

# ISSUE BRIEF

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## Eurasian Energy: Hot and Cold

Central Eurasia brings together both the best and the worst of energy policies. It is a major petroleum-producing region that now is poised for further growth. Unreformed, vertically integrated national monopolies operate alongside large Western energy companies and leading government-owned and private companies based elsewhere in the developing world. Some Caspian governments all but exclude foreign investment in the energy sector, particularly in hydrocarbons, while others are open to it. Energy markets are restricted and uncompetitive.

Lack of cohesion due to local conflicts and political issues are exacerbated by a lack of direct access to seaports. The Baku-Tbilisi-Ceyhan and Southern Corridor pipelines are exceptions in an area where most oil and gas transit infrastructure is state-controlled. A window to the Indian Ocean and markets in South Asia could be created via Afghanistan and Pakistan, but would require serious improvements in security, infrastructure, and cross-border facilities.

Energy in Central Eurasia is a fragmented sector marked by costly duplication and small markets that preclude investment and comparative advantages. Opening up additional hydrocarbon export routes from Central Eurasia via multiple, independently operated pipelines is therefore an essential component of any strategy that aims to achieve energy security and develop free, competitive oil and gas markets in the region.

### Oil Reserves and Resource Development

On a global scale, the proven reserves of Central Eurasia are modest. Most of its known oil fields were discovered more than twenty years ago. One notable exception is Kashagan

which, at the time of its discovery in 2000, was the largest find in thirty years. Central Eurasia used to be a net importer of oil. Its petroleum provinces are young, relatively unexplored, and underdeveloped. This leaves the petroleum sector poised for growth that may last decades if the right terms of access to resources and policies are in place, and if adequate routes to global markets are available.

Central Eurasia exhibits a feature common to other petroleum basins: a relatively small number of giant fields contain most of the known resources. In Kazakhstan, three of them—Tengiz, Karachaganak, and Kashagan—hold 75 percent of the reported recoverable reserves, or about 25 billion barrels. Kashagan alone contains at least one-third of Kazakhstan's oil reserves. In Azerbaijan, two offshore fields, Azeri-Chirag-Guneshli and Shah Deniz, contain about 90 percent of the country's oil reserves. Turkmenistan and Uzbekistan exhibit similar patterns, but their oil reserves are drastically smaller. Incremental forecasts project increases primarily in Kazakhstan and, to a lesser extent, in Azerbaijan.

The key to future oil supply from Central Eurasia is the development of the giant fields that hold most reserves, and the success of exploration in highly prospective areas in the Caspian Sea. There exploration has stumbled over the unresolved delineation issue among the littoral states, especially in the south. While the geology and the operating environment in the petroleum basins of Central Eurasia are challenging, the most pressing risks are above the ground, not below it.

The pace of resource development hinges on granting reasonable, predictable terms of access and having an equitable, transparent resource management policy in place, including proper administration of the income derived from

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petroleum. Maximum economically sustainable flows from wells, capacities of facilities, and relationships to investors are the major elements that define the production profile of a field or a country. From this point of view, Central Eurasia is behind the curve, as infrastructure is lacking and relations to investors are often far from stable.

## Issues in Oil Transit

Transportation and its terms remain fundamental constraints on Central Eurasia's oil development. Resources are largely on the east side of the Caspian, away from seaports and domestic markets. The growth of oil production requires the expansion of the existing transportation infrastructure and the construction of new facilities.

The Turkish Straits, a main artery for outflow of Central Eurasian oil, are best described as congested. But tankers account for less than 15 percent of total straits traffic, and have been at this level for years. Considerably more oil could flow across the Bosphorus without increasing the number of tanker passages if larger tankers are used. Similar results could be obtained if a modern traffic control and management system, similar to that in use in the Houston Ship Channel, is deployed.

However, the key to understanding the issue of congestion in the Bosphorus is *not* in the scale of the flow or the frequency of tanker passages, but in how the associated risks, costs, and benefits are distributed. Article II of the 1936 Montreux Convention states that in times of peace, merchant vessels enjoy complete freedom of passage and navigation in the Bosphorus, under any flag and with any kind of cargo. This means Turkey cannot impose any fees or even mandate using pilots, but does assume the entire risk of accidents and spillage. The benefits of free passage are enjoyed exclusively by charterers, ship owners, and consumers of oil. It is hardly surprising that the Turkish government is trying to contain the free-for-all in the Straits by introducing safety rules requiring minimum distance between tankers and restricting traffic during periods of inclement weather, and opposing any increase of oil shipments. Regretfully, these reasonable requests run against the spirit of Montreux.

The infrastructure for Kazakh oil exports is a particularly important piece. Important new elements include the expansion of Caspian Pipeline Consortium (CPC) pipeline capacity, the export pipeline to China, and the trans-Caspian transportation system. Projects touted as solutions to the congested Turkish Straits—such as the Bourgas-

Alexandroupolis, Samsun-Ceyhan, and Pan-European pipelines—will only be viable if Kazakh oil is committed to them.

## Resource Access and Industry Structure

Aggregated data tends to blur important details on the regional and national levels. Throughout Central Eurasia, autarchic policies have been pursued in oil and refined petroleum products. Protectionism in downstream markets has been rife, as well. Bilateral relations in the energy sector have been far from constructive and sometimes openly hostile. The prevalence of short term, state-centric views about energy security, the legacy of disputes, political instability in some countries, the lack of capacity in project financing and execution, shallow national capital markets, poor governance, and absence of transparency have created a mosaic of thorny issues.

Over the last decade, the petroleum industry also underwent a major structural shift. Partially or wholly government-controlled companies like CNPC, Petrobras, and Petronas emerged as not just national champions, but also as increasingly assertive global players. Central Eurasia is one of their prime targets. For example, Chinese companies participate in about 50 percent of oil production in Kazakhstan and produce about 30 percent of the output as operators. National oil companies control about 83 percent of the world's proven oil reserves and very often allow no foreign participation. But the resource and production strength of national oil companies is yet to be matched by their vertical international integration, especially in downstream positions. Kazakhstan and Azerbaijan's oil nationals are on their way to becoming regional and global players as well, having acquired assets in Georgia, the European Union, Iraq, and elsewhere.

National oil companies are now a viable option for global investors. Many no longer face major handicaps in raising money. It is now important for the internationals to gain improved access to oil resources, since during the last decade they have generally demonstrated a low reserve replacement rate. As a result, they face rising exploration and development costs, increasingly complex operations, and growing risk.

All this translates into an expectation that growth in reserves and production of oil, which in the past had been witnessed outside the domain of national oil companies, will now be

mostly in OPEC countries and the former Soviet Union—precisely in the areas where the internationals face the greatest difficulty getting to resources. Central Eurasia, while offering better terms of access than many other regions, has seen its share of demands for revision of contracts, changes in terms and conditions to favor government, and requests for rebalancing shareholding participation in operating companies and revenue streams.

In the past, international oil companies have been able to compensate for their comparative disadvantage in resource access with excellence in technology, management, and efficiency. But as national oil companies gain experience and mature, at least some of them have evolved technical and management capabilities that are second to none. A few operate virtually unfettered by their governments and have, for all practical purposes, almost become market friendly. It is from these that “super-national oil companies” may emerge that will operate in the global market on competitive terms, backed by the advantages of preferred access to resources and good alignment of political and commercial objectives. For the time being, none of the national oil companies in Central Eurasia fall into this group, though Kazakhstan’s KazMunaiGas (KMG) and Azerbaijan’s State Oil Company (SOCAR) have gained considerable ground towards basing their business decisions on purely commercial grounds and diversifying their operations internationally.

## **Natural Gas: A Special Case**

The advent of the “unconventional gas revolution” in North America is a major factor that impacts the rethinking of national energy policies and the repositioning of national and international oil companies in Central Eurasia. The tapping of the major shale gas reserves in the United States occurred in parallel with the development of global liquefied natural gas (LNG) infrastructure that would have also serviced North American markets and at a time of global economic downturn. The resulting LNG glut transposed lower North American gas prices to Europe, which is still for all practical purposes *the* market for Central Eurasian gas. Falling prices in Europe spelled lost market share and revenue for Gazprom, which in several instances bowed to requests for lower prices and contract renegotiation. The result is that Central Eurasia is experiencing a period of economic uncertainty as far as its natural gas sector is concerned, which makes geopolitical considerations even more prominent in decisions about terms offered to foreign

investors, pricing of gas, duration of contracts, and major gas pipeline projects.

Central Eurasia is rich in gas, arguably more so than it is in oil, but its gas pipeline infrastructure is poor. Only the modest South Caucasus Pipeline that runs from Azerbaijan across Georgia to Turkey links Caspian gas directly to competitive markets. All other routes, including the newly built transcontinental gas pipeline from Turkmenistan to China, lead to markets controlled by government entities where commerce is under long-term contracts.

Central Eurasian gas exporters remain vulnerable to serious constraints limiting their negotiating power. The main export route is the Central Asia-Center pipeline, which ends up in Russia. Gazprom’s strategy views Central Asian gas as a part of its own resource base. The company plans to enhance its positions in the region in order to preserve and expand its posture on the European market, match supply and demand in the former Soviet space, minimize investment expenditures, and optimize gas flows and financials across its system. To achieve these goals, Gazprom plans to participate in regional gas exploration and production and in related infrastructure undertakings. Gazprom also intends to keep the format of reselling Central Asian gas in Europe through the use of affiliated “transit” companies based outside of Russia. This practice allows them to avoid paying certain charges, but is opaque and prone to fostering corruption and inefficiency across the Eurasian gas supply chain.

New infrastructure that will diversify the export routes for Central Eurasian gas beyond those through Russia faces major challenges. Azerbaijan’s main gas asset, the Shah Deniz field, is a case of what the petroleum industry sometimes describes as a “tar baby.” It is big enough to be slated for development, but not big enough to fill the infrastructure required to get output to markets. Further development of Shah Deniz requires new export infrastructure, which is not financeable without more gas than the project will likely produce. Hopes are that a second large gas field, the Shafag-Asiman, will match or even exceed that gap by boosting Azerbaijan’s reserves and production. In October 2010, a contract for the development and operation of Shafaq-Asman was extended to BP. That same year, Baku reached an important agreement with Ankara about the terms of gas transit to other destinations.

Still, gas exports from Azerbaijan are hostage to participation in new infrastructure by Turkmenistan or other potential suppliers. An option may be the use of the transit

infrastructure in Turkey and in Europe for gas exports from both Azerbaijan and Iraq, or aggregating demand to levels that assure the efficiency of the infrastructure, such as the Caspian gas consortium that the European Commission proposes. Azerbaijan has been discussing a trans-Caspian gas pipeline since 1992, but its prospects remain clouded by disputes with Turkmenistan over seabed resources and other problems. Ashgabat's proposal to develop an international agreement on gas transit terms under the auspices of the United Nations has so far failed to produce practical results. Energy Charter Treaty negotiations on a transit protocol for Eurasian markets are all but stalled due to Russian intransigence. At their summit in November 2010, the leaders of the littoral states were unable to establish a new legal status for the Caspian Sea.

The opening of alternative markets for natural gas eastwards of Central Eurasia, especially in China, has had disparate effects on the major producers. Russia is dependent on European markets for 60 percent of its total export revenue and 20-25 percent of its gross domestic product. Europe is of similar or even greater importance for several other countries in Central Eurasia. With no other options available, for decades producers in Central Eurasia have had to rely almost exclusively on Russian export infrastructure. For producers to the east of the Caspian, the availability of alternative markets for oil and gas in China makes bargaining with Russia easier. However, producers in Central Eurasia still do not have the luxury of direct access to free export markets, and Gazprom is still the only game in town when it comes to transit gas systems in Uzbekistan and Kazakhstan that lead to Europe.

The European Union seeks to promote an efficient, transparent gas market served by competitive transit infrastructure that allows third-party network access and independent operators, including Russia. In pursuit of these policies, Brussels seeks to phase out certain terms in long-term gas supply contracts with Gazprom, particularly clauses that prohibit the resale of gas on the single European market and that disallow third-party use of available import pipeline capacity. These provisions violate EU legislation and make it possible for Gazprom to practice price and contract discrimination within the European Union, thus fragmenting its market and precluding the formulation of a coherent European energy policy.

## Key Findings and Recommendations

In Central Eurasia, U.S. energy policy faces challenges from monopolies and other non-competitive practices that are not in the West's long-term interests. Balancing bilateral and multilateral approaches, U.S. policies should focus on solutions that provide Caspian Basin producers with outlets to free markets, including in the United States and European Union.

Washington should work together with Moscow, Brussels, and Central Eurasian producers to alleviate legitimate concerns in Russia about secure access to its main export market in Europe, in other producing countries about fair terms of natural gas trade and transit, and in Europe about the Russian energy sector. An appropriate platform for such effort could be the Organization for Security and Cooperation in Europe (OSCE), including during the rotating chairmanship of Lithuania in 2011.

Governments in Central Eurasia should be aware that being endowed with energy resources does not automatically translate into sustainable growth and prosperity. Major risks include poor governance, failure to manage resources for the greater good, improper rule of law, an unfavorable investment environment, and unstable terms offered to foreign investors. Most Central Eurasian countries measure poorly in business climate attractiveness and perceptions of risk, which explains why the inflow of capital is low compared to other economies in similar circumstances. Restructuring and the establishment of transparent regulatory systems are particularly important for the downstream parts of the gas industry.

Policy should focus on alleviating the worst features and most serious concerns of gas markets in the region: the extremely high concentration of natural gas trade flows, many of which are via a single route; gas monopolies epitomized by a single sales point for all exports from Russia, including resale of gas originating in Turkmenistan, Uzbekistan, and Kazakhstan; complete domination of the transit natural gas pipeline systems by a single customer (monopsony); and a lack of negotiating leverage.

The United States should not back down from explicitly supporting particular infrastructure projects that link Central Eurasian countries to free markets and to each other since, without such infrastructure, free trade and competitive markets will have a hard time emerging. For oil, there is a history of success, for example the Baku-Tbilisi-Ceyhan line. For natural gas, precious little has been brought to fruition.

The absence of independently operated, diversified outlets for Caspian Basin gas forces these countries to choose between unpalatable options.

Governments should support national oil companies based in Central Eurasia as they seek become fully integrated in the global petroleum industry. However, a reciprocal approach to improving terms of access for investors and to markets also requires government actions. The establishment in Central Eurasia of transparent and cooperative relationships between international oil companies and the “market-friendly” nationals is likely to enhance energy security and promote stability.

Central Eurasia has considerable potential in renewable energy resources, but does not possess the capital and technical wherewithal to tap it. Moreover, a focus on hydrocarbons tends to crowd out alternative energy efforts. Central Eurasian governments should eliminate barriers and work with donors to structure initiatives that promote investment in renewable energy. The United States and European Union should support technical aid programs and demonstration projects in Central Eurasia via established channels and cooperation with multilateral institutions such

as the Asian Development Bank, European Bank for Reconstruction and Development, United Nations, World Bank, and OSCE.

Few Central Eurasian countries boast competitive energy markets. Their small size poses limitations in any case. In the gas industry, regional integration and cohesion is in its infancy; the electricity sector is hardly different. Both are strictly compartmentalized on the national level. However, opportunities for improving cross-border investment and market access do exist, and should be supported. One way to promote market efficiency is to reduce existing national fragmentation, which will require Central Asian governments to eliminate restrictions and enter into investment, trade, and transit agreements. The United States and the European Union should continue technical aid programs that focus on market restructuring and liberalization, including transit, and work these through relevant intergovernmental bodies such as the OSCE, Energy Charter Treaty, and Organization for Economic Cooperation and Development.

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