

PIPELINE POLITICS IN ASIA

The Intersection of Demand, Energy Markets, and Supply Routes

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Pipeline Politics in Asia: Energy Nationalism and Energy Markets

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Asia has become “ground zero” in global energy markets as demand has accelerated to fuel urbanization and transportation, power, petrochemical, and industrial growth. The shift in the locus of global energy demand from mature industrial countries to developing Asia is transforming the landscape of global energy markets and geopolitics. The trends are stunning. For example, the International Energy Agency (IEA) forecasts that in the two decades leading up to 2030, China and India combined are likely to account for more than 50% of total world energy demand growth, 60% of world oil demand growth, 20% of natural gas demand growth, and 85% of world coal demand growth.

Asia’s boom in oil and natural gas demand has increasingly provoked a scramble among regional powers to secure access to and control over future oil and gas supplies, as well as intense competition over control of oil and gas transportation links and transit infrastructure. In concert with their national oil companies (NOC), national gas companies, the NOCs of key producer countries, and their state financial institutions, China, Japan, South Korea, and India are scouring the globe to gain control over new supplies and to forge new transit routes. At the same time, the United States has become deeply engaged in promoting or discouraging new oil and gas pipelines around the Eurasian region, in some cases seeking to isolate pariah states such as Iran and Myanmar while promoting new supplies from friendlier states.

The scramble for resources and transport has had uniquely important implications across East Asia and Eurasia while powerfully influencing regional energy market dynamics and geopolitical relationships. At the nexus of these dynamics is a growing competition to develop a number of major Asian and Eurasian oil and gas pipelines to move oil and gas across the region. Three factors drive this trend. First, an increasing share of Asia’s oil and liquefied natural gas (LNG) supplies will have to transit the Indian Ocean, Malacca Strait, and the South China Sea to bring petroleum from the Middle East and Africa. The IEA forecasts that Asia’s oil imports passing through the Malacca Strait could double over the next two decades from today’s 11 million barrels per day (mmbd) to 22 mmbd. This has raised new concerns, particularly for China, over the growing risk of major maritime supply disruptions, as well as over U.S. control of these vital sea lanes. This is driving China’s efforts to diversify supply lines with new overland pipeline routes less vulnerable to disruption. Second, the breakup of the former Soviet Union in the early 1990s freed up enormous new potential reserves of oil and gas in Central Asia, most importantly in Kazakhstan, Turkmenistan, and Azerbaijan. It also opened the potential for scaled up Russian oil and gas production and exports from Eastern Siberia. Third, the rise of China and the country’s booming oil and gas needs, combined with its growing projection of economic and diplomatic power regionally and globally, have touched off an increasingly competitive political atmosphere in East Asia in which a zero-sum competition over energy supplies and transit has become a key element in regional rivalries and strategic competition. All these factors have converged to produce a highly competitive backdrop for regional pipeline development and control.

In an effort to explore the geopolitical and energy market implications of these developments, The National Bureau of Asian Research (NBR), in cooperation with the Asia Program of the Woodrow Wilson Center for International Scholars, organized a major conference on May 4, 2010, in Washington, D.C., that brought together a select group of analysts and policy experts. The conference, entitled “Pipeline Politics in Asia: The Intersection of Demand, Energy Markets, and Supply Routes,” was supported by generous contributions from ExxonMobil, Chevron, ConocoPhillips, and the Japan Oil, Gas and Metals National Corporation.

Five essays were commissioned for the conference to provide a basis for in-depth analysis and discussions. The essays focused on the broad geopolitics of cross-border pipeline development, the progress in development of new oil and gas pipelines from Russia's Eastern Siberia to China and Northeast Asia, prospects for Central Asian oil and gas pipelines to East Asia, India's gas pipeline dilemmas and challenges, and the implications of new oil and gas pipelines being built by China across Myanmar into Southeast China. This report includes all five essays as well as a conclusion drawing implications from the conference about the impact of pipeline development on U.S. energy security and strategic interests in East Asia and Eurasia.

Paul Stevens from Chatham House provided an excellent analysis of the market dynamics and geopolitics of cross-border pipeline projects. He points out that with growing demand in Asia and the development of new supplies across Eurasia, more and more of Asia's oil and gas will have to transit long distances across multiple borders by pipeline. Historically, disputes related to transit pipelines have been triggered by political conflicts as well as by economic disputes over attempts to renegotiate transit terms. Further, over time the relative bargaining power of the parties shifts once the investment is committed, tempting the transit country to seek new, more attractive transit terms. Moreover, the value of the transit project fluctuates with the rise and fall of oil and gas prices. There are few effective ways to avoid these basic conflicting interests. Therefore, while helping to diversify supply sources, the development of new pipelines inevitably gives rise to chronic struggles over who benefits and who pays for supply diversity.

Shoichi Itoh of the Economic Research Institute for Northeast Asia (ERINA) and visiting fellow at the Center for Strategic and International Studies (CSIS) analyzes the evolution of pipeline projects to move oil and gas from Russia's Eastern Siberia to Northeast Asia. He argues that Russia has strong energy and strategic reasons to develop oil and gas supplies for Northeast Asia and China. However, Moscow has been reluctant to deepen its energy integration with China due to Sino-Russian strategic rivalries and fears that Russia could become a "resource appendage" of China. Russia is now finally building the Eastern Siberia–Pacific Ocean (ESPO) oil pipeline that will move 300,000 barrels per day to China and another 300,000 to the Pacific Coast for Japan and other Asian markets. Construction of the pipeline began, however, only after a decade of Russia playing China against Japan in a failed attempt to extract better funding and prices from each side. Long-running negotiations to build a large gas pipeline from Eastern Siberia to China and Korea remain stalled due to Russia and Gazprom's lack of investment capital and Gazprom's inability to develop a coherent gas development program for its Eastern Siberian reserves. Hence, despite the strong energy logic of Russia's oil and gas moving to China and Asia, political distrust and rivalry have made progress difficult and slow.

Edward Chow and Leigh Hendrix from CSIS analyze the evolution of Central Asian oil and gas pipeline projects and prospects for the future. They argue that the early development of the large Caspian Pipeline Consortium (CPC) oil pipeline from Kazakhstan to the Black Sea and the Baku-Tbilisi-Ceyhan oil pipeline (BTC) from Azerbaijan to the Mediterranean were driven by Russia's clumsy obstructionism, strong Western and U.S. diplomatic pressure to move the oil to Western markets, and by strong sponsor companies Chevron and BP. However, in recent years pipeline developments have increasingly reflected the growing competence of the Central Asian governments—Kazakhstan, Azerbaijan, and Turkmenistan—in pursuing their energy and strategic interests and China's growing presence in the region. While at one time playing an important role, the United States is now the "away team" and must compete with more effective

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Oil and Gas Pipelines: Prospects and Problems

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Transit pipelines have often suffered from disputes and conflicts. However, in the future more transit pipelines will be required if markets are to be adequately supplied. Transit conflict can be explained through issues of political conflict, but in many cases disputes are triggered by economic disagreements over attempts to unilaterally renegotiate transit terms. This situation arises because such terms are the outcome of the relative bargaining power between the parties. Relative power changes over time, especially once investment is committed, and is also influenced as the value of the transit project changes with oil and gas price fluctuations. There are a number of possible solutions to mute conflict, but most face constraints. The only immediate solution is to introduce “progressive” transit terms to allow an automatic adjustment as the value of the transit project changes. While diversity is also important to reduce conflict, it does raise the question of who benefits and who pays for diversity of supply.

Events between Russia and Ukraine at the start of 2009 and between Russia and Georgia in 2008 have brought transit pipelines into the media spotlight. Growing attention is being given to possible pipelines from Russia to China and Japan, together with other possible routes such as Myanmar to China and Iran to Pakistan and India. Any reading of the history of transit pipelines suggests a tendency to produce conflict and disagreement, often resulting in the cessation of throughput, sometimes for a short period and sometimes for longer.¹ It is tempting to attribute this to bad political relations. While this is certainly part of the story, also important are disputes over the nature of the transit terms. Put simply, disagreements over transit pipelines have a significant economic basis.

After establishing definitions of different pipelines, this essay addresses three questions:²

- Why will oil and gas transit pipelines become more important to global energy markets?
- Why has the history of such pipelines been littered with conflict?
- What might be done to reduce conflict and make transit pipelines less troublesome?

Definitions

Three kinds of pipelines can be defined—domestic, cross-border, and transit. The key in differentiating between the three types is the nature of the governing jurisdiction. Domestic pipelines are within an existing sovereign territory. “Sovereign” is defined as the national or regional ability to unilaterally abrogate agreements. Such pipelines are subject to the laws and regulations of that territory. Cross-border pipelines directly link the producer state of oil and gas with the consumer state. Transit pipelines cross a third sovereign territory to get to market. Normally the terms of transit are enshrined in an agreement that, among other things, determines the transit payments. These are payments made to the transit government. Normally payments include a transit fee, but they can also set the terms under which the transit country can lift offtake.

Cross-border and transit pipelines have a number of common characteristics that can generate conflict. Different parties are involved, with different interests and motivations. This invites disagreement because of the benefits to be shared and because mechanisms exist to encourage both

¹ See, for example, Paul Stevens, “Pipelines or Pipe Dreams? Lessons from the History of Arab Transit Pipelines,” *Middle East Journal* 54, no. 2 (Spring 2000): 224–41; Paul Stevens, *Transit Troubles: Pipelines as a Source of Conflict* (London: Chatham House, 2009); and “Cross-Border Oil and Gas Pipelines: Problems and Prospects,” United Nations Development Program (UNDP)/World Bank Energy Sector Management Assistance Program (ESMAP), June 2003.

² The essay draws heavily on Stevens, *Transit Troubles*; and “Cross-Border Oil and Gas Pipelines.”

parties to seek a greater share. While these would apply to any commercial transaction, the key difference is that there is no overarching jurisdiction for cross-border pipelines. Thus, a sovereign government can simply ignore what is, after all, only a piece of paper,³ although such unilateral action is not without consequences (see below).

A cursory look at the history of transit pipelines illustrates negative experiences.⁴ In the past, negative experiences included pipelines in the Middle East; more recently, attention has been focused on pipelines in the former Soviet Union. This essay tries to understand why transit pipelines attract conflict and what might be done to mitigate such conflict.

Why Will Oil and Gas Transit Pipelines Become More Important to Global Energy Markets in the Future?

More transit pipelines will be needed in the future. Oil and gas reserves close to market are being depleted.⁵ Increasingly, new reserves are being discovered and developed further from markets and also often in situations where the source is landlocked. Because of economies of scale, road or rail transport of oil and gas is extremely expensive. This leaves pipelines as the only viable alternative for transporting significant volumes.⁶

There is growing demand for natural gas in the world's primary energy mix. Many gas markets have been constrained in the past by regulatory and institutional factors. If the former Soviet Union is excluded, the share of gas supplying commercial primary energy in the rest of the world has been flat at roughly 20% between 1969 and 1991.⁷ In recent years, constraints on gas markets have been eroded by a combination of factors: gas sector reform, creating gas-to-gas competition; electricity sector reform, leading to strong demand for combined-cycle gas turbine (CCGT) generation; and concerns about the environmental damage from other hydrocarbons. After 1991, the share of gas began to rise slowly (again excluding the former Soviet Union), but by 2007 it had still reached only 21%. However, the 2008 reference case by the International Energy Agency (IEA) projects an increase in gas demand between 2006 and 2030 of 150 billion cubic meters (bcm) in OECD Europe, 160 bcm in Eastern Europe and Eurasia, and 380 bcm in Asia.⁸

Another important point is that, with the possible exception of gas reserves in Myanmar and Bangladesh, intraregional gas trade in East Asia has reached the limit of regional gas export capacity. Future growth in Asian gas must come from the Middle East or Russia. Furthermore, considerable strides have been made in deep-water sub-sea pipelines.⁹ As a result, many routes previously regarded as impossible because of water depth are now feasible. Such pipelines, however, are not without criticism given the high-risk potential for environmental disasters.¹⁰ Finally, there has been a noticeable fragmentation of legal jurisdictions. The most spectacular example is the

³ For obvious reasons this argument is hated by lawyers, but that does not alter historical experience, as will be developed below.

⁴ "Cross-Border Oil and Gas Pipelines."

⁵ International Energy Agency (IEA), *World Energy Outlook 2008* (Paris: IEA, 2008).

⁶ B. McLellan, "Transporting Oil and Gas—The Background to the Economics," *Oil and Gas Finance and Accounting* 7, no 2 (Summer 1992).

⁷ "BP Statistical Review of World Energy 2009," BP plc, June 2009.

⁸ IEA, *World Energy Outlook 2008*.

⁹ For example, in terms of offshore operations, in 1988 400 meters (m) was the deepest feasible operation; this had reached 3,000 m by 2008.

¹⁰ A commonly heard concern relates to pipelines across the Caspian Sea, which not only is an earthquake zone but also has a unique ecosystem, notable for its sturgeon (and the associated production of caviar). There are also serious concerns among the Baltic littoral states with respect to the Nord Stream project.

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The Geopolitics of Northeast Asia's Pipeline Development

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Roughly a decade has passed since Russia's pipeline politics in Northeast Asia started to receive global attention. The first phase of the Eastern Siberia–Pacific Ocean (ESPO) crude pipeline came on line in December 2009, stretching 2,700 kilometers (km) from Taishet in Eastern Siberia to Skovorodino, located 70 km north of the Sino-Russian national border (see **Figure 1** below). A 1,000-km spur pipeline from Skovorodino to the Daqing oil field in China's Heilongjiang Province is scheduled for completion in autumn 2010. Russia plans to increase oil exports to China, including 15 million tons (Mt) of supplies by the spur pipeline to China. Moscow has also mapped out that another 15 Mt of crude oil will be supplied to the Kozmino port in Nakhodka Bay on the Pacific Ocean by rail before the second phase of the ESPO Pipeline is to be completed in the future. After completing the second-phase pipeline (2,000 km in length), Russia aims to realize additional capacity for supplying up to 50 Mt per annum of crude to the Pacific coast. Meanwhile, the projects for expanding natural gas pipeline networks have remained on paper, though the first liquefied natural gas (LNG) cargo was loaded from the Sakhalin-2 project in March 2009.

“The Energy Strategy of Russia for the Period up to 2030” (ESR-2030), approved by the Russian government in November 2009, emphasizes Moscow's plan to accelerate exploration and development of hitherto untapped hydrocarbon resources in Eastern Siberia and the Far East (hereafter abbreviated as “eastern Russia”). Russia aims to increase crude production in eastern Russia from 14.3 Mt in 2008 to 44–58 Mt by 2015, 71–83 Mt by 2022, and 101–8 Mt by 2030; and natural gas from 13 billion cubic meters (bcm) in 2008 to 43–53 bcm by 2015, 91–122 bcm by

FIGURE 1 The Eastern Siberia–Pacific Ocean pipeline



2022, and 130–52 bcm by 2030.¹ Accordingly, this strategy projects that eastern Russia's share in the country's total oil production will increase from 3% in 2008 to 10%–12% by 2015, 12%–14% by 2022, and 18%–19% by 2030. Natural gas production is projected to increase from 2% in 2008 to 7%–8% by 2015, 12%–14% by 2022, and 15% by 2030.²

Russia hopes to raise the Asia-Pacific region's percentage of the country's total oil exports from 8% in 2008 to 10%–11% by 2015, 14%–15% by 2022, and 22%–25% by 2030; and the region's percentage of Russia's natural gas exports from 0% in 2008 to 11%–12% by 2015, 16%–17% by 2022, and 19%–20% by 2030.³

Four major reasons for Russia's eastward advancement in the energy sector can be identified. First, hydrocarbon potential, especially that of crude oil, has peaked in Western Siberia, where about 70% of crude and more than 90% of natural gas have been produced to date. The ESR-2030 forecasts that maximum crude production in Western Siberia will decrease from 333 Mt in 2008 to 312 Mt by 2022 and 303 Mt by 2030. The growth in crude production in eastern Russia is expected to make up for the gradual decline of production in Western Siberia. With respect to the Khanty-Mainsk Autonomous Region in Western Siberia, which produces roughly 60% of Russia's crude oil, 67% of oil reserves are made up of so-called difficult oil whose translation into production is commercially unfeasible according to the Institute of Energy Strategy, which is affiliated with the Russian Ministry of Energy.⁴

Second, Moscow aims at tapping new market opportunities, with the center of global energy demand, triggered by China and India, having gradually shifted toward the Asia-Pacific region. Third, from a geopolitical standpoint it is imperative for Russia to overcome the economic backwardness of its own eastern flank, given that the gap of economic dynamism across the 4,000-km national border is ever-widening to the advantage of Russia's neighboring historical rival. Fourth, Russia wishes to diversify its supply routes in view of creating an "Asian card" to brandish against the West, especially since European Union nations have voiced concerns over increasing energy dependence on Russia.

Asymmetric Energy Demand Trends in China and Japan

China's energy demand is projected to increase steeply, whereas that of Japan has already peaked and is on the gradual decline. According to estimates by the Institute of Energy Economics, Japan (IEEJ), Japan's primary energy demand is forecasted to decline from 514 million tons of oil equivalent (Mtoe) in 2007 to 508 Mtoe in 2020 and 493 Mtoe in 2035, whereas demand in China will increase from 1,765 Mtoe in 2007 to 2,539 Mtoe in 2020 and 3,451 Mtoe in 2035. China will account for roughly 30% of the increase in global primary energy demand from 2007 to 2035.⁵

The *World Energy Outlook 2009*, published by the International Energy Agency (IEA), predicts that China's oil demand will increase from 358 Mt in 2007 to 557 Mt in 2020 and 758 Mt in 2030 at

¹ Ministry of Energy of the Russian Federation, *Energeticheskoi strategii Rossii na period do 2030 goda* [Energy Strategy of Russia for the Period up to 2030] (Moscow, 2010), Appendix 4, 4, 6.

² *Ibid.*, Appendix 3, 3–4.

³ *Ibid.*

⁴ Institute for Energy Strategy (IES), *Toplivno-energeticheskii kompleks Rossii, 2000–2007 gg* [The Fuel-Energy Complex in Russia in 2000–2007] (Moscow: Institute of Energy Strategy, 2008).

⁵ International Energy Agency (IEA), *World Energy Outlook 2009* (Paris: OECD/IEA, 2009). All the future prospects in this paper are based on reference scenarios.

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Central Asia's Pipelines: Field of Dreams and Reality

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On December 14, 2009, President Gurbanguly Berdimuhamedov of Turkmenistan hosted China's president Hu Jintao, Kazakhstan's president Nursultan Nazarbaev, and Uzbekistan's president Islam Karimov at a remote natural gas field in the eastern part of Turkmenistan for the inauguration of an 1,800-kilometer pipeline that connects all four countries and will transport 40 billion cubic meters (bcm) of gas annually when it reaches its ultimate capacity.¹ The ceremony marked yet another turning point in the two-decade saga of bringing Central Asian oil and gas to international markets after the collapse of the Soviet Union—a saga marked by a few successes and more failures.

Like the old Silk Road, this story has many twists and turns and culminates in multiple routes rather than a single direction. Unlike in the time of the Silk Road, Central Asian and Caspian countries are main actors in this modern journey and not just a crossroad. Many lessons can be drawn from the experience of the past twenty years to plot a future path. This essay will attempt to explore this landscape.

Russian Domination

The period immediately after the collapse of the Soviet Union was characterized by the overwhelming advantages former colonial power Russia held in transiting Central Asian oil and gas—advantages that were largely squandered in the 1990s. All the transportation and other logistical infrastructure of Central Asia was directed toward European Russia as part of the Soviet legacy. With respect to oil and gas infrastructure, pipelines crucially ran to Russia. Likewise, communications, railroads, river, and air transport were linked with Russia and nowhere else.

Central Asia was not only land-locked, it was completely isolated even from its immediate neighbors outside former Soviet space. Refineries in eastern Kazakhstan ran West Siberian crude oil, crude oil production from western Kazakhstan was shipped to Samara in the Russian Federation, and Azerbaijan received crude oil and natural gas from Russia. The Soviet Union was also a union of oil and gas.

Even as countries in the Caspian sought to strengthen their newfound political and economic independence by inviting Western oil companies to rapidly develop the region's oil and gas potential, these same major oil companies saw using the old Soviet pipeline system as the easiest way to evacuate their initially low volumes in order to defer capital expenditure on new transportation infrastructure.

Thus, Chevron, which was the first major entrant in Central Asia, based its initial plans on Tengiz production continuing to go to Samara. The company made offers to Russian oil pipeline monopoly Transneft to invest in upgrading the capacity of that line and in debottlenecking the Tikhoretsk to Novorossiysk segment of the major Russian export line to the Black Sea, so as to defer costly construction of a new line for initial Tengiz production of only 90,000–180,000 barrels per day. Similarly, BP and partners in the Azerbaijan International Oil Consortium (AIOC) wanted to take advantage of the existing Soviet-era pipeline by reversing the direction of flow so that early oil production of up to 100,000 barrels per day from offshore Caspian fields could be shipped out of the Black Sea by connecting with the same line to Novorossiysk.

¹ Marat Gurt, "China Extends Influence into C. Asia with Pipeline," Reuters, December 14, 2009, <http://uk.reuters.com/article/idUKSGE5BD0BQ20091214?sp=true>.

Unfortunately, Russian political ambition and commercial obstinacy thwarted both attempts at cooperation by the Western oil majors in the 1990s. Soviet industry practice, which persists to this day in Russia, traded oil by weight instead of volume, which is the international practice. Additionally, it did not adjust for market values of different crude oils based on quality differences. Crude was simply exchanged or accounted for on a ton-for-ton basis, without regard to whether it was light (producing higher-value products), sweet (low sulfur) or sour (high sulfur), and full of other impurities that make certain crudes more difficult to refine, or not. Transneft provided for neither the batching of different grades of crude oil nor a quality bank to adjust for differentials in market value. As a result, Tengiz and Azeri Light (produced by AIOC) crudes, which are both light and sweet, containing large cuts of valuable gasoline and gasoil when refined, would have lost around 20% of their economic value if exchanged for Urals (the Russian export blend), as Chevron and BP had originally intended.

Western Alternatives

Consequently, both Chevron and BP and its AIOC partners were forced to find other transportations options for their initial production from the world-class fields they were developing—Tengiz in Kazakhstan and the offshore Azeri-Chirag-Guneshli (ACG) fields in Azerbaijan. Russia lost an opportunity to integrate its logistical network with the global market by not accommodating the new political realities in Central Asia and the commercial requirements of Western companies operating in the Caspian.

Instead, Chevron developed an arduous process for shipping crude oil by rail and barge to the Black Sea via Georgia and Ukraine and to as far away as Finland and China from Tengiz. Transneft's loss became the Russian railroad's gain. BP and most of its AIOC partners invested over \$500 million in constructing an "early oil" pipeline from Azerbaijan to a new marine terminal at Supsa in Georgia.

This early experience in dealing with Russia informed Western oil companies' determination to control their own exit routes without overly relying on Russia. This was always the intent of their host governments, especially Azerbaijan led by President Heydar Aliyev. Now these strategic national interests converged with the major oil companies' vital commercial interests and gained their strong financial backing.

Chevron restructured the previously ill-conceived attempt to build the Caspian Pipeline Consortium (CPC) project into an oil company-controlled pipeline dedicated primarily to moving crude oil from Western oil company production in Kazakhstan to its own separate terminal on the Russian Black Sea coast. The 1,500-kilometer CPC Pipeline was completed in 2003 at a cost of \$2.6 billion. It has a current capacity of 450,000 barrels per day and an ultimate capacity of 1.35 million barrels per day,² although Russia blocked the pipeline's expansion until recently. BP and partners forged ahead after the Baku-Supsa line to build a more ambitious 1,800-kilometer, \$4.2 billion Baku-Tbilisi-Ceyhan (BTC) Pipeline to the Turkish Mediterranean coast. The pipeline started operations in 2006 and can ship over a million barrels per day, bypassing the Turkish Straits and also Russia.

² Caspian Pipeline Consortium, "General Information," 2004, <http://www.cpc.ru/portal/alias!press/lang!en-us/tabID!3357/DesktopDefault.aspx>.

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India's Gas Pipeline Efforts: An Analysis of the Problems That Have Prevented Success

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In February 2005, the Indian government approved plans for talks with six countries on the construction of gas pipelines that would pass through Afghanistan, Bangladesh, Iran, Myanmar, Pakistan, and Turkmenistan. This new “pipeline diplomacy” was seen as a key foreign policy priority, as India’s energy requirements are rising quickly. This paper will review the drivers that have led to India’s pipeline diplomacy, then look at the three proposed pipelines before analyzing the problems that have frustrated their development.

The Centrality of the Question of Energy Security

India needs energy security for domestic and foreign policy reasons. First and foremost, economic growth at 8%–9% must be secured, even in the current economic slump. Regarding foreign policy, the drivers are India’s aim to play a leading global role and to be recognized both economically and politically as a rising power. This was former prime minister Jawaharlal Nehru’s vision for India, and only the means to achieve this vision have been altered to fit the times. In order to maintain economic growth and the popular image of a rising power, India needs to secure energy at a rate that outstrips population growth. India’s growing population is expected to reach 1.18 billion by 2010, 1.36 billion by 2020, and 1.57 billion by 2030—i.e., a more than 50% increase in less than 30 years. Since India is an energy supply–constrained economy, the sustainability of development and growth will depend on the availability of affordable, adequate, and reliable energy supplies and massive investments in social and physical infrastructure. Compared to its neighbors, India’s projected energy needs are huge (see **Figure 1**).

India’s primary energy demand is expected to grow by 6% if GDP grows at the estimated 7%–8% over the next decade. Coal is the largest energy source, constituting 51% of the total primary energy basket; the rest includes 36% oil, 9% gas, and 4% nuclear and renewable sources.¹ India imports 75% of its 960 million barrels of oil per annum, raising the country’s vulnerability to volatile oil markets. The Reserve Bank of India reports that every one-dollar rise in the international price per barrel of crude oil adds \$600 million (around 28 billion Indian rupees) to the country’s import bill.² According to the International Energy Agency, a \$10 rise in crude prices (from \$25 to \$35) would reduce India’s GDP by 1%.³ Hence, there is an acute need to diversify types as well as regional sources of energy to ensure the continuous availability of energy at affordable prices.⁴

India’s proven natural gas reserves are 38 trillion cubic feet (tcf) (or 1.075 trillion cubic meters [tcm]).⁵ India produces 85 million metric standard cubic meters per day (mmscmd) or 1.08 tcf per

¹ See figure in Marie Lall and Iftikhar A. Lodhi, “The Political Economy of the Iran-Pakistan-India Pipeline,” Institute of South Asia Studies (ISAS), Working Paper, no. 26, October 23, 2007.

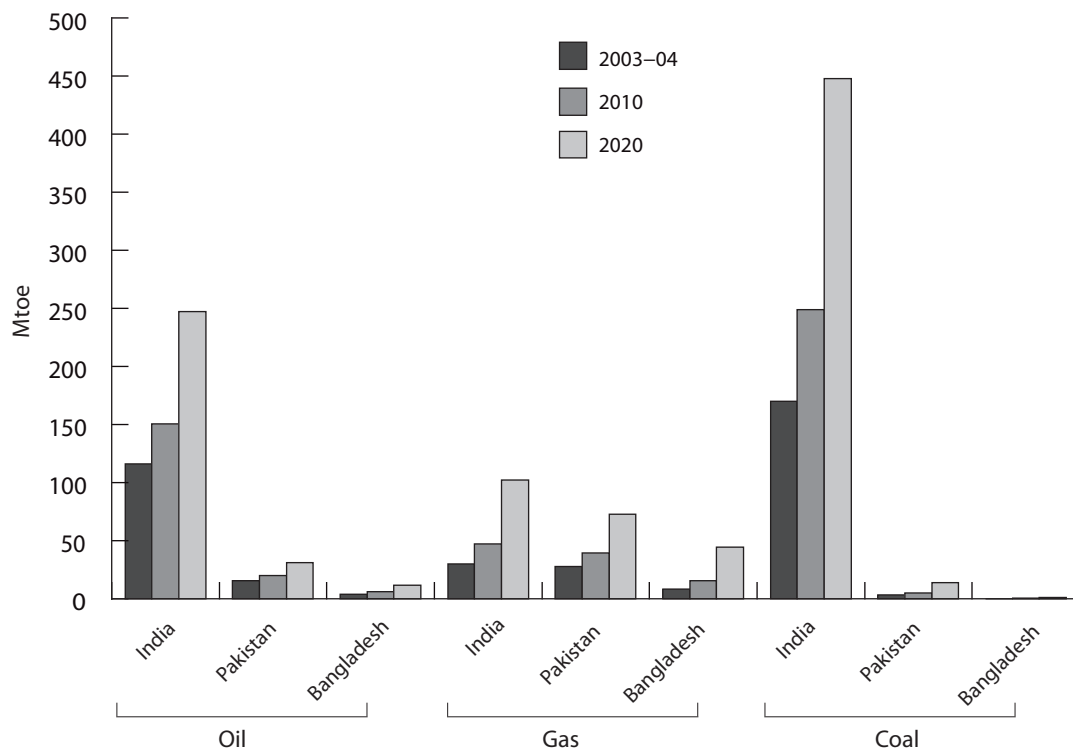
² Paranjay Guha Thakurta, “High Oil Prices Would Hit Indian Economy,” *Hindu Business Line*, March 20, 2004, <http://www.thehindubusinessline.com/2004/03/20/stories/2004032000240800.htm>; and Asian Development Bank (ADB), *Asian Development Outlook 2006* (Hong Kong: ADB, 2006).

³ “Emerging Oil Price Scenario and Indian Industry,” Federation of Indian Chambers of Commerce and Industry, December 2004, <http://www.ficci.com/surveys/FICCI-oil-survey-dec2004.pdf>.

⁴ A slightly different scenario is painted by the U.S. Energy Information Agency in whose reference case scenario the primary energy demand in India is expected to grow by 3.6% per year, doubling from 537 million tons of oil equivalent (Mtoe) in 2005 to 1,299 Mtoe in 2030. India will need to quintuple its electricity-generation capacity from 1,600 gigawatts to nearly 8,000 gigawatts. See Ariel Cohen, Lisa Curtis, and Owen Graham, “The Proposed Iran-Pakistan-India Gas Pipeline: An Unacceptable Risk to Regional Security,” Heritage Foundation, Background Paper 2139, May 30, 2008, <http://www.heritage.org/Research/AsiaandthePacific/bg2139.cfm>.

⁵ One tcf is equivalent to 0.0283 tcm.

FIGURE 1 Energy needs (oil, gas, and coal) in India, Pakistan, and Bangladesh



	Oil			Gas			Coal		
	India	Pakistan	Bangladesh	India	Pakistan	Bangladesh	India	Pakistan	Bangladesh
2003-04	116.0	15.2	3.7	29.7	27.3	8.3	169.9	3.3	0.0
2010	150.2	19.7	5.7	47.2	39.2	15.5	248.7	4.7	0.5
2020	246.9	30.9	11.6	101.9	72.8	44.0	447.6	13.9	0.9

SOURCE: Marie Lall, "Introduction," in *The Geopolitics of Energy in South Asia*, ed. Marie Lall (Singapore: Institute of Southeast Asian Studies, 2009), 1-14.

annum of natural gas, almost half of potential demand.⁶ The natural gas demand is expected to reach about 400 mmscmd by 2025 (see **Figure 2**).⁷

Given the need for increased natural gas, India's pipeline diplomacy during the first decade of the 21st century was crucial. However, this diplomacy failed to bear the expected results. The next section will give details of the three pipelines that had been planned and the stage at which they are currently stuck.

⁶ Siddhartha Srivastava, "India Grapples with Energy," *Asia Times Online*, March 24, 2007, http://www.atimes.com/atimes/South_Asia/IC24Df01.html.

⁷ There have been two contentious and important issues in India in the context of gas and pipeline imports: demand and supply projections and pricing. Much of the controversy over demand and supply estimates, besides political motivations, arises from employing different econometric models and the inherent price sensitivity of the gas market. However, there is no substantial difference in the projections from the different agencies except in the report by India's Ministry of Petroleum and Natural Gas, "India Hydrocarbon Vision 2025" (IHV 2025). The IHV projections (see Figure 2) are substantially higher vis-à-vis other models because they take into account the existing supply and demand gap that other models do not incorporate. The eleventh five-year plan (2007-12) acknowledges this gap, which is currently managed by arbitrary rationing, resulting in an under-utilization of the installed capacity in the fertilizer sector as well as the power sector. See Planning Commission, Government of India, "Draft Report of Expert Committee on Integrated Energy Policy," 2005, 34, 49.

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The Geopolitics of the Myanmar-China Oil and Gas Pipelines

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Two documents signed between China and Myanmar in 2009—a bilateral agreement between the two governments in March and a memorandum of understanding (MOU) between China National Petroleum Corporation (CNPC) and Myanmar’s Ministry of Energy in June—made China’s decision to build a cross-country crude oil and gas pipeline from Myanmar official and mapped out the parameters.¹ The crude pipeline will start from the port of Kyaukphyu in Rakhine State to Kunming in Yunnan Province. This 690-mile crude pipeline is designed to transport the 22 million tons of oil per year (440,000 barrels per day) that China imports from the Middle East and Africa to Southwest China. In parallel with the crude pipeline, the 1,123-mile natural gas pipeline will deliver 12 billion cubic meters (bcm) of natural gas per year from blocks A-1 and A-3 in the Bay of Bengal, operated by a consortium led by the Korean-based Daewoo International, to Yunnan Province and possibly other parts of Southwest China. Investment required for the crude and gas pipelines was reported to be \$1.5 and \$1.04 billion, respectively, with CNPC holding a 50.9% stake and managing the project and Myanmar Oil and Gas Enterprise holding the remaining 49.1% stake. CNPC will build sections of the pipelines in both China and Myanmar. It will also build an oil terminal with 600,000 cubic meters (cm) of storage capacity and an oil berth capable of receiving tankers of up to 300,000 dead weight tons at the starting point of the pipeline in Myanmar. CNPC commenced the construction of the two pipelines on June 3, 2010.

Any knowledge of the geographical terrain that the pipelines will traverse or of the complex environment that shapes Myanmar’s domestic politics and foreign relations prompts reservations about the pipelines. Why did Beijing decide to build them?² How did energy dynamics and geopolitical concerns shape Beijing’s decision? Given that Myanmar is already dependent on Beijing for political cover in the international system and on Chinese investment to prop up its economy, how will these pipelines affect bilateral relations? Further, how will Beijing’s increased influence in Myanmar affect the interests of other stakeholders, especially India and the United States? India sees Myanmar as part of its backyard and desires to secure more natural gas from the country. What do these planned Myanmar-China pipelines mean for India? While showing signs of adopting a new approach, the U.S. government still maintains sanctions on Myanmar. An important question thus arises: what are the implications of these pipelines for U.S.-China relations vis-à-vis Myanmar? This essay will address these questions.

Drivers of the Myanmar-China Oil Pipeline

The China-Myanmar crude oil and gas pipelines were driven by divergent dynamics. The crude pipeline was driven by a set of convoluted factors, including the desire of scholars to make a real policy impact, the parochial interests of local governments, rivalry among Chinese national oil companies (NOC), concerns over oil security, and geopolitics. As a policy idea, the crude pipeline project originated from an academic proposal competing with other ideas aimed at alleviating Beijing’s concerns about the country’s oil supply security challenges. These concerns became public when Hu Jintao, the secretary general of the Central Committee of

¹ Winnie Lee, “China, Myanmar Sign JV Agreement on Building Oil, Gas Pipelines,” *Platts Oilgram News*, March 30, 2009; and Winnie Lee, “CNPC, Myanmar in MOU on Cross-Country Pipeline,” *Platts Oilgram News*, June 22, 2009.

² In fact, quite a few oil and pipeline engineering experts in Beijing were opposed to building the two pipelines. Author interview with a Yunnan-based scholar, April 4, 2010.

the Chinese Communist Party (CCP) and president of China, reportedly framed for the first time at the Central Economic Work Conference in November 2003 the country's financial and oil issues as matters of economic security. He reportedly expressed worries about the country's dependence on the Strait of Malacca for 80% of its oil imports and perceived attempts by other states to gain control over the narrow waterway.³ Hu's concerns were interpreted as a signal that the central government in Beijing was anxious to tackle the country's "Malacca dilemma," ushering in a marketplace of ideas. These included four competing proposals: (1) opening up a Kra Canal that would link the South China Sea to the Indian Ocean by cutting across the Thai Isthmus, (2) building an underwater oil pipeline below the line that the Kra Canal would travel, (3) constructing an inter-Asian rail system that could carry oil to China, and (4) building an oil pipeline to Western China from Pakistan or Bangladesh.

Against this backdrop, three professors from the Yunnan University School of International Relations—Li Chenyang, Qu Jianwen, and Wu Lei—started in early 2004 to research a possible pipeline from Sittwe in Myanmar to Kunming in Yunnan as an alternative to reduce China's dependence on the Strait of Malacca, and proposed this idea to the State Council through the Yunnan provincial government. Their proposal was made public for the first time in June 2004 by *Liaowang Dongfang Zhoukan* [Oriental Outlook],⁴ a leading policy journal owned by Xinhua. Two months later, the three scholars authored an op-ed in *Cankao Xiaoxi* [Reference News], publicly refuting the shaky economic and security grounds of the Kra Canal option and formally proposing building the Myanmar-China oil pipeline for five reasons: (1) it would enable China's crude imports to skirt the Strait of Malacca; (2) an oil pipeline from Myanmar to Kunming would be at least 1,200 kilometers (km) shorter than the shipping route to Guangzhou via the Strait of Malacca before piping oil to southwestern China; (3) financing the pipeline construction would limit the influence other countries might have on Myanmar and turn the country into a strategic buffer zone for China; (4) the history, current status, and future prospect of Myanmar-China relations would guarantee the security of the pipeline; and (5) building the pipeline would be cheaper than other alternatives because there is already a 400-km-long railway in operation and plans to build a railway to connect the remaining 500 km between Sittwe and Kunming.⁵

The academic proposal immediately caught the attention of the local government in Yunnan Province, which identified with the proposal right away and became a forceful champion for the proposal's elevation to the central government. On August 12, 2004, seven days after Li, Qu, and Wu published their op-ed, Bai Enpei, a member of the CCP Central Committee and secretary of the CCP Yunnan Provincial Committee, issued important instructions on the proposal. Two days later, Qin Guangrong, executive deputy governor, convened a special meeting on the proposed pipeline.⁶ One day after the meeting, Li, Qu, and Wu's proposal, entitled "Proposal about Carrying Out a Feasibility Study of Building the Oil Pipeline from Myanmar to Kunming," received support from Zeng Peiyan, then member of the Politburo of the CCP Central Committee and vice premier, suggesting that the National Development and Reform Commission (NDRC) "study,

³ Xu Ying, "Zhongguo kaituo Miandian shiyou tongdao" [China Explores Oil Pipelines through Myanmar], *Liaowang Dongfang Zhoukan* [Oriental Outlook], July 12, 2004.

⁴ Ibid.

⁵ Li Chenyang, Qu Jianwen, and Wu Lei, "Pojie 'Malaijia' zhi Zhongguo fang an fenxi" [Analyzing Chinese Proposals to Resolve the "Malacca Dilemma"], *Cankao Xiaoxi* [Reference News], August 5, 2004.

⁶ Shi Haitao, "Woxiao xuezhede keyan chengguo shangsheng chengwei guojia Zhongda juece" [The Research Output by Scholars from Our University Became Elevated as a National Key Decision], News Center of the Yunnan University, May 21, 2005, available at <http://www.news.ynu.edu.cn/jxky/2009-05-21/0-8-5416.html>.

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Pipeline Politics in Asia: Implications for the United States

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The conference discussion, essays, and comparative analysis of four different regional pipeline cases raised a wide range of issues with significant implications for U.S. energy security and strategic interests in Eurasia. The cases examined brought into sharp relief three strongly interrelated, sometimes conflicting, energy security and strategic interests for the United States in Asia's developing pipeline geopolitics and suggested new, more demanding challenges in the future.

First, in a broad sense, U.S. (and global) energy security is fundamentally enhanced by the maximum development of new oil and gas supplies in Eurasia and the development of a highly diversified regional pipeline infrastructure to transport that oil and gas to booming Asian markets. As one U.S. government participant put it during the conference, "the U.S. does not see energy security as a zero-sum game....the vast energy resources in Russia and Eurasia will play an important role in the long-term energy security of both East and West." Global oil supplies are fungible and markets are highly integrated and fundamentally global in nature. Major supply shortages or disruptions in any part of the world affect the entire global market. Oil prices rise for all consumers regardless of where their particular oil imports originate. Consequently, the United States has a strong interest in promoting investments that bring more incremental supply to anywhere in the global market and investments that produce a more diversified range of oil supply routes.

Natural gas markets are by their nature more regionalized, but the principle remains the same: more supplies and varied pipeline routes across regions enhance the flexibility of gas markets, strengthen supply security, and reduce price volatility for all those reliant on cross-border gas flows. The phenomenal growth of liquefied natural gas (LNG) markets over the past two decades adds to that flexibility and improved supply security. Hence, in the cases on which the conference focused, the United States has largely pursued its fundamental energy security interest in supporting the successful development of new oil and gas pipelines from Russia to East Asia, new pipelines from Central Asia to Asia, new gas pipelines to meet India's rising energy needs, and oil and gas pipelines to supply China's booming demand.

Nevertheless, the conference also suggested that the United States has significant energy security and strategic interests at stake in the geography of pipeline development in Eurasia that overlay and, in some cases, reshape how Washington pursues its energy security goals. While the United States has a basic interest in promoting the flow of Eurasian oil and gas to Europe and Asia, it has also actively sought to influence the geography of pipeline routes from Central Asia in order to limit Russia's control over European oil and gas markets as well as over the scale and direction of oil and gas supplies from Central Asia. As suggested in the essay by Edward Chow and Leigh Hendrix, Russia has worked diligently and often clumsily since the collapse of the Soviet Union to maintain as much control as possible over the transport of Central Asian oil and gas to Western markets. Such efforts have helped reassert broader Russian diplomatic and economic influence in Central Asia while at the same time protecting Gazprom's dominant gas market position in Europe from competition from Central Asian gas. Russia and Gazprom, as the suppliers of 50% of Europe's imported gas, have sought to exclude other Central Asia gas supplies from European markets or at least to ensure that any gas flows to the West through Russia and Gazprom's system. Hence, the United States has worked diplomatically to support commercially questionable alternative gas pipelines, such as the Nabucco project, that would supply gas to Europe from Azerbaijan, Turkmenistan, and possibly Iraq, while bypassing Russia.

Similar motivations have shaped U.S. policy toward the key future oil development in the region: looming production from the huge offshore Kashagan oil field in Kazakhstan. The United States is supporting proposals to transport Kashagan oil southward across the Caspian to Azerbaijan, where it would be transported to the Mediterranean Sea through an expanded Baku-Tbilisi-Ceyhan (BTC) oil pipeline, rather than northward through Russia to Western markets. Similarly, there has been concern in Washington that China's new gas and oil supply pipelines from Central Asia could undermine the potential supply scale needed for U.S.-favored, Western-directed pipeline projects, such as the Nabucco project or a trans-Caspian pipeline for Kashagan oil. This all suggests that U.S. strategic and energy security goals regarding Eurasian oil and gas pipelines are more complex than simply maximizing the volumes in the name of energy security and market flexibility.

A third layer of complexity, evident in the two regional cases of India's gas pipelines and the Myanmar-China pipelines, also affects U.S. interests in Eurasia's pipeline sweepstakes. These cases demonstrate the fundamental trade-off between U.S. energy security goals of maximizing the flow and transport diversity of oil and gas supplies to Asia and Europe and the strategic goals of isolating pariah states such as Iran and Myanmar. This duality is perhaps most apparent in the case of India. On the one hand, the United States has forged a new nuclear technology agreement with India aimed at boosting desperately needed electricity supplies, has been building a strong clean energy partnership with India, and has also sought to strengthen its overall strategic relationship with India as a way to help counterbalance rising Chinese power in Asia. On the other hand, despite a clearly robust understanding of India's critical energy needs, particularly for cleaner-burning natural gas, Washington has strongly opposed both the Iran-Pakistan-India gas pipeline and the Myanmar-India gas pipeline proposals as part of an overriding strategy of isolating Iran and Myanmar. Similarly, China's construction of new oil and gas pipelines across Myanmar to southeast China will boost Myanmar's revenues and strategic options significantly, further undermining U.S. and Western efforts to pressure the regime into human rights improvements. In addition to highlighting the added layer of complexity in U.S. energy security and strategic goals in the region, these two cases also highlight the very limited leverage the United States has over these developments. Washington had virtually no leverage with Beijing or Naypyidaw in influencing the outcome of the China-Myanmar pipelines. Moreover, the main obstacle to India going forward with the Iran gas pipeline is probably not U.S. opposition but New Delhi's reluctance to rely on Pakistan as a transit state. If this problem could somehow be solved, India would very likely move forward with the pipeline, given the country's strong strategic relationship with Iran and dire need for new, cleaner energy supplies.

Hence, while accepting that Washington does not see Eurasian pipelines and new oil and gas supply development as a zero-sum game, the United States clearly has a range of cross-cutting and sometimes conflicting strategic and energy goals in the region that must be constantly balanced and re-evaluated. Given this context, several key issues loom in the near future. First, Russia and the Central Asian states have become far more capable and active in pursuing their national energy interests since the disorder of the immediate post-Soviet era. This development seems likely to weaken U.S. influence over the direction of future pipelines and thus has important implications for the viability of the Nabucco project as well as for U.S. preferences that Kashagan oil move westerly across the Caspian. Second, China's rapidly growing economic and diplomatic power and rising energy investment in Central Asia will increasingly reorient the direction of the regional