Both of these factors—our growing reliance on hard-to-get-to oil and the propensity of petro-states to invite internal political disorder—apply with particular vigor to Eurasia.

Eurasia was, of course, one of the first areas of the world to harbor large-scale petroleum extraction. During the Czarist era, the area around Baku, in what is now Azerbaijan, was one of the world's major centers of production, supplying much of Europe in the years leading up to the First World War. Later, during the Soviet era, large fields were developed in Western Siberia, between the Ural Mountains and the Central Siberian Plateau, and in western Kazakhstan. In the 1980s, production in these areas made the Soviet Union a major world oil producer, pushing its total output to a record of 12.8 mbd in 1988. All of these onshore fields were connected to an elaborate system of pipelines, permitting the delivery of crude oil to refineries and markets throughout the Soviet space and to friendly clients in Eastern Europe. Soviet energy officials were aware that additional petroleum reserves were located in Eastern Siberia and in offshore areas of the Caspian Sea and Sakhalin Island, but lacked the inclination and know-how to develop these hard-to-reach reserves, and so concentrated on the intensive exploitation of the more accessible, onshore fields.

Today, the onshore fields around Baku are largely depleted and many older fields in Western Siberia are in decline. Any hope of boosting net production in Russia and the newly independent republics of the Caspian Sea basin will, therefore, require the development of Eastern Siberian and offshore fields. This is an inherently demanding endeavor, requiring the utilization of advanced technology and the construction of new drilling rigs, pumping stations, and pipelines. Even with massive involvement and investment by Western firms, the exploitation of these fields will prove costly and arduous.

A similar picture holds for natural gas production in the region. Russia harbors the world's largest reserves of natural gas, and the Central Asian republics of Turkmenistan and Uzbekistan also possess substantial supplies. But the core of Russian gas production is concentrated in three giant fields in Western Siberia—Urengoy, Yamburg, and Medvezh'ye—and these fields are now in decline and Gazprom, the state gas monopoly, predicts steep declines in natural gas output between 2005 and 2020.[8] Once again, significant supplies are known to lie in offshore fields in the Caspian and off Sakhalin. But obtaining this gas presents similar challenges to the production of offshore oil in these areas.

Given the difficulties involved in tapping into these hard-to-get-at supplies, it should not be surprising that the large consortia established to accomplish this feat have run into substantial difficulties. The estimated cost of the Sakhalin II natural gas project, for example, has doubled over the past few years, from $10 to $20 bil-

[7] For a thorough analysis of this phenomenon, see Terry Lynn Karl, The Paradox of Plenty (Berkeley: University of California Press, 1997).

[8] DoE/EIA, "Russia," Country Analysis Brief, February 2005, electronic doc. Accessed at www.eia.doe.gov/emeu/cabs/russia.html.

lion, causing a delay in the initial startup of export operations.[9] Development of the giant Kashagan oil and gas field in Kazakhstan's sector of the Caspian Sea has also run into difficulty, driving costs up and delaying the start of operations. According to the DoE, "Kashagan contains a high proportion of natural gas under very high pressure, the oil contains large quantities of sulphur, and the offshore platforms require construction that can withstand the extreme weather fluctuations of the northern Caspian Sea area." These difficulties have discouraged some of the project's initial investors, forcing a restructuring of the operating consortium and delaying the field's expected online date beyond 2008.[10] Problems have also emerged in Azerbaijan's sector of the Caspian Sea. Although some offshore projects have proved successful, notably the Azeri, Chirag, Deepwater Gunashli (ACG) structure, others have proved less so. "Besides the ACG project," the DoE noted recently, "many of Azerbaijan's offshore prospects have been relatively disappointing on contrast to the high expectations for the Caspian Sea region in the 1990s." [11]

I will not use this occasion to discuss the problems arising from the transportation of oil and gas from the landlocked Caspian to markets around the world, as I believe these problems are well understood. Nonetheless, it is important to indicate that the construction of these pipelines—and their protection from terrorist and insurgent attack—remains a significant challenge to the global energy industry and participating nations. Even if new oil and gas projects in the Caspian region come on line, it should not be assumed that the resulting output can be safely and economically delivered to markets around the world.

In addition, many of these remote and offshore projects entail significant environmental dangers. For example, a scientific panel convened by the World Conservation Union concluded that the Sakhalin II project poses a significant risk to the survival of the Western North Pacific Gray Whale, a highly endangered species. "It is particularly unfortunate that the only known foraging grounds for the [surviving Gray Whale population] lie along the northeastern coast of Sakhalin Island, where existing and planned large-scale offshore oil and gas activities pose potentially catastrophic threats to the population." [12] Much concern has also been voiced over the environmental impact of offshore oil and gas production in the Caspian Sea, the habitat of over 400 species unique to the region. Likewise, environmentalists in Georgia have expressed concern that possible leaks from the Baku-Tbilisi-Ceyhan (BRC) pipeline could endanger the famed mineral waters of the Borjomi Valley.[13]

Turning now to the second factor I discussed earlier—the propensity toward authoritarianism and political disorder in oil-producing states of the developing world—we can also detect signs of this in the former Soviet space. This is not the place for a detailed analysis of political conditions in Russia and the Caspian republics, but I believe that the corrosive effects of petroleum politics have taken root there.

In Russia, the central government, headed by President Vladimir Putin, has moved aggressively to extend state control over the nation's energy industry, using questionable legal tactics in the process. Most notable, of course, is the use of tax laws to assert state control over OAO Yukos, once the nation's top oil producer. These moves have been accompanied by the arrest of CEO Mikhail Khodorkovsky and other top Yukos officers on charges of fraud and tax evasion. Putin has also presided over the merger of state-owned Rosneft and the natural gas giant Gazprom, producing a state-controlled energy behemoth with substantial interests in oil, natural gas, and nuclear power. These moves, while not strictly illegal, have been widely viewed as part of a larger trend toward the concentration of economic and political power in Putin's hands, reversing progress toward democratization in Russia.

Kazakhstan and Azerbaijan have also witnessed the concentration of power in the hands of their presidents, Ilham Aliyev and Nursultan Nazarbaev, respectively. Though both have staged elections to convey a veil of legitimacy over their continued rule, neither has permitted a free press or the unimpeded existence of opposition parties. The election that brought Ilham Aliyev to power in October 2003 (succeeding his father, Heyday Aliyev) was reportedly tainted by widespread fraud and

---

[9] "Sakhalin II Project's Phase 2 Cost Estimate Rising," Oil and Gas Journal, July 25, 2005, p.26.

[10] DoE/EIA, "Kazakhstan," Country Analysis Brief, July 2005, electronic doc. Accessed at www.eia.doe.gov/emeu/cabs/kazak.html.

[11] DoE/EIA, "Azerbaijan," Country Analysis Brief, June 2005, electronic doc. Accessed at www.eia.doe.gov/emeu/cabs/azerbjan.html

[12] World Conservation Union, Impacts of Sakhalin II Phase 2 on Western North Pacific Gray Whales and Related Biodiversity, Report of the Independent Scientific Panel, n.d.

[13] DoE/EIA, "Caspian Sea Region: Environmental Issues," February 2003, electronic doc. Accessed at www.eia.doe.gov/emeu/cabs/caspenv.html.

the use of violence, and the 1999 re-election of Nazarbaev has been stained by similar tactics. As in Azerbaijan, a ruling dynasty of sorts is being established, with Dariga Nazarbaev, the president's daughter, the heir apparent. Human rights observers in both countries have reported repeated jailings and persecution of independent journalists and opposition political figures. Corruption is also said to be widespread, with friends and relatives of the ruling elite being favored with government contracts while much of the population lives in dire poverty.

For the present, the leaders of both Azerbaijan and Kazakhstan appear to be in firm control of their countries. But just because there are no public expressions of dissent—those who attempt to voice public disagreement are likely to be jailed or worse—does not mean that there are no reservoirs of discontent. As recent developments in Kyrgyzstan and Uzbekistan demonstrate, powerful anti-government currents can be found just below the surface of allowable public discourse. What is particularly worrisome about this situation is that many of those who oppose their authoritarian rulers are losing faith in the promise of democracy and are turning to radical Islamic movements for inspiration and leadership. We cannot be sure if this was a factor in the armed insurrection in Andizhan in Uzbekistan on May 12–13, but there is reason to suspect the growing influence in that country of Hizb-ut Tahrir and other radical fundamentalist organizations.[14]

IMPLICATIONS FOR POLICY

There is much to consider in all of this that bears on U.S. energy security and American foreign policy. I recognize that the actual making of policy is the prerogative of our elected leaders, but I would like to make a few comments for the record.

Just as I see two primary factors that underlie the strained energy situation we now find ourselves in, there are two principal policy-related conclusions I would derive from this analysis:

First, I believe that we have passed the point at which it is possible to assume that, with increased effort and investment, the global energy industry will be able to continue expanding petroleum output in tandem with the ever growing demand expected from the world's developed and developing countries. Total oil output may continue to rise for some years to come, but it will never fully satisfy the world's thirst for more petroleum. This means, I believe, that energy prices will remain high by historical standards, and may climb higher still. It also means that we will be at constant risk of energy shortages and price spikes from major storms and political upheavals in the oil-producing countries. There is no supply side solution in sight that can save us from this predicament; only by curbing demand can we ease the pressure on oil supplies. Energy conservation must, therefore, constitute the principal thrust of any new national energy policy.

Second, I think it would be a terrible mistake for the U.S. government to play an active, conspicuous role in promoting extensive involvement of American firms in the extraction of Eurasia's oil and natural gas. It is one thing for such firms to employ the normal channels of international commerce to gain access to Eurasian supplies, and another thing altogether for the U.S. Government to be seen as spearheading such efforts—particularly when this entails the establishment of close ties with the potentates who control many of these countries. Whatever our actual intent, such efforts will be viewed by dissidents as conferring American approval on these regimes, thereby making us targets of the dissidents' wrath. None of these regimes is entirely stable, and when (and if) they are swept away by opposition forces, we do not want to be viewed as their evil twin and so made persona non grata, as occurred in Iran after the overthrow of the Shah in 1980. We can certainly encourage U.S. energy firms to do what they are good at, which is seeking out and producing major sources of energy, but we should do nothing to fan suspicions that they are nothing but tools of the American government.

I hope that you find my observations to be useful. Thank you for allowing me to address this august body.

Senator HAGEL. Dr. Klare, thank you.

And, again, to each of you, I am grateful for your testimony, and if I could capture you for another few minutes, I would like to ask a couple of questions.

Throughout most of the testimony that we heard this afternoon, business climate in Russia, environment, the importance of Rus-

[14] See: Stephen Blank, "U.S. Strategic Dilemmas in Uzbekistan and Turkmenistan," Briefing at the Center for Strategic and International Studies, Washington, D.C., July 27, 2005.

sia—obviously, Dr. Klare has a little different approach to some of these issues—but, generally, it has been recognized in at least three of your testimonies today, as well as representatives from State and Energy, that Russia will play a very important role here in the future of energy development, affecting the United States in many ways.

I'm going to ask you, Mr. Ferguson, to begin with addressing this question, because you represent a company doing business actually on the ground in Russia, so you are beyond theory and policy. But I'm going to ask each of you to respond to this.

What needs yet to be done, in your opinion, Mr. Ferguson, for Russia to start to arrive at the potential and have the impact that most of you believe it will have at some point in the reality of doing business in the climate that you are doing business in? And I will ask each of you to comment on that. What are your thoughts about how we, the United States, become more engaged? Again, Dr. Klare will have a different opinion of this. He's expressed it. But I want to hear all of your opinions. And especially in light of one of the comments that was made in the testimony of Ms. Baran, in talking about the Shanghai Cooperation Organization and the implications of that, that she brings out.

So, if I could start with you on that very general open question, Mr. Ferguson, then I would go to Mr. West and go down the line. Thank you.

Mr. FERGUSON. Thank you. I think, in some ways, the best way to answer this, Senator, is that we believe that TNK-BP has actually found a formula for sustainable success in Russia. And it's maybe—there's some lessons there, I think, for maybe how we need to engage in—both now and in the future. And this formula is a combination of, you know, increased, but very efficient, you know, commercial investment, new technology, together with improved transparency and better governance. Those four elements kind of combine into not only continuing to yield good returns for the company, but also create real benefits in Russia. In some ways, the best thing that companies like TNK-BP and individuals like myself can do is promote these large-scale strategic developments that can benefit both Russia and—regionally and federally—but actually contribute to Russian GDP targets. There is more to be said for these strategic projects, both oil and gas, going ahead than probably anything else. It makes the biggest single difference. Likewise, we don't see, as a Russian—as a Russian private entity, we don't see any shortage of opportunities in Russia.

So, I think it's a combination of applying—and it's the right combination of things, I feel—of both transparency, governance, new technology, and efficient investment. And I think that we know, through our discussions, and discussions of a very senior level with the Russian Government, that that's something that they genuinely appreciate and use as a model for some of their—some of the other companies that are there.

Senator HAGEL. Let me, before I go to Mr. West, ask the part two of the question. This is regarding Ms. Baran's thoughts concerning the Shanghai Cooperation Organization and the implications that she suggested could be the case, and the geopolitical representations made in her observations. You were there on the ground in

Russia. Do you see that possibility occurring, that this organization, the SCO, could be organized to shut the United States out of this area, geopolitically, strategically, militarily, energy-wise, and that being maybe one of the purposes of it? What are your general reactions to her point?

Mr. FERGUSON. I can only only comment on what I see, from an East Siberian standpoint in taking Russian pipeline gas into China and Korea. But I would say we see it slightly differently, you know, on the ground. We think it is essential for the U.S. and Russia to maintain a very strong bilateral dialogue. Both the relationship and the dialogue are critical.

I wouldn't say we have the same concerns as expressed by Ms. Baran.

Senator HAGEL. Thank you.

Mr. West?

Mr. WEST. Mr. Chairman, a couple of points which I think are important to keep in mind. The first is that this is Russia's oil and gas, and I think we should be very cautious about telling Russians what to do with their oil and gas. And they're very, very sensitive on this, so I think we have to have a light touch.

Secondly, I don't disagree that there is not massive corruption, and, frankly, incompetence in certain parts of the Russian Government. I think it took a long time to happen, and it's going to take a long time to clean up. And I think it would be very difficult for us to do so, particularly in a high-price environment.

Instead, I would argue that, in terms of—there are really a couple of levels of this—one is, in terms of getting more Russian oil and gas into the world market—and I'm an oil and gas guy, and I see that as the first task—I think the best way to do that is to have a number of transactions which are serious deals, which are enforceable deals, which are commercial deals, which are properly executed, and that there's only one way that can be done, and that is if President Putin invests his authority and the Duma ratifies that, so that people have protection and—the previous panel, the representative of State or Energy were talking about rule of law, that people have enforceable contracts that these be good commercial deals. I think that—I think that, frankly, that's the way—I'm, frankly, rather skeptical of policy dialogues. I think there was a lot of talk between Russian and the United States that accomplished virtually nothing, and I think what's going to get things done are serious deals. And I think the G-8 Summit is an excellent opportunity for President Putin to drive those deals and to be able to have signings with representatives of a lot of companies from all over the world.

On the question of—by the way, I agree, Mr. Ferguson, on transparency, on good governance and efficient investment, but, again, I think a lot of these things are going to take a long time. And, with all due respect, I expect to be retired before there's much movement on some of this.

On the Shanghai question, I think one of the things that's very important to remember, that it is—two things—one, it is in, I believe, the U.S. economic interest to have as much investment in Russia as possible, and to have as many stable projects go in Russia as possible. And if Indian or Chinese companies participate in

that, fine, if it brings more new oil and gas to the market. I think it would be a very serious mistake for the Russians to try and preclude Americans or others, and, likewise, I think it would be a mistake for us to try and preclude the Chinese or Indians and others.

One of the things it's important to point out, as I mentioned in my comments opening, is about the big gas pipelines to the West, which the United States opposed at the time, which I think was a mistake, in retrospect. Pipelines hardwire relationships. Pipelines are different than simple commercial arrangements. There is massive multi billion-dollar investments at both ends, on the production end, and often whole industries, cities, can grow up around the other end of the pipelines. So, I would argue that that energy can be a way to stabilize relationships, not destabilize relationships.

I guess the last point is, is that there may be opportunities, particularly for the Chinese, to come in—the only way the United States can do things, really, on any scale, is through private-sector investment—the Chinese—there may be ways for Chinese Government funding, which is—could be a much lower interest cost to fund certain projects which otherwise might not get done but which, in turn, could bring more energy to the market.

Senator HAGEL. Mr. West, thank you.

Ms. Baran?

Ms. BARAN. Thank you. As I believe I mentioned, in my testimony, so long as oil prices remain so high, I just do not see what kind of leverage or influence the U.S. would have on Russia. I think some of the things that we have said have also been said before, and I am sure people are hearing it in Russia, but it is just not, at this point, in the Kremlin's interest to change the way it is acting. And because of that, I have suggested that we work with European and other allies so that there could be a united effort and a common approach. We have seen, for example, how BTC affected Russia's behavior vis-a-vis the CPC. Competition works well. When Russians are forced to deal with a competitive environment, they adjust and actually behave in a much more market-friendly manner.

And I agree with Rob—there has been wonderful dialogue between the U.S. and Russia—but I am not sure how the Americans have benefited from it. I can tell you what the Russians have gotten out of it, but I think it is time to perhaps consider what the U.S. wants to get out of it.

Regarding Shanghai, clearly the more oil and gas in the market, the better. My concerns were about some of the developments since July, when for the first time, this organization essentially asked the United States to leave the region, and, since then, Uzbekistan has asked the U.S. to close its military base. It's most likely that Kyrgyzston is going to do the same. The organization initially began as something not anti-American—which is what still the Chinese and the Russians and others are saying—but some of the declarations and some of the actions require one to think and at least be aware of what is happening there.

And, of course, companies from China, Russia, India promise support for governments without and not necessarily pressing for democracy, and human rights. Several of these presidents—of Kazakhstan, Uzbekistan, and Turkmenistan—have been hosted in

Beijing and Moscow and offered a billion dollars of investment without any conditions. And I think again that the U.S. has very limited leverage, given that there are different types of incentives now offered to Eurasian leaders. And we just need to be aware of this.

Senator HAGEL. Thank you.

Dr. Klare?

Dr. KLARE. I'd like to just speak for a few minutes about the Shanghai Cooperation Organization, because it has been brought into this. And I agree with Ms. Baran that the Russians and Chinese see this as a pushback to the United States. But I think this needs to be put into perspective and we need to recognize that, from the perspective of Moscow and Beijing, the United States—and here I mean the government, not the oil companies—has been an interloper in this region in a very aggressive and conspicuous manner. It was President Clinton who began this process, when he pushed the BTC pipeline and established military ties with Georgia and Kazakhstan. This was viewed, at the time, by Russian leaders very explicitly as a challenge, as an intrusion by a foreign power into their own historical region, and they responded with military moves of their own.

Now, with the Bush administration, there has been an increased American military presence in the region. I'm not being critical of this; I'm saying we need to see how it's perceived in Moscow and Beijing as an intrusive move. So, from their perspective, I think the Shanghai Cooperation Organization is a response—not an initiative of theirs, but a response to what they see as a heavy-handed, excessive American, and military American, presence in this area.

So, it's not that they're asking the United States to leave. It's the military presence that they are objecting to, and particularly the U.S. bases in Central Asia. So, I think we should understand that our behavior does prompt this response. And it's why I suggested, in my testimony, that we should separate commercial activities, which could go on separate from all of this, from diplomacy and military activities that I think are making this situation more tense and are arousing anti-American hostility in the region.

Thank you.

Senator HAGEL. Thank you.

Let me ask each of you to respond, in any way you want, to an open question, because it is getting late, and we are now about two hours and 15 minutes into this hearing, and I know you each have other obligations.

And it is this. In any last comments that each of you would like to make, based on what you've heard from other panelists that you want to amplify, on a point that you made in your statement, or any additional comments that you would like, this is the opportunity to do it.

And we'll begin with you, Mr. West.

Mr. WEST. I'll spare you, Mr. Chairman.

Senator HAGEL. Thank you. That's why you get invited back so often, Mr. West, because you're very clear and concise, and brief.

[Laughter.]

Senator HAGEL. Mr. Ferguson?

Mr. FERGUSON. I'll take the advantage, Mr. Chairman. It's my first visit here.

Senator HAGEL. You can have his time, as well.

[Laughter.]

Mr. FERGUSON. Just to make some closing remarks.

Senator HAGEL. Yes.

Mr. FERGUSON. I think there's an important word to use: leadership. I think an example is your own leadership in holding these hearings and a recent visit to the East Siberian region is a very important part of what's needed for the future.

I would close by saying there are four areas where I think the U.S. agencies and groups need to think about—and this committee needs to think about—how it works, going forward, in terms of opening up these new export corridors and resource base in Russia.

First, I mentioned previously the importance of the U.S./Russian dialogue. I understand the comments made by others, but I think it's an important ingredient in creating a platform, right, for others to operate on. Right? It's always listened to. It isn't always understood. But I think the most important thing is identifying the common areas—the common areas where each—where there is genuinely a win-win solution for the different players. And recent evidence on the hard focus on both price stability and energy security are going to be absolutely key, going forward over the next several years. So, that would be number one.

Number two, recognizing and broadening—broadening and deepening the understanding of both—Russia's resource base, the role that it will play in this. I think it's— it was said by several of the panelists, and several of the earlier panel, it's actually little understood just what impact I think it could have. And I think we need to broaden and deepen that understanding in the Administration.

Third, an adjunct to that, the role—the specific role that East Siberia can play. I think we've got to highlight it a bit more clearly.

And, last, and probably most significantly, is understanding that the development of something like East Siberia is a genuine win-win for the different stakeholders and countries in the region. It's one of those few things I think would be a good example for—and I've said this to our Russian colleagues—that is—and the Russian Government—it's a good example of where every single participant in it, including the U.S., can actually benefit, at the same time as Russia is picking up the presidency of the G-8 with a strong focus on energy security.

So, I think there's a bit of a framework there, in maybe those four points, as to how we need to look, going forward.

Thank you.

Senator HAGEL. Thank you, Mr. Ferguson.

Ms. Baran?

Ms. BARAN. Very quickly, I would like to stress one more time, the importance of this pending decision to move Central Asia to South Asia at the State Department. I understand it is mainly a decision by the State Department. The NSC and Pentagon are not changing. And it is unclear to me at this point what the implications would be, but, having recently traveled to Kazakhstan—and I know that you follow Kazakhstan very closely—if they at least perceive that they are left behind without an East-West perspec-

tive, and considered in a different regional context, as opposed to a European context, it would be very damaging, and I think we will lose a lot of the progress on reforms that has already been made. And you probably know, Senator Hagel, that, most likely President Nazarbaev is going to hold elections in December that will be meeting international standards. This is because we have been engaging with Kazakhstan and offering it an East-West perspective.

Senator HAGEL. Ms. Baran, thank you. I have noted your comments and your testimony. And, in fact, I will be asking the State Department for some clarification, because I think you make some good points. And I appreciate very much you pointing this out to the committee. And if you have any additional thoughts on this, please let us know. Thank you.

Dr. Klare?

Dr. KLARE. First, I just want to congratulate you, again, Senator, for holding these hearings. As professor of international relations, I know how important this region is, and the testimony you've elicited has been some of the best I've read in academic journals and elsewhere. So, congratulations. And I hope it's disseminated as widely as possible.

Just two very brief points. A number of the prior witnesses have talked about the possibility of a geopolitical contest arising in Central Asia between the U.S., Russia, and China. And I think there is a perception in many places that this is underway. And I fear that it has a self-sustaining character, that each side will view the other with suspicion and respond that way. And I think it would be deeply, deeply dangerous for that to occur. I think the U.S., Russia, and China should cooperate as much as they possibly can in the economic and energy areas. It's the best thing for all of us.

Also, I've spoken, in my statement, but not at length, about the environmental dimensions of all that we've discussed today. The areas—as I said, the areas where these activities are taking place—the Arctic, Siberia, the Caspian Sea, the Bosporus, the Black Sea—are all very much environmentally threatened areas. And oil drilling and pipelines pose an increased threat to the survival of endangered species. And I know that civil society in that part of the world is becoming increasingly aware of this and will have its voice heard. So, we really have to pay attention to the environmental dimensions.

Senator HAGEL. Dr. Klare, thank you.

To each of you, thank you, again, for your testimony and your insights. And we will be calling upon you again.

[Whereupon, at 4:45 p.m., the hearing was adjourned.]

○

VerDate 11-MAY-2000 15:23 Apr 24, 2007 Jkt 000000 PO 00000 Frm 00079 Fmt 6633 Sfmt 6611 H:\DOCS\33726.TXT sfrela2 PsN: sfrela2