

Managing Asia Pacific's Energy Dependence on the Middle East: Is There a Role for Central Asia?

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Asia Pacific

I S S U E S

**Analysis from the East-West Center
No. 60
June 2002**

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S U M M A R Y The Middle East is Asia Pacific's largest energy supplier, satisfying a demand for oil that must keep pace with the region's continued economic growth. This dependence on the Middle East has caused Asia Pacific to join the United States and other Western nations in the hunt for alternative suppliers. Central Asia, located between the Middle East and Asia Pacific and already an oil and gas exporter, is an attractive possibility. With energy production projected to rise rapidly over the next decade, Central Asia is poised to become a major player in the world energy market. But the land-locked region's options for transporting oil and gas to Asia Pacific markets are limited and problematic. Passage via pipeline east through China presents construction challenges; south through Iran, or through India and Pakistan via Afghanistan, is fraught with political difficulties. Not until geopolitics become more favorable to the south-bound options, or technologies make the China route possible, will Asia Pacific be able to tap the energy resources of Central Asia.

Asia's reliance on oil imports will reach even higher levels in the coming decades

The Asia Pacific region has long been heavily dependent on oil imports—particularly from the Middle East—to meet its energy needs. This dependence has increased since the early 1990s, when China joined the ranks of Japan, South Korea, and other Asian nations as a large and rapidly growing oil importer. At the same time, India's oil imports also rose dramatically. With the region's own oil production stagnated and oil demand rising continuously, Asia's reliance on oil imports will reach even higher levels in the coming decades.

The region's dependence on oil imports and the dominance of the Middle East oil supply have made energy security a concern for many Asian nations. Supply diversification is one way to address the issue, but oil importing countries in Asia have been hard pressed to find viable alternatives to Middle East oil. The prediction that all major countries in the region, including Indonesia and Malaysia, will be net oil importers within the next 15 years increases the urgent need to diversify.

While Asia Pacific has sought to broaden its oil supply, Central Asia has emerged as a potential player in the world energy market. Strategically located between Russia, the Middle East, and Asia Pacific, and adjacent to Iran (a U.S. adversary), Turkey (a Western ally), and Afghanistan (a war-torn country undergoing reconstruction), the geopolitical importance of Central Asia is obvious. More importantly, Central Asia may prove to have potentially large oil and gas reserves and its petroleum production is rising. Even

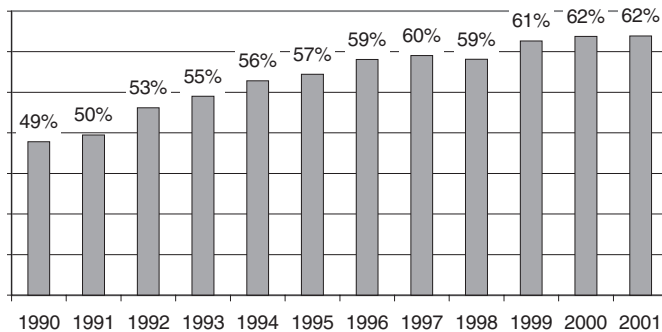
before the terrorist attack on the World Trade Center in September 2001, the United States and other Western powers were greatly interested in Central Asia, given its strategic location and oil and gas potential. The recent conflict in Afghanistan and the role played by Central Asian nations such as Uzbekistan and Georgia, as well as by Russia in the U.S.-led war on terrorism have heightened Central Asia's geopolitical importance.

When considering the energy needs of the Asia Pacific region and the potential role of Central Asia, two critical questions present themselves: Can Central Asia be a viable alternative energy supplier, and can an energy triangle be formed between Asia Pacific, the Middle East, and Central Asia? To answer these questions, many factors must be considered and Central Asia's role in addressing the energy supply and security concerns of the Asia Pacific region assessed.

Rising Oil Import Dependence in Asia Pacific

Asia Pacific encompasses East Asia, Southeast Asia, South Asia (including Afghanistan), and Australasia (including the Pacific Islands). In 2001, the region consumed a little over 20 million barrels per day (b/d) of oil, of which 12.6 million b/d were net imports.ⁱ This represents an import dependence of 62 percent, up from 49 percent in 1990 (see Figure 1). Despite the 1998 financial crisis and the slowdown of regional and global economic growth in 2001 associated with high oil prices, oil demand in Asia Pacific is poised to grow continuously over the next 15 years, albeit at rates much lower than those seen in the late 1980s and most of the 1990s. With flat regional oil production, overall oil imports—and hence import dependence—are set to rise.

A comparison between U.S. and Asia Pacific oil consumption and dependence highlights the seriousness of the latter's reliance on imported oil from a single source—the Middle East. Both regions have oil consumption and oil import dependence, but Asia Pacific's consumption is slightly greater and its import dependence higher. In 2001, the United States consumed 19.6 million b/d of oil with an import dependence of 54 percent, up from 42 percent in



Source: East-West Center

Fig. 1. Oil import dependence in the Asia Pacific, 1990–2001

More than half the oil consumed in Asia Pacific comes from the Middle East as compared to 15% in the U.S.

1990.ⁱⁱ The Asia Pacific region is facing a more precarious situation: More than 90 percent of the region's oil imports comes from the Middle East; only a quarter of U.S. oil imports stems from the Persian Gulf. In terms of total oil consumption, the Middle East accounts for well over half the amount consumed in the Asia Pacific, as compared to less than 15 percent in the United States.

While the Bush Administration has been anxious to stabilize or reduce U.S. dependence on oil imports (a nearly impossible task because of the steadily rising oil demand and declining oil production in the long run), pressure has been mounting for Asia Pacific countries to follow suit and, in particular, to diversify their supply and move away from a reliance on Middle East oil.

Central Asia has the energy reserve potential and is geographically closer to the Asia Pacific than any other non-Middle East energy provider (such as Africa,

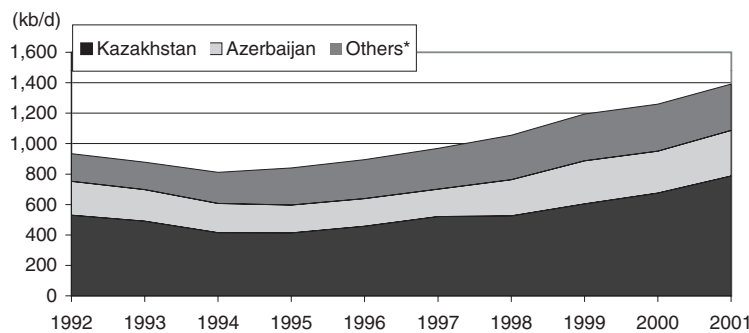
North Sea [Europe], South America). Can Central Asia become the region's new oil supplier?

Emergence of Central Asia as a Potential Global Energy Supplier

Central Asia is defined here to include eight former Soviet Union republics that gained independence in 1991. Five are in the Caspian Sea region (Azerbaijan, Kazakhstan, and Turkmenistan) and the Caucasus region (Armenia, Georgia, Azerbaijan). The remaining three (Kyrgyzstan, Tajikistan, Uzbekistan) are inland, with the first two bordering Xinjiang, China.

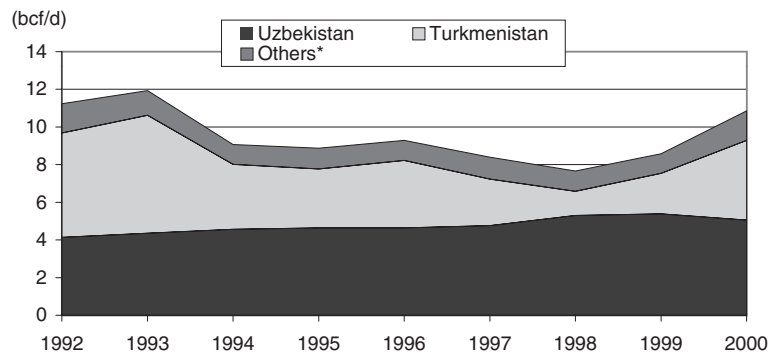
Central Asia's energy resources are concentrated in those countries surrounding the Caspian Sea. Kazakhstan and Azerbaijan together account for 92 percent of its total oil reserves. Turkmenistan has over 40 percent of its total proven natural gas reserves, followed by Kazakhstan and Uzbekistan (the region's single largest natural gas producer), each at 27 percent. Together these three countries share 95 percent of Central Asia's total proven natural gas reserves.

Although Central Asia accounts for only 2 percent of the world's proven oil reserves and 5 percent of proven gas reserves, its potential is many times greater, particularly for natural gas. The current level of exploration in Central Asia is low—both a major obstacle to development and the reason behind Western oil companies' keen efforts to determine the region's resource potential.



*Mainly Uzbekistan and Turkmenistan.
Source: EIA

Fig. 2. Oil production in Central Asia, 1992–2001



*Mainly Kazakhstan and Azerbaijan.
Source: EIA

Fig. 3. Natural gas production in Central Asia, 1992–2000

Production poised for growth. Following the collapse of the Soviet Union, many of the newly independent Central Asian countries experienced economic contraction in the early 1990s. Between 1992 and 1995, oil and gas production in Central Asia declined significantly because of reduced technical and financial support from Russia. Investment from the West has since flowed into the region, helping to revive its oil and gas industries. Oil production began to recover in 1996 and by 2001 was well above 1992 levels (see Figure 2). Despite a brief rebound in 1996, natural gas production continued to decline through 1998 before rising again in 1999 and 2000 (see Figure 3).

In 2001, Central Asia produced roughly 1.4 million b/d of oil, of which net exports accounted for about 57 percent.ⁱⁱⁱ Its share in world oil production, however, is only 2 percent, compared with the Middle East's 28 percent. Central Asia's dry gas production amounted to 11 billion cubic feet per day (bcf/d), or about 5 percent of the world total.^{iv}

Notwithstanding current modest levels of production, Central Asia's prospects for growth in oil and gas production are promising. Oil production in Central Asia is projected to increase to 3.4 million b/d in 2010 and nearly 4 million b/d in 2015 under the base-case scenario.^v Kazakhstan is likely to lead the way, followed by Azerbaijan and Turkmenistan, all Caspian Sea states.

Studies show that the projected output for natural gas will reach 17 bcf/d in 2010 and 20 bcf/d in 2015. The leaders in gas output growth will be Turkmenistan and Uzbekistan, followed by Kazakhstan and Azerbaijan. Production in other Central Asian countries will remain low; oil and gas imports will be necessary to satisfy their needs.

Export potential. Export potential is key in determining Central Asia's importance in the global energy market. Like its economy, oil and gas consumption in Central Asia has undergone a period of adjustment. From 1992 to 1997, the region's oil consumption was down 40 percent before the positive growth resumed in 1998. In 1992, Central Asia was a net oil importer, given the limited quantities coming out of Kazakhstan and Azerbaijan. This situation reversed in 1993. In 2001, net oil exports from Central Asia surged to 850 thousand b/d.

Heavy subsidies and a better-developed infrastructure derived from the Soviet Union era have stabilized natural gas consumption in Central Asia since independence. The region exported large volumes of natural gas mostly to Russia through the old Soviet pipelines in 1992. Because of lower gas production and stable consumption, net gas exports from Central Asia declined dramatically, plunging by 73 percent between 1992 and 1998. They have since rebounded strongly; by 2000, they returned to 1992 levels, thanks

to a jump in gas production in Turkmenistan and Uzbekistan.

With the projected increase in production, Central Asia's oil and gas net exports are expected to rise rapidly over the next 10 to 15 years. Oil exports are projected to reach approximately 2.5 million b/d in 2010 and 3 million b/d in 2015.^{vi} Export availability of natural gas is likely to grow to 7 bcf/d in 2010 and 9 bcf/d in 2015.

Fueling Asia Pacific's Growth: Why Central Asia is Missing

The export availability of Central Asia's oil is hardly comparable to that of the Middle East. In 2000, the Middle East exported 18.8 million b/d of oil, 89 percent of which was crude oil and 11 percent petroleum products.

If Asia Pacific received all of Central Asia's oil exports, the amount would satisfy only 10 percent of the region's total oil demand by 2015. Currently, Central Asia's energy exports to Asia are practically nonexistent. Over the next 10 to 15 years, it will export a small fraction of its available oil and gas to Asia Pacific. Why? The fundamental reason lies in the control and routing of oil and gas pipelines. Although most of Central Asia falls between the Middle East and the Far East, it is a land-locked region. Pipelines are the basic means for transporting oil and gas out of the area. The economics associated with export pipeline projects and the desire to catch Asia Pacific's fast train to economic growth are mingled with geopolitical and regional conflicts in a complex way, making any strong energy link to the Far East a dream for the next generation.

Influence of Russia. Russia continues to have a profound impact on Central Asia's oil and gas export routes. At the time of independence in 1991, the region's oil and gas pipelines, particularly those surrounding the Caspian Sea, were all Russia-bound. The pipelined oil and gas were either passed through Russia for export or used by Russia to free up its own oil and gas for exports to the lucrative West European

If Asia Pacific received all of Central Asia's oil exports, they would satisfy only 15% of the region's oil demand by 2015

Western oil companies view Central Asia as a hedge against disruption in imports from the volatile Middle East

market. Since 1991, Russia has made a concerted effort to ensure that existing pipelines continue routing through Russia and it has largely succeeded. Existing oil pipelines to Russia have been repaired, upgraded, and expanded. The only operational natural gas pipeline out of Central Asia runs from Turkmenistan to Russia via Kazakhstan and Uzbekistan. The gas is exported mainly to Ukraine, with small volumes going to Russia.^{vii}

Many Central Asian countries have strongly resisted routing oil and gas pipelines to Russia exclusively, not only for the sake of independence but also to avoid price and currency disputes. Faced with the complex task of broadening their markets, Azerbaijan and Kazakhstan, assisted by Western oil companies, built new pipelines to route oil to Black Sea terminals, which would ultimately provide access to markets throughout East Europe. These new routes, however, have not bypassed Russia completely. At least two oil pipelines (one from Azerbaijan's Baku, the other from Kazakhstan's Tengiz oil field) have been routed to Russian terminals in the Black Sea. Russia will undoubtedly continue to assert its influence by persuading Central Asian countries to take advantage of the existing pipeline system.

Interest of Western oil companies. Western oil companies view Central Asia as a hedge against potentially disastrous disruptions in oil exports from the politically volatile Middle East. They have tried to stay out of territorial disputes dividing the Caspian Sea and focus instead on obtaining good commercial terms. While U.S. companies must be mindful of sanctions against Iran, their European counterparts are unhampered by such restrictions. Nearly every company in the Caspian, however, would like to see the United States' unilateral sanctions lifted. Iran has three Azeri provinces with a combined population of 25 million; oil must be transported to them from oil fields more than 1,000 miles away. Their neighbor Azerbaijan produces a great deal of oil for export but cannot supply them. Instead, Azerbaijan sends its oil to Turkey to supply the Mediterranean market. Sanctions and trade embargoes affect business, but the practical and geopolitical realities are

understood by an industry that has learned to survive under difficult conditions.

Role of Iran. Iran plays a unique role in determining the future of Central Asia as an energy supplier. Prior to 1991, Iran was the only country bordering the Caspian other than the Soviet Union. Now Iran shares the border with three newly independent Central Asian countries—two in the Caspian Sea region (Turkmenistan and Azerbaijan) and Armenia. Iran is also the only Middle East oil exporter and key OPEC (Organization of Petroleum Exporting Countries) member that neighbors Central Asia. To gain access to the Persian Gulf (and ultimately Asia Pacific), Central Asia must build its pipelines through Iran.

A few of these pipelines already exist, exporting Central Asia's oil to northern Iran in exchange for an equal amount of Iranian oil exports to Asia. The swap program has been operating since 1998 on a small scale between Turkmenistan and the Iranian port of Neka. An oil pipeline that will span the 208 miles between Neka and Tehran is now under construction. A second pipeline between Azerbaijan and Iran is being proposed by the French energy company TotalFinaElf. Despite the economic benefit, further route expansion through Iran is unlikely because the country's share under the swap program is limited. Central Asia could also export its oil to the Far East through Iranian ports on the Persian Gulf, but this would not help Asia Pacific reduce its dependence on the Middle East. Moreover, the U.S. government has strongly objected to the proposal, making it difficult to raise the necessary capital.

Exporting Central Asia's oil and gas to Pakistan and India by pipeline through Afghanistan is a possibility, albeit a very challenging one. The India-Pakistan rivalry adds to an already complex the situation. Alternatively, Afghanistan could give Central Asian countries access to the Arabian Sea, but Afghanistan's serious lack of infrastructure would make any such plan costly.

Position of the U.S. government. The United States' position on energy-related matters in Central Asia is clear: It discourages the laying of oil and gas pipelines

Although the Iran route is the most economical south-bound route, the 'axis of evil' label has made it difficult to attract investors

through Iran and encourages U.S. investment. It has been working hard to promote west-bound pipelines from Central Asia, particularly the Baku-Ceyhan oil pipeline which will run from Azerbaijan's Baku via Tbilisi in Georgia to the Mediterranean port of Ceyhan in Turkey. The hard-line position toward Iran has been consistent for over a decade; the terrorist attack on the World Trade Center and ensuing events have not altered it. The U.S. military's success against Al-Qaeda and the Taliban in Afghanistan has helped stabilize the country and may pave the way for Caspian Sea pipelines. Closer relationships with Uzbekistan, Georgia, and other Central Asian countries have been established and have helped boost U.S. oil company investment in the region.

Regional competition. Central Asia has problems of its own, ranging from overlapping claims to energy resources and territorial disputes to ethnic conflicts. Competition among its countries (particularly those surrounding the Caspian Sea) and with Iran and Russia has been fierce. Azerbaijan, Kazakhstan, and Turkmenistan have opened their oil and gas sectors to foreign investment, which has broadened the field. All of these factors have a great impact on how and where pipelines will be built.

Central Asia's options for future pipeline routes are summarized as follows, each with its own pros and cons.

Option 1: North/Northwest Bound. Geographically and logistically this is the easiest option. Russia has a complex (but poorly maintained) pipeline system; linking to it is the fastest way to transport oil and gas out of Central Asia. After independence, a few countries opted for this solution, but they have come to resent Russia's control of the export market and hard currency. For some, bypassing Russia provides enough of an impetus to develop alternative routes despite extra cost or risk.

Option 2: West Bound. Initially the proposed Baku-Ceyhan pipeline alone received U.S. support. Although other options have since emerged, the Baku-Ceyhan and similar pipelines remain the most favored by the United States. One drawback is the preliminary target market: Europe. Companies are wary about

investing billions of dollars to supply a mature market with limited growth potential.

Option 3: East Bound. This option proposes that oil and gas be transported through long-distance pipelines to China and eventually the rest of Asia Pacific. Currently under consideration are an 1,800-mile-long oil pipeline from Kazakhstan to China's Xinjiang region and a 4,200-mile-long gas pipeline from Turkmenistan to north China. This eastbound option is the most direct way to link Central Asia and the Far East, but it is also the most expensive and geologically difficult option for pipeline construction at present. However, it remains an attractive long-term alternative.

Option 4: South Bound. Two pipelines—one to Iran and another to Pakistan and India through Afghanistan—are under consideration here. Although the Iran route is by far the more economical of the two, the United States' Iran and Libya Sanctions Act and the Bush Administration's labeling of Iran as an "axis of evil" have made it difficult to attract investors. India's desire to bypass Pakistan completely creates many obstacles to building the second pipeline.

Conclusion

Central Asia is eager to join the Middle East in fueling Asia Pacific's growth, but a solid energy triangle between Asia Pacific, the Middle East, and Central Asia will be difficult to form in the coming decades. Central Asia's energy potential may be great, but it is not another Middle East. Its ability to satisfy Asia's growing energy demand is limited. Direct energy links to the Far East can only be made through long-distance pipelines, which are very costly. Central Asia's link to South Asia is complicated by instability and lack of infrastructure in Afghanistan and the decades-old conflict between Pakistan and India. An indirect link and sea-lane connection through Iran and the Persian Gulf not only defeats the purpose of diversifying Asia Pacific's oil supply, but also garners strong objections from the United States. As the bond between Asia Pacific and the Middle East grows stronger, Central Asia's energy ties to the Far East will remain weak. Until southbound routes can be revived or technologies improved to justify long-distance

With scarce alternatives to Middle East oil, 'energy security' must be redefined to include conservation, renewable energy, and other options

pipelines through China, it will be a long time before Central Asian oil and gas exports can reach the fast-growing Asia Pacific market.

Central Asia's primary target for energy exports in the near future will be Europe, particularly East Europe, and Russia. In light of Central Asia's regional politics, its relationship with Russia, and the influence of the United States and other Western countries, fierce competition among its countries over oil and gas routes will continue—as will Asia Pacific's

need to broaden its energy supply. The scarcity of viable alternatives will further enhance the Middle East's role as Asia Pacific's primary oil supplier. Strategies that address energy security and redefine the concept must be developed. Any strides made in diversifying energy and effective supply should spread to energy conservation, better use of natural gas and renewable energy, energy efficiency, and improving energy regulation systems throughout the region, particularly in developing countries.

Notes

ⁱ East-West Center Energy Database. 2002. April, East-West Center, Honolulu, Hawaii.

ⁱⁱ Energy Information Administration (EIA). 2002a. *Short-Term Energy Outlook April 2002*, April 8, Washington D.C.

ⁱⁱⁱ EIA. 2002b. *International Energy Annual 2002*, May, Washington D.C.

^{iv} Ibid.

^v See also Robert Smith. 2001. "Politics, Production Levels to Determine Caspian Area Energy Export Options," *Oil and Gas Journal*, May 28, Vol. 99, No. 22.

^{vi} Ibid.

^{vii} EIA. 2002. *Caspian Sea Region*, February, Washington D.C.

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The *AsiaPacific Issues* series reports on topics of regional concern.

Series Editor: Elisa W. Johnston

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ISSN: 1522-0966

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