

**PROSPECT OF ENERGY LINK BETWEEN CENTRAL ASIA AND
CHINA**
A STUDY ON THE DEVELOPMENT OF “ENERGY SILK ROUTE,”
THE TURKMENISTAN – CHINA GAS PIPELINE

Master of Arts in Law and Diplomacy Thesis

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April 16, 2009

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Abstract:

As the global economy grows at an unprecedented pace and with broader interactions among states and populations, energy has become an increasingly critical issue. Historically, energy resources have been a source of competition and discord among states, rather than a focus of cooperation. In fact, states have gone to war pursuing energy resources available within other nation states. In the contemporary world, states have agreements with others for energy cooperation and sharing infrastructures, and global markets to exchange energy commodities have been developed. However, the system for distributing energy resources that are spread unequally throughout the world still require greater investment and more effective strategies to allocate capital and technology to mitigate conflicts and create opportunities for stakeholder cooperation. Meanwhile, debates over energy issues are often complicated by various factors related to politics, economics and technology, and the confusion that stems from many these various aspects often conceals fundamental issues and hinders the establishment of appropriate policies. This thesis emphasizes the economic rationale of the development of a new international energy infrastructure and examines the reasons why stakeholders make huge investments to transport energy resources across national borders.

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Introduction

The collapse of the Soviet Union revealed the existence of rich natural resources in the former Soviet republics, which would be available beyond the former Soviet bloc. It seemed that those resources in the former Soviet Union would be open to international markets through market oriented trade. Russia strategized the use of natural resources for further economic growth and expansion of its political power in international relations, especially after Vladimir Putin became president. Other former Soviet republics that have the potential to be energy exporting states have been eager to follow Russian strategy while the strategies of international relations, including relations with Russia, vary from state to state depending on geopolitical conditions and the leaders' policies.

However, there are challenges for those former Soviet states, including Russia, in implementing a strategic policy of using natural resources for economic and political objectives. One of the major obstacles to economic globalization in the Central Asian states is the infrastructure, which was designed for the Soviet command economy. The network of energy supply systems is a prominent example of that infrastructural constraint. The European gas crisis caused by the conflict between Ukraine and Russia in January 2009 might be seen as political discord between two former Soviet states; however, the fundamental issue is that the energy network connecting Russian gas to

European markets remains incomplete and has been relying on limited routes, such as the one passing through Ukraine. In contrast, the European energy network is relatively developed compared to other regions. Thus, Central Asian natural gas is a prisoner of the region's geography and the limited export routes that make it hugely dependent on Russian gas pipelines. Because of Russia's self-interest and control over export pipelines, Central Asian gas can reach only a handful of markets.¹ Turkmenistan has been recognized as a large natural gas holder and in fact was a one of major sources of natural gas for the Soviet Union. Its major source of revenue is its natural gas exports, and that strategic resource can be exported only through Russian-owned pipelines although a minimal amount goes to Iran through its own pipeline.

Nearly two decades have passed since the collapse of the Soviet Union and this period coincided with strong Chinese economic growth. With its huge population and pragmatic economic reforms, China became a "world factory" yet it still has significant potential for further development. In the process of this growth, despite its rich domestically available energy resources, China became a net importer for oil in 1993, for gas in 2006, and even for coal in 2007² as the rapid economic growth is associated with a tremendous increase in energy consumption. China consumes more than 15

¹ Eugene B. Rumer, "China, Russia and the Balance of Power in Central Asia", *Strategic Forum* no. 223, Institute for National Strategic Studies (2006) pp. 3

² Johathan Stern ed., *Natural Gas in Asia*, Chapter 2 Fridley David, Natural Gas in China (2008) pp. 40

percent of the world's energy - which is the second largest after the US - while its energy consumption per capita remains much smaller than average industrialized countries. China started hunting for energy resources abroad by using its state-owned oil companies. But it had the disadvantage of being the late-comer in many major oil and gas fields that had already been explored and developed by international oil companies. In this context, the emergence of newly independent neighbors to its west after the collapse of the Soviet Union has had significant meaning for China. Indeed, some of those states possess energy resources that are relatively undeveloped while China's relationship with those Inner Asian neighbors is of importance for security reasons as well due to their geographic positions, which are adjacent to China's Xingjian province.

There are a number of new pipelines that connect energy resources in the former Soviet states to the international markets that bypass areas of political risk, but many of those remain in the planning stage. This thesis analyzes the factors and driving force for an international pipeline to be established, by examining the development of the Turkmenistan - China Gas Pipeline (TCGP), and it tries to find implications for the development of an international energy infrastructure.

PART I PIPELINE AND CONTEXT

Chapter 1 Energy Silk Route Pipeline/Turkmenistan - China Gas Pipeline (TCGP)

In late 1992, the China National Petroleum Corporation (CNPC) together with Japanese trading house Mitsubishi Corporation visited Turkmenistan to propose what became known as the Energy Silk Route Pipeline that would bring gas from Turkmenistan to China, South Korea, and Japan. The original idea was that Turkmen and Kazakh gas would be piped across Central Asia to the east coast of China, and from there to Japan and South Korea. This route starts in the gas producing regions of southeastern Turkmenistan. The projected pipeline would pass through Bukhara - Tashkent in Uzbek, - Shymkent - Zhambyl - Almaty in Kazakhstan, and along the existing Tashkent - Bishkek - Almaty pipeline. It is around 250 km from Almaty to the Chinese border. The estimated length of the Central Asian section is about 2,000 km. In China, it would pass through Korla - Hami in Xinjiang, Yumen in Gansu, Zhongwei in Ningxia, Xi'an in Shaanxi, Zengzhou in Henan and Lianyngang in Jiangsu. The total length of the onshore section is estimated at around 6,200 km. From the east coast of China, the pipeline would extend to Mokpo in South Korea and Niigata in Japan, with a total offshore length of around 2,300 km.³

³ Akia Miyamoto, *Natural Gas in Central Asia: Industries, Markets and Export Options of Kazakhstan, Turkmenistan and Uzbekistan*, Energy and Environmental Programme, The Royal Institute of International Affairs (1997) pp. 71-72

From 1993 to 1996, a joint feasibility study - in which Exxon Mobil also participated - was carried out. It concluded that the pipeline would not be viable due to its exorbitant cost and uncertain gas reserves in Turkmenistan. Beyond the joint feasibility study alone, many energy experts were skeptical about likelihood of this ambitious project. Akira Miyamoto, an energy analyst for Japan's Osaka Gas, argued that the mid-term projection of demand for imported natural gas in China was difficult to project, and that it was uncertain whether Japan and South Korea, where the infrastructure for importing natural gas in the form of Liquefied Natural Gas (LNG) are already developed, would need expensive piped gas from a distant Central Asia. He also argued that economically, gas from Central Asia was likely to be competitive only in western China because of the distance to the markets farther east.⁴ Hooman Peimani, a political scientist, stated that the Chinese route for exporting Turkmen gas is impractical because of its length and extremely high cost, and it would only make sense if China were the final market for the export and would buy a very large volume of gas for a long period of time to make the export operation economically feasible.⁵

After a number of high profile moves in early 2006 to raise the price of Turkmen natural gas for Russia, Ukraine, and Iran, then-President of Turkmenistan, Saparamurad

⁴ Miyamoto pp. 72-76

⁵ Hooman Peimani, *The Caspian Pipeline Dilemma: Political Games and Economic Losses* (2001) pp. 47, 114

Niyazov, signed the General Agreement on Gas Cooperation between China and Turkmenistan in April 2006. As this was merely a framework agreement without any specifications, the pipeline project was not yet ready to be undertaken. The price of gas should be the critical element in any possible deal between Turkmenistan and China, but this framework agreement did not specify a price for China's gas purchase that was to begin in 2009. Instead it stated "the price would be set on a reasonable and just basis, based on a comparable price on the international market, and paid exclusively in US dollars." Some experts viewed the Turkmen agreement with China as a bargaining ploy in negotiations with Russia, which could stand to lose out if Turkmenistan were to begin shipping gas to China without boosting production. It seemed that this framework agreement placed pressure on the negotiations with Turkmen customers, Russia, Ukraine, and Iran. Notably, later in 2006, Ashgabat secured a hefty price increase from Moscow. Also, some experts argued that Uzbekistan's international isolation and close ties to Russia would render it an unlikely choice as a transit country for a pipeline project that Moscow would prefer to scupper.

While it is not clear whether Niyazov's intention of agreement with China was a ploy in negotiations with other states or a realistic idea to export Turkmen gas to the east, the agreement was inherited from Niyazov, who died in December 2006, by his successor, the second President of Turkmenistan, Gurbanguly Berdimukhammedov.

President Berdymukhammedov suggested that Turkmenistan might seek to diversify its export options, which currently were dependent on Russia with the exception of a single pipeline to Iran.⁶ Despite the skepticism of observers and experts, the Turkmenistan - China pipeline project has become an actual deal for natural gas export.

In July 2007, CNPC signed the Production Sharing Agreement (PSA) for the development of natural gas reserves in eastern Turkmenistan, specifically on the right bank of the Amu Darya River, and a 30-year gas sale and purchase of up to 30 billion cubic meters (bcm) per year. The CNPC's PSA is scheduled to cover only around 13 bcm per year of the gas foreseen for export, but they had agreed in the 2006 framework agreement that the rest would be provided by Turkmen gas from other production sites. The agreement held that, "if additional volumes of gas are required to build the Turkmenistan China gas pipeline, the Turkmen side can guarantee gas shipments from other gas fields."⁷ A groundbreaking ceremony for the relatively short section of the pipeline within Turkmen territory - 188 km - took place in August 2007, and the 500 million US dollars contract for construction was awarded to a Russian construction company, Stroitransgaz, which is a subsidiary of Gazprom. As mentioned previously, some observers were concerned about the possible objection by Uzbekistan to the

⁶ Eurasia Insight, "Turkmenistan: Interim Leader Looks Cautiously to China" (January 22, 2007)



⁷ Daniel Kimmage, "Turkmenistan – China Pipeline Project Has Far-Reaching Implications", Radio Free Europe (April 10, 2006) (website accessed on April 14, 2009)

pipeline construction taking place in its territory, but China signed an agreement with Uzbekistan on pipeline construction in April 2007, even before the CNPC's PSA. By late 2007, the Chinese plan appeared to have crystallized on developing a pipeline from Turkmenistan to China via Uzbekistan and Kazakhstan, and possibly a second line bringing gas from a Kazakh gas field in western Kazakhstan. At this point, the idea of transporting Turkmen gas to Japan and South Korea had been already abandoned. Instead, the plan concentrated on the market in China, and the pipeline would be interconnected with China's West - East Pipeline. Thus, it has since become the Turkmenistan - China Gas Pipeline (TCGP) instead of the Energy Silk Route Pipeline.

Map: New Natural Gas Pipelines going to China

(map: IEA)



-  Kazakhstan – China Gas Pipeline (planned)
-  Turkmenistan – China Gas Pipeline (under construction)

The construction in Uzbekistan of a 530 km line through southern Uzbekistan was begun in June 2008. The longest section of the pipeline crosses southern Kazakhstan, a length of around 1,300 km. In fact, a groundbreaking ceremony for the Kazakh portion took place in July 2008. CNPC and PetroChina have established the Sino-Turkmenistan Gas Pipeline Corporation to construct the pipeline that will stretch from the Amu Darya fields in Turkmenistan to Urumqi in western China. This has been done in cooperation with three Central Asian states that have different interests and international relations, especially with Russia. On the occasion of President Hu Jintao's visit to Ashgabat in August 2008, the Turkmen confirmed an offer, first raised in Beijing during the Olympics, to provide eventually 40 bcm of gas to China annually. The agreement calls for the first volumes to be delivered at the end of 2009, and for 30 bcm per year to be delivered to China by 2012.⁸

Chapter 2 Geopolitical Background

2.1 Central Asia and Turkmenistan

The Central Asian states were almost forgotten by the international community or concealed themselves under the shadow of Moscow when they were Soviet republics of

⁸ Energy Information Administration (EIA), Country Analysis Brief and the International Energy Agency (IEA), *Perspectives on Caspian Oil and Gas Development* (December 2008), pp. 22, 62-63

the USSR. Indeed, it was only after the demise of the Soviet Union that most of other nations outside the Soviet bloc realized the existence of these republics that had their own language, ethnic groups, history, and culture, all of which reflected their respective geo-strategic positions. The geostrategic position of Central Asia, located between China and Europe, and Russia and Southwest Asia matters a great deal for its political economy even in the era of globalization. Despite its strategic location, the land locked condition is an inherent disadvantage for interaction with other states, including trade. The international community was preoccupied with finding natural resources in Central Asia and South Caucuses after the Cold War expecting that the global market would provide an alternative to the politically unstable Middle East for energy resources; however, they realized later that there was no easy solution to bring those extraordinarily remote resources into the international market.

With authoritarian regimes in Central Asia, the persistent influence of Russia, and an inefficient infrastructure designed by the Soviet, the Central Asian states are still far from completing their transition. Despite progress toward reforms and economic growth, and the advantage of natural resources, the Central Asian states lag behind the East European states in terms of economic and political stability, progress toward democratization and the living standard of the population. Economic growth associated with natural resources is a double-edged sword for a state-building as it contains the risk

of the Dutch Disease or Resource Curse. But it can hardly be presumed that the Central Asian states would achieve further growth without making full use of their own natural resources. The energy resource in Central Asia would continue to be a key factor for their state-building.

Among the states in Central Asia, Turkmenistan is quite unique in terms of the course that it took to reestablish the state after its independence. Turkmen, which accounts for 85 percent of the population in Turkmenistan, has same ethnic origin as Kazakh, Uzbek, Kyrgyz, and Uyghur that are originally Turkic-speaking nomads. In the frontier of regional empires, such as Persian, Mongol, and Russian, their historical experience is dominated by suppression by those powers and conflicts among ethnic groups. While Turkmenistan is located along the Silk Road which has a long history of being a major transportation corridor connecting the East and West, Turkmen tribes sometime played the role of spoilers and isolated themselves within the region.⁹ The society of Turkmenistan is still based on the relations between tribe and clan, and it does not have firm identity among the population as a state. Thus, given its lack of experience in being consolidated as a state, one of the most fundamental challenges for the leader of Turkmenistan as it became independent was the establishment of an identity to foster the state-building.

⁹ Firat Yildiz, *The New Silk Roads: Transport and Trade in Greater Central Asia, Central Asia - Turkmenistan*, Caucasus Institute & Silk Road Studies Program (2007) pp. 143

The basic institutional condition in Turkmenistan was shared with other Central Asian states, and in fact, they opposed to becoming independent from the Soviet Union when the latter appeared to be breaking down. As did other Central Asian leaders, the Turkmen leader attempted to establish national identity and build a new state by instituting an authoritarian regime. The characteristics of the authoritarian Turkmen regime can be illustrated by its extreme nature and contradictory policies derived from the dilemma between ideology and the reality of being an independent nation. Despite the fact that Turkmen is predominantly a Muslim nation, its first President, Niyazov, did not give priority to religious faith in establishing identity; instead, he tried to integrate the population through making himself the cultic admiration of people. Alternatively, its economic growth was highly dependent on the former Soviet, and now the Russian system. As the legitimacy of regime relies on absolute admiration for the president, the state of Turkmenistan cannot be seen as one that subordinates itself to other states, including Russia. Niyazov adopted a policy of “permanent neutral country.” Turkmenistan, even after the death of President Niyazov, complies with the policy of neutral power by not participating in regional organizations such as the Commonwealth of Independent States (CIS), the Collective Security Treaty Organization (CSTO), or the Shanghai Cooperation Organization. This is in stark contrast to the policies of other Central Asian states.

However, the fact that Turkmenistan is unable to survive without the Russian infrastructure does not allow it to be a genuinely neutral power. It is apparent that Turkmenistan is not really independent from its economic ties with Russia regardless of the policy it adopts, and it seems difficult for Turkmenistan to extricate itself from the Russian yoke in the near future. The institutional constraint derived from the contradiction and dilemma between ideology and reality is common in Central Asia; however, Turkmenistan is a prominent case due to its economic reliance on the Russian natural gas pipeline system.¹⁰

From a development perspective, the problems in Turkmenistan undermine the potential for sustainable development by allowing the current form of political institution and discarding opportunities through which the economy could be stimulated and grow given its access to foreign capital and technology. Turkmen population may be satisfied with the current system as it provides free energy and cheap public goods. However, isolation from globalized economic and social activities would deprive the people of opportunities and freedom that would be promoted by democratic policy and real market economy. In fact, one-third of Turkmen population still lives below the national poverty line¹¹. The UN Human Development Index shows that Turkmenistan is

¹⁰ There is a pipeline between Turkmenistan and Iran exporting 6 - 8 bcm per year natural gas to Iran. Russian is importing about 50 bcm per year from Turkmenistan.

¹¹ The Asian Development Bank website, Fact Sheet: Turkmenistan (accessed on April 10, 2009). There is no updated data on population living below poverty line after 1998.

ranked 108th in the world, lower than other former Soviet republics such as Azerbaijan (97th), Georgia (93rd), Armenia (83rd), Ukraine (82nd), and Kazakhstan (71st).¹²

Nonetheless, Turkmenistan has made substantial progress toward economic growth as have other Central Asian countries. While the reliability of official data is questionable, it indicates that growth in Turkmenistan has been relatively robust in recent years. In fact, this is common to former Soviet countries that are exporters of oil and gas. In Azerbaijan, GDP grew by around 30 percent continuously for three years since 2006. These growth rates were the highest in the world. According to the International Monetary Fund (IMF), GDP growth in Turkmenistan was around 10 percent in 2007. Economic growth in Turkmenistan has been supported by higher gas prices renegotiated with Russia, and an expansion of its gas exports.¹³

Half of the country's irrigated land is planted with cotton, making it the world's ninth-largest cotton producer.¹⁴ The cotton fields were developed by massive irrigation projects initiated by Starling, who tried to convert a large part of the Karakum Desert into irrigated land by constructing a huge man-made river, the so-called Karakum Canal, which is the largest irrigation and water supply canal in the world. Turkmenistan's main industry is natural gas and, to a lesser extent, oil production. Together, the extraction of

¹² UNDP website, *UN Human Development Report 2008* (accessed on April 10, 2009)

¹³ The Asian Development Bank website, *Asian Development Outlook 2009: Turkmenistan* (accessed on April 10, 2009)

¹⁴ Cotton Incorporated website (accessed on April 10, 2009)

these two hydrocarbons accounted for some 30 percent of its 2004 GDP. Outside the energy sector, the Turkmen industry is severely underdeveloped. Some progress has been made in the development of food processing and textile production, but these industries remain weak. Thus, Turkmenistan is still chiefly an agricultural economy, with nearly half of the labor force working in the agricultural sector, especially in the cotton industry. As Turkmenistan lacks access to solvent export markets and is highly dependent on natural gas and cotton exports, the country is vulnerable to fluctuations in the world energy and cotton markets. Also, Turkmenistan remains largely reliant on trade with other former Soviet countries and has suffered periodically from non-payment by those countries.¹⁵

2.2 Sino -Central Asia Relations

China has traditionally viewed Central Asia as its personal trading area and a region influenced by Chinese culture. Many of history's most impressive trading centers were positioned in Xinjiang or west of China's current borders, such as Jharkhand, Samarkand, Urumqi and Kokan.¹⁶ However, the close ties between China and Central Asia disappeared by the modern period, and relations became tense because of the political hostility between the Soviet Union and the People's Republic of China. The

¹⁵ IHS Global Insight

¹⁶ Niklas Swanström, "China and Central Asia: A New Great Game or Traditional Vassal Relations", *Journal of Contemporary China* 14(45), (November 2005) pp. 576-577.

trade between China and post-Soviet states in Central Asia was virtually zero when the Soviet Union collapsed in 1991.¹⁷ The new geopolitical situation opened markets for Chinese goods and investments, yielded better access to raw materials, provided economic opportunities for China's Xingjian Uighur Autonomous Region, and promised to reinstate Central Asia as a transit corridor, the "Silk Road" between China and Europe and between China and the Middle East.¹⁸ On the other hand, the estimated 300,000 Uighur in Kazakhstan and Kyrgyz create, for China and the Central Asian governments, a disturbing base for political mobilization in Central Asia. Since the establishment of the Shanghai Five, an antecedent of the Shanghai Cooperation Organization (SCO) in 1996, China resolved border disputes with Kazakhstan, Kyrgyz, and Tajikistan, and developed cooperative relations with the Central Asian states in the security field.¹⁹ Some observers suggest that China may regard close relations with Kazakhstan as being pivotal in achieving its strategic goals. China and Kazakhstan proclaimed a "strategic partnership" in 2005 and in December 2006, the two countries agreed on the Cooperation Strategy for the 21st century. This agreement called for expanding trade turnover to 10 billion US dollars by 2010, and to 15 billion US dollars

¹⁷ Niklas Swanström, et al., *The New Silk Roads: Transport and Trade in Greater Central Asia, Central Asia - China*, Caucasus Institute & Silk Road Studies Program (2007) pp. 383

¹⁸ The Congressional Research Service, "China's Foreign Policy and 'Soft Power' in South America, Asia, and Africa," (2008) pp. 65

¹⁹ Niklas Swanström, "China and Central Asia: A New Great Game or Traditional Vassal Relations" (2005) pp. 575

by 2015, building pipelines and other transport routes, and cooperating in oil and gas development.²⁰ CNPC bought into Kazakhstan for some 5 billion US dollars and Sinopec Corp. agreed in 2003 to pay British Gas 615 million US dollars for a stake in an oil and gas field in Kazakhstan, which came four days after CNOOC bought 8.33 percent of the British Gas North Caspian Sea Project for the same amount.²¹ Oil contracts and pipeline deals are a major part of China's activities in its relations with Central Asian states.²² In 2007, the export from Kazakhstan to China was 6.4 billion US dollars, which is nearly ten times that in 2000.²³ According to the statistics, nearly 80 percent of the exports from Kazakhstan to China are in the form of fuels and mining products.²⁴

By the early 2000s, it appeared that Uzbekistan and China had begun to explore boosting their trade relations. In June 2004, Chinese President Hu Jintao visited Tashkent to take part in the SCO summit, where he announced grants and long-term loans amounting to 350 million US dollars for economic development in Uzbekistan, which is described by members of the Chinese delegation as the biggest economic aid

²⁰ Ministry of Foreign Affairs of the People's Republic of China website (accessed on April 14, 2009) and The Congressional Research Service pp. 67

²¹ Niklas Swanström, "China and Central Asia: A New Great Game or Traditional Vassal Relations" (2005) pp. 577

²² The Congressional Research Service pp. 5

²³ China statistical yearbook 2006, 2008 and IHS Global Insight

²⁴ Wexpot.com, Country Profile, Kazakhstan (2007)

package ever granted by China to any country at one time.²⁵ China's trade with Turkmenistan was minimal during much of the rule of previous Turkmen President Niyazov, but it began to increase after Niyazov visited China in April 2006. After Niyazov's death in late 2006, Russia, the US, China, and the EU moved to improve relations with Turkmenistan. The most recent SCO summit of the heads of state took place in Bishkek, Kyrgyz Republic, in mid-August 2007. The Bishkek Declaration signed by member states called for the members to coordinate their energy security strategies.²⁶

China's foreign policy towards the Central Asian states has two pillars; to mitigate its security risks, and to promote further economic cooperation. The Foreign Minister of Kazakhstan, Marat Tazhin, visited China and held meetings with his Chinese counterpart, Yang Jiechi, from March 29 to 30, 2009 in preparation for President Nazarbayev's visit to China from April 15 to 19, 2009. Their talks focused on bilateral cooperation, which has intensified in recent years, with an emphasis on developing trade, energy, and infrastructure. The ministers also agreed to closer work within the SCO, and to concerted action against the "three evil forces" of terrorism, separatism and extremism.²⁷

²⁵ The Congressional Research Service pp. 76

²⁶ The Congressional Research Service pp. 71-75

²⁷ IHS Global Insight, "China – Kazakhstan: Kazakh Foreign Minister Visits China to Prepare for Presidential Visit", Country Intelligence – Analysis (March 31, 2009)

The bilateral and multilateral cooperation between China and the Central Asian states in the security field have been enhanced through the settlement of border disputes, coordination among the respective defense departments, joint military exercises, and so forth; however, Turkmenistan is not part of this development. Still, economic ties have also been developed, and the increase in value of Sino-Kazakhstan trade has been outstanding in the region. Chinese imports from Kazakhstan in 2007 amounted to 6.4 billion US dollars, which was 9.5 times as large as the import value in 2000. In 2007, Chinese exports to Kazakhstan were 7.4 billion US dollars, which were 49 times as large as the mere 151 million US dollars in 2000. Chinese exports to Kyrgyz in 2007 were nearly 100 times as large as those in 2000, while the figures for Chinese imports from Kyrgyz remain indeterminate.²⁸

Some analysts observe that for the Central Asian states, trade with China has become more significant in recent years not only for economic reasons but also for political reasons. The foreign policy of Kazakhstan balances Russia and China, and its foreign orientation towards China allows Kazakhstan to balance its strong links with Russia while also creating an important source of investment and economic cooperation.²⁹

²⁸ China statistical yearbook 2006, 2008 and data from IHS

²⁹ IHS Global Insight, "China – Kazakhstan: Kazakh Foreign Minister Visits China to Prepare for Presidential Visit", Country Intelligence – Analysis (March 31, 2009)

Chapter 3 Turkmen Gas: Prospect of being a Major Gas Exporting State

3.1 Natural Gas Reserve

Central Asian gas has played a key role for the Soviet economy as well as today's Russia by providing domestic fuel and export revenues. This can be illustrated by the fact that the United Gas Transmission System of the Soviet Union was built on the basis of two sources of natural gas: the major fields of West Siberia and those of Central Asia.³⁰ Among the Central Asian states, Uzbekistan and Turkmenistan have considerable gas reserves and production capacity, but the Turkmen capacity for gas exports is prominent due to its relatively small population and the scale of domestic consumption of natural gas. In contrast, Uzbekistan consumes a large portion of its natural gas for its population of 20 million. However, the real size of Turkmen natural gas has been uncertain, and the many different figures estimated by a number of institutes and experts vary significantly. The Turkmen government claims that Turkmen gas should be more than 20 trillion cubic meters, an amount approaching the range of the proven reserves in Iran and Qatar.³¹ Other sources such as the Oil and Gas Journal, hold that Turkmenistan has proven gas reserves of 2.8 trillion cubic meters,³² while the BP Statistic Review places it at 2.7 trillion cubic meters. Such uncertainty about the

³⁰ IEA, pp. 17

³¹ IEA, pp. 12

³² EIA country analysis brief

Turkmen gas reserves was fostered deliberately by former President Niyazov, who never allowed a full, independent audit of the reserve by a reputable Western firm with the technical capability to make a reliable estimate. However, Niyazov's successor, current President Berdymukhamedov, quickly rectified his predecessor's policy and selected a British firm, Gaffney Cline & Associates to conduct an independent audit of its natural gas reserves.³³

The first finding of the audit was announced in October 2008. The audit showed a favorable result for Turkmenistan and for those who desired to know, there is indeed a large natural gas field in Turkmenistan. The auditor of Gaffney Cline & Associates, found that the South Yolotan-Osman field in southeast Turkmenistan contained between 4 and 14 trillion cubic meters of gas. Turkmen state media reported that the field could ultimately produce 70 bcm a year, roughly equivalent to Turkmenistan's current total annual gas production. Jim Gillate of Gaffney Cline & Associates said "Regardless of the outcome of further study to refine the estimates, more than sufficient gas is available to fulfill all the contracts" of Turkmenistan.³⁴ Russian media reported on October 15, 2008, soon after the auditor's announcement, that if accurate, these figures could push total Turkmen gas reserves to more than 20 trillion cm – significantly greater than BP's

³³ Guy Chazan, "Turkmenistan Gas Field Is One of World's Largest," The Wall Street Journal, WSJ.com (October 16, 2008)

³⁴ News Central Asia, "British Auditor: Up to 14 Trillion Cubic Meters Gas Reserve in Eastern Turkmenistan Fields (October 14, 2008)

estimate.³⁵ According to the audit, the South Yolotan-Osman field which is one of the newly discovered gas fields in Turkmenistan, could hold an optimum 6 trillion cubic meters of gas, with estimates for the fields rating from a low of 4 trillion cubic meters to a high of 14 trillion. According to the IEA, this finding alone would place Turkmenistan among the world's elite of gas reserve holders.³⁶ When the South Yolotan-Osman fields were discovered, then-President Niyazov asserted that South Yolotan was one of the largest fields in the world with reserves of 6.8 trillion cubic meters. Most analysts believed that this estimate was significantly exaggerated and that the reserve levels were extremely speculative. Yet the audit result indicates that Niyazov's estimate of the reserve level of Turkmen gas was indeed close to the actual figure. A Caspian analyst says that the figure arrived at by Gaffney Cline & Associates demonstrated clearly that Turkmenistan has enough gas to supply Russia and China, but that its existing export infrastructure is insufficient. Thus, the country needs additional capacity and new pipelines.³⁷

3.2 Export Capacity

Turkmen gas production in 2007 was 72.3 bcm and domestic consumption was around 18 bcm. Thus the net export of Turkmen gas in 2007 was 54.3 bcm.³⁸

³⁵ Russian Today, "Turkmenistan wins gas jackpot" (October 15, 2008)

³⁶ IEA, pp. 12

³⁷ Guy Chazan, WSJ.com (October 16, 2008)

³⁸ IEA, pp. 10. These figures are different from BP statistics.

Turkmenistan exported 48 bcm of gas to Russia, and 6.2 bcm to Iran in 2007.³⁹ Natural gas exported to Russia accounts for nearly 90 percent of the country's total gas exports. After becoming independent, Turkmenistan struggled with a decline in natural gas production as it was locked in a pricing dispute with Russia. Without the access to the international market, Turkmen gas had no means of extricating itself from Russia control and as a result, Turkmen gas production collapsed. The country's output dropped throughout the 1990s, from 57 bcm in 1992 to 13 bcm in 1998. In 1999, a Turkmen-Russian agreement took hold, and in 2000, production skyrocketed to 47 bcm and reached 63 bcm in 2006. Current Turkmen gas exports to Russia are carried out in line with a long-term agreement signed between the two countries in 2003.⁴⁰ Some press reports indicate deliveries of Turkmen gas to Gazprom will range from 60 to 70 bcm per year in 2009, of which 42 to 51 bcm per year will go to Ukraine.⁴¹ Despite its huge natural gas reserve, Iran has been importing Turkmen gas and in 2008, purchased 8 bcm.⁴² Turkmenistan has been supplying Iran with roughly 6 bcm per year of natural gas through the 200 km pipeline, the Korpezhe-Kurt Kui Pipeline, which was built in 1997 and has a capacity of almost 13.5 bcm per year. Notably, this was the first Central

³⁹ IEA, pp. 10

⁴⁰ IEA pp 18

⁴¹ EIA – country analysis brief

⁴² IHS Global Insight

Asian natural gas pipeline to bypass Russia.⁴³ This gas supply to Iran is based on the 25-year long-term contract signed in 1996 by TurkmenGaz and the National Iranian Oil Company's gas unit NIGC.⁴⁴

Turkmenistan has an ambitious energy strategy which will almost double gas production from the 2006 level to 120 bcm per year in 2010.⁴⁵ Turkmen authorities now claim that the country could produce up to 150 bcm of gas per year,⁴⁶ which is more than current Iranian gas production.

Table 1: Potential export of Turkmen gas

(billion cubic meter per year)

	Production	Domestic Consumption	Export	to Iran	to Russia	Extra
2007	72.3	18	54.3	6.2	48.1	0
2008	73	18	55	8	47	0
2009	75.8	18	57.8	8	49.8	0
2010	120	18	102	8	55	39

- 2007 data: IEA, Perspectives on Caspian Oil and Gas Development (Dec. 2008)
- Production in 2008 is a target (EIA) It is assumed domestic consumption would not change. No data on export to Russia.
- 75.8 bcm of production in 2009 is a target.
- 120 bcm of production in 2010 is based on the strategy, announced by Turkmengaz in 2007.
- Turkmen and Iran agreed to increase export to 18 bcm, but it needs a new pipeline.
- The long-term agreement called for Russia to purchase up to 70-80 bcm/year over the period 2009-2028, but existing pipeline has only 45-55 bcm capacity, it could be reach 80 bcm when the Central Asia-Centre pipeline is upgraded.

⁴³ EIA – country analysis brief

⁴⁴ APS Review Gas Market Trends, “Turkmenistan - Exports To Iran” (September 18, 2000)

⁴⁵ EIA – country analysis brief

⁴⁶ Russian Today (October 15, 2008)

Chapter 4 Energy for China

4.1 Significance of Growth

China has been one of the world's fastest-growing economies for more than three decades since the onset of its economic reform in the 1970s. The growth trend of the Chinese economy has appeared to be even stronger since the 1990s, especially in the last several years, despite having slowed down in the second half of 2008 due to the global financial crisis.⁴⁷ China's economic growth has been in league of its own, surpassing that of other countries, including other BRIC countries (Brazil, Russia, and India). One of the prominent characteristics of China's economic growth is its reliance on heavy industry. The industrial sector, especially heavy industry, dominates over other sectors.⁴⁸ Rapid economic growth driven by energy intensive heavy industry requires large increases in energy supply. Industry accounts for more than 70 percent of final energy consumption in China, which is high by either developed or developing countries' standards. China's primary energy consumption grew by 62 percent from 2000 - 2005. In fact, there was a structural shift away from heavy industry towards light industry since the start of the market reforms in the 1990s, but that trend has indeed been reversed, with larger energy consumption for economic growth in 2000s.⁴⁹ The

⁴⁷ World Bank: World Development Indicators, etc.

⁴⁸ Service sector makes up 40 percent of GDP in China, compared with an average 54 percent in middle income countries and 70 percent in high income countries

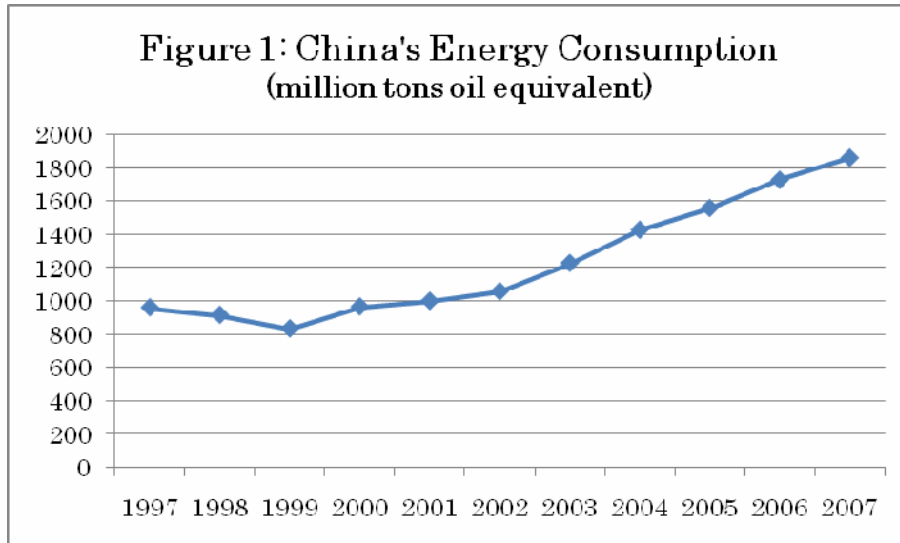
⁴⁹ World Bank, "Mid-term Evaluation of China's 11th Five Year Plan," (2008) pp. ii

industry-led economic growth is not only required by China herself but also by other countries, as industries from other parts of the world have been migrating to China expecting a huge demand in Chinese market, as well as playing the role of factory for exports to other markets.

China is rich in energy resources. In fact, China's production of crude oil in 2007 was 3.7 million barrels per day, which was the fifth largest after Iranian production. The production of coal in China was approximately 1.3 billion tons in 2007, the largest in the world, more than double the second highest - the US with 600 million tons and more than 40 percent of total global production. China is now the second largest primary energy consumer in the world, and it consumes about 17 percent of the world's energy annually.⁵⁰ Since 2000, China's consumption of primary energy has nearly doubled: oil has increased by 65 percent and coal by 96 percent. The hydro power consumption has more than doubled, the consumption of natural gas has nearly tripled, and that of nuclear energy has about quadrupled.⁵¹ The International Energy Agency (IEA)'s World Energy Outlook 2007 stated that China's primary energy demand is projected to more than double from 2005 to 2030, and with four times as many people as the US, China will overtake the US to become the world's largest energy consumer soon after 2010.

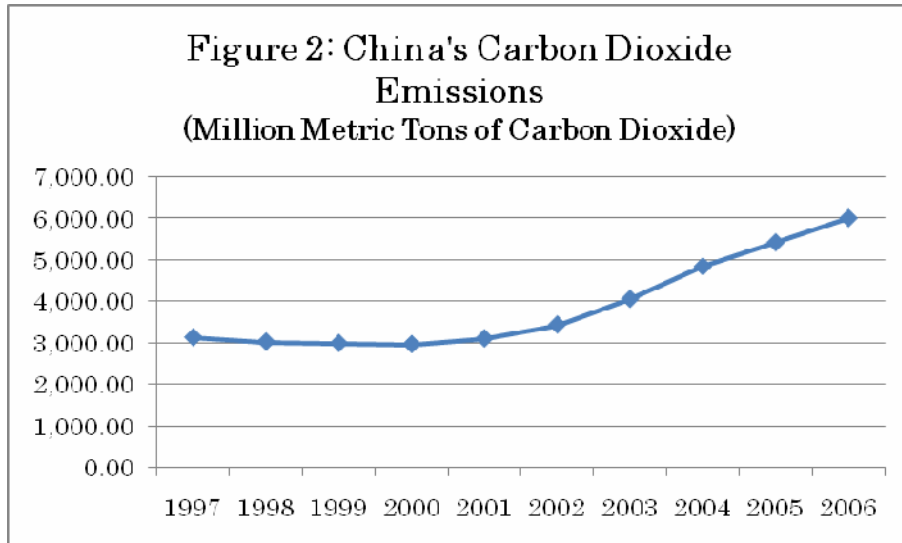
⁵⁰ The US consumption accounts for more than 21 percent which is the largest.

⁵¹ BP Statistical Review of World Energy June 2008



(source: BP Statistical Review of World Energy June 2008)

When it overtook the US in 2006, China became the largest energy-related carbon emitter in the world. That year, China's energy-related carbon emissions accounted for 20.6 percent of the world's carbon emissions. Increased fossil fuel use would double Chinese CO² emissions from today's level to 2030. The updated version of IEA's report, World Energy Outlook 2008, forecasts that China and India will account for just over half of the increase in global primary energy demand between 2006 and 2030. The same report also says that three-quarters of the projected increase in energy-related CO² emissions in the IEA's reference scenario arises in China, India and the Middle East, and 97% in non-OECD countries as a whole.



(source: EIA)

4.2 Natural Gas in China

It is expected that China would use more natural gas, stressing the environmental benefits of its use compared to coal, and promoting it as a solution to intense urban pollution. China has an ambitious plan to expand the use of natural gas, accounting for 10 percent of the national energy mix in 2020, up from 2 percent in 2000.⁵² Natural gas was being promoted as a clean alternative to coal and restrictions on power plant usage were lifted. Since 2000, consumption of natural gas has risen an average of 14 percent annually, with residential use soaring at a 20 percent annual rate of growth, and power sector use by 16 percent annually. The emergence of the power supply crisis after 2003

⁵² The goal is set in the 10th Five-Year Plan (2001-2005) based on the expectations of national economic growth. Johathan Stern ed., *Natural Gas in Asia*, Chapter 2 Fridley David, *Natural Gas in China* (2008), pp 7, 42

and the adoption of new and more flexible power tariffs had given a boost to demand for natural gas in the generation sector.⁵³

While the domination by coal for power generation has not changed, the production of natural gas has been expanding to meet the rapidly growing demand. Even with the sharp rise in the domestic production of natural gas, demand now exceeds what the country can produce.⁵⁴ As mentioned earlier, China is a net natural gas importer since 2006. Energy experts have the common assumption that China's demand for natural gas will grow. The World Bank says that China's gas is beginning to gain momentum and substantial growth is expected with the share of gas in final consumption anticipated to more than double during the next decade. But their projections for China's natural gas demand vary more widely than for oil because of the tremendous uncertainty about the pace of the development of natural gas market.⁵⁵ David Fridley argues that a key uncertainty in determining the degree to which a successful natural gas expansion program in China could expand its role in the total primary energy mix is the outlook for coal demand to 2020.⁵⁶

⁵³ However, since market of natural gas in China is still immature, the consumer base is fragmented, and pricing structure is too high, it is still questionable that China could meet the goal of natural gas accounting for 10 percent of energy mix in 2020, Stern ed., *Natural Gas in Asia*, pp. 7

⁵⁴ Stern ed., *Natural Gas in Asia*, pp 19

⁵⁵ Erica Downs, China, the Energy Security Series, The Brookings Foreign Policy Studies (2006) pp 11

⁵⁶ Stern ed., *Natural Gas in Asia*, pp 59

Table 2: Natural Gas in China in 2020, Import Requirement

(billion cubic meter per year)

Demand	200
Domestic production	140
Required import	60
Planned LNG import	20
Required import through pipelines	40

• source: IEA, *Perspectives on Caspian Oil and Gas Development* (Dec. 2008), etc.

Recent estimates of China's natural gas demand in 2020 by the energy related institutes range from some 100 to 250 bcm per year.⁵⁷ The lowest estimate represents about a 60 percent increase from current consumption (67.3 bcm in 2007), and the highest is a four-fold increase from the current level. Looking at the recent growth trend in China's consumption of natural gas, especially from 2003, even the highest estimate of demand in 2020 seems to be a reasonable level. In its working report, *Perspectives on Caspian Oil and Gas Development*, which was published in December 2008, the IEA states that projections from the Chinese government, oil companies, and analysts vary, but in rough terms, China expects to use about 200 bcm of natural gas in 2020. China would have a supply gap of at least 60 bcm by 2020, which would need to be filled by imported natural gas.⁵⁸ In 2007, China imported 3.87 bcm of LNG from Australia (3.3 bcm), Algeria (0.42 bcm), Nigeria (0.08 bcm) and Oman (0.07 bcm). The current and

⁵⁷ Downs pp. 11

⁵⁸ Downs pp. 11, IEA pp. 22, Stern ed., *Natural Gas in Asia*, pp. 61

planned LNG terminals along China's eastern seaboard would provide collectively about 20 bcm per year, leaving a gap of at least 40 bcm per year in 2020. According to the estimate of the IEA report, China needs to import 40 bcm of natural gas annually through pipelines by 2020.

PART II DEVELOPMENT OF THE TCGP

Chapter 5 Specific Factors

The contexts of political economy in the region underscore the development of the international pipeline project, but those are not necessarily the particular reasons for the TCGP to be materialized. In fact, a number of international energy pipelines have been discussed over the decades. Essentially, all of them share the primary objectives, which are to secure alternative exporting routes for resource producing countries, and to meet the growing demand of energy importing countries. The international pipeline projects at the planning stage include the Nabucco Pipeline project, which attracts European states that have experienced serious gas security incident, caused by the Russia - Ukraine crisis in January 2009⁵⁹ and the Turkmenistan - Afghanistan - Pakistan - India Pipeline, which would bring Turkmen gas into the growing gas market of South Asia. This thesis analyzes five specific factors of development of the TCGP: 1) completion of the first pipeline connecting Central Asian energy resources to China; 2) positive prospects of Turkmen gas in terms of production potential; 3) change of the president in Turkmenistan; 4) development of the Chinese domestic gas supply network; and 5) financial advantage of the Chinese national oil company.

⁵⁹ Jonathan Stern, "Russian and CIS Gas Markets and Their Impact on Europe: the January 2009 Russia – Ukraine Gas Crisis," Oxford Institute for Energy Studies, Natural Gas Research Programme, presented for the Institute of Energy Economics, Japan (February 2009)

5.1 Completion of CNPC pipeline in Kazakhstan in 2005

In December 2005, a 450 km pipeline, the second section of the Kazakhstan - China Crude Pipeline, was completed. This is one of the three sections of the pipeline that will link the major oil and gas fields in Kazakhstan's Caspian coastal area, central Kazakhstan, and the Chinese border. The first section from Atyrau in the Caspian region to Kenkiyak in central Kazakhstan was completed in 2003 but did not reach the Chinese border. China's first acquisition of Central Asian energy assets was a majority stake of Kazakhstan's state-owned oil company in Aktyubinsk, AktobeMunaiGas, and the development right for the Uzen oilfield in central Kazakhstan in 1997. After a series of investment and development works, the production of crude oil in this field increased significantly, and is now 2.5 times greater than before CNPC's take over.⁶⁰

However, most of the equity barrels produced by CNPC in Kazakhstan before 2005 appear to have been sold in the world market rather than to Chinese consumers primarily because there was no pipeline to bring CNPC equity oil from central Kazakhstan to China.⁶¹ The development of the second section of the Kazakhstan - China Crude Pipeline was a historical event in terms of opening the route for Central Asian energy resources to reach the East Asian market, which had never been established before.

⁶⁰ CNPC Annual Report 2008 pp. 47

⁶¹ Downs pp. 44

Also, the development of an energy infrastructure connecting the two regions influenced the prospect of further development of an energy network in the regions, and a gas pipeline parallel to the crude line was planned. In August 2007, Chinese President Hu Jintao and President Nazarbayev of Kazakhstan agreed that the two countries would cooperate to build the China - Kazakhstan Gas Pipeline. The pipeline starts in Xinjiang and splits into two branches near Shymkent in southern Kazakhstan. One branch would go to the gas fields in southwestern Kazakhstan, and the other would go through Uzbekistan to Turkmenistan as a part of the TCGP.⁶²

5.2 Prospect of Turkmen Gas

CNPC signed a 150 million US dollars service contract with Turkmenistan in May 2007 for drilling and exploration work at the South Yoltan oil and gas field. Soon after that, in July 2007, visiting Turkmen President Berdymuhammedov and President Hu Jintao witnessed the signing of a gas sales and purchase agreement between CNPC and the Turkmen State Agency for the Management and Use of Hydrocarbon Resources and Turkmengazi State Concern for the supply of natural gas for 30 years beginning in 2009. The two sides also signed a PSA to develop the Bagtyyarlyk area in eastern Turkmenistan near the Uzbek border.⁶³

It is not clear what kind of information related to the gas reserves in the fields was

⁶² The Congressional Research Service pp. 77-78

⁶³ CNPC Annual Report 2008 pp. 50, and The Congressional Research Service pp. 78

available to support the Chinese decision to invest. Some information described the fact that even Chinese energy experts did not share the estimate of Turkmen gas reserve.⁶⁴

As previously discussed, when the South Yolotan field was discovered in November 2006, President Niyazov asserted that it was one of the largest fields in the world with reserves of 6.8 trillion cubic meters. Although Niyazov's estimate was not confirmed by any reliable audit, it seems that CNPC shared the positive prospect of Turkmen gas with Niyazov to a certain extent.

In addition, uncertainty about Russian support for a gas pipeline from East Siberia to China might lead CNPC to reevaluate Turkmen gas.⁶⁵ Thus, the discovery of the South Yoltan field was a trigger for China to become involved in the development of Turkmen gas and the TCGP.

5.3 West - East Gas Pipeline in China

As mentioned previously, the original TCGP plan consisted of three major components: the Central Asian section, the Chinese section, and the offshore section toward South Korea and Japan. The Chinese section was the longest part of this huge pipeline project. However, that section of original TCGP has been developed not to bring the Turkmen gas to China's east coast or to Japan, but to transport Chinese gas in

⁶⁴ China Daily, "CNPC signs US\$1.5b gas contract with Turkmenistan" (May 16, 2007)

⁶⁵ Kovykta gas field may need to make a contribution to Gazprom's western supply portfolio until Yamal gas became available. Stern ed., *Natural Gas in Asia* (2008) pp. 244

its western region to its east coast area for domestic consumption. The plan for construction of the West - East Pipeline in China that would link gas resources in western China to demand centers in the Yangtze River Delta region of Shanghai, Jiangsu, and Zhejiang - more than 4,000 km away - was approved in 2000, and construction began in 2001. This project encountered challenges at the planning stage in finding suitable markets because of the high gas price set by the government as well as having enough gas reserves to ensure an adequate return to CNPC for its construction. The construction was accelerated in response to growing demand for natural gas in the Yangtze River Delta region. By the time the pipeline was completed in December 2004, PetroChina, CNPC's subsidiary, developed nearly 450 bcm of proven reserves to support a production level of around 14 bcm per year which is more than enough for the maximum transporting capacity of the West - East Pipeline.

The motivation and justification for the West - East Pipeline project extended further than energy policy alone. Given the concentration of natural gas resources in the western part of China, it became the flagship project to promote the development of the western region, which has increasingly fallen behind the national average in terms of income and development.⁶⁶

While the West - East Pipeline itself would not have sufficient capacity to serve as

⁶⁶ Stern ed., *Natural Gas in Asia*, pp. 30

a conduit for large volumes of gas from Central Asia, the construction of trunk gas pipeline between China's west and east had a significant impact on the development of a domestic natural gas network in China. The construction of the second West - East pipeline, which would be connected with the gas pipeline from Central Asia, started in 2008.⁶⁷ With the completion of the West - East Pipeline, the TCGP has become less expensive and is expected to be more feasible, with access to the most energy consuming area in China.

5.4 Berdymukhammedov's Promotion of New Pipelines

While Turkmenistan has been dealing with trading partners - mainly Russia - based on long-term contracts, it seeks to expand trade partnership with nations other than Russia as well. The plans for new Turkmen pipelines, including the TCGP, are legacies of the deals made by the first President, Niyazov with other states. Turkmen efforts to realize those pipelines have become robust by the initiative of the new president, Berdymukhammedov. His firm intention of pushing those projects forward was demonstrated by hiring a British firm for an independent audit of Turkmen gas reserves. Berdymukhammedov's active promotion of new pipelines through presidential diplomacy has contributed to crystallization of TCGP and actual deals between CNPC and Turkmen state agencies.

⁶⁷ IEA, pp. 24

Turkey: While he has never made a firm commitment, President Berdymukhammedov has repeatedly expressed interest in the Trans-Caspian Pipeline which would bypass both Russia and Iran to carry Turkmen gas across the Caspian Sea to Azerbaijan and connect with the South Caucasus Pipeline flowing gas to Turkey and then to the planned Nabucco Pipeline to Southeastern Europe. President Berdymukhammedov visited Turkey in March 2008 and agreed with his counterpart, Turkish President, Abdullah Gul, that the two countries would broaden and deepen their bilateral ties - including energy cooperation - although they did not make any commitment to the planned Trans - Caspian Pipeline.

Afghanistan: Turkmenistan has also been pursuing the opportunity to export its gas to the Southwest Asian market through Afghanistan. According to the US State Department, the Turkmen government worked closely with the Taliban regime in Afghanistan until September 11, 2001, and until that time had a growing cross-border trade with the regime in Afghanistan. In April 2008, President Berdymukhammedov spoke about the Turkmenistan - Afghanistan - Pakistan - India Pipeline with Afghan President Hamid Karzai on the first-ever visit by a Turkmen president to Kabul in independent Turkmenistan's 17-year history.⁶⁸

Iran: President Berdymukhammedov visited Iran in February 2009 and met

⁶⁸ Bruce Pannier, "Turkmen and Iranian Presidents Moving Ahead with Rival Pipelines" (April 28, 2008)

Iranian President Mahmoud Ahmadinejad. They agreed to export some 10 bcm of Turkmen natural gas annually to Iran, in addition to the 8 bcm that Turkmenistan already exports. The agreement implies that the current pipeline bringing Turkmen gas to Iran would not be sufficient to transport additional gas, and a new pipeline needs to be built. A possible new gas pipeline from Turkmenistan to Iran could offer a new dimension to the EU-sponsored Nabucco project by removing the necessity of building a section under the Caspian Sea, and routing the pipeline through Iran and Turkey instead.⁶⁹

Russia: Turkmen gas exports to Russia could increase to as much as 70-80 bcm per year after 2009 as stated in their long-term contract. However, if Russia intends to increase Turkmen exports to that level, a major refurbishment and expansion of the Central Asia-Centre system would be necessary. In May 2007, the presidents of Russia, Kazakhstan and Turkmenistan signed a widely-reported Declaration on the Construction of the Caspian Coastal Pipeline, supplemented in December 2007 by a Trilateral Agreement on Cooperation in the Construction of the Caspian Coastal Pipeline. In July 2008, Gazprom announced that the capacity of the Caspian Coastal line could be expanded to 30 bcm per year.⁷⁰

⁶⁹ IHS Global Insight, "Turkmenistan – Iran: Turkmen President Satisfied with Iran Visit, Energy Dominates Talks", Country Intelligence – Analysis (February 20, 2009)

⁷⁰ IEA, pp 18

There is yet another plan for a new pipeline, the so-called "East-West" gas pipeline, which would link gas fields in northeastern Turkmenistan to the Russian gas pipeline system. The pipeline, which would run parallel to the existing Central Asia-Centre pipeline system and expand the overall gas export capacity of Turkmenistan and Uzbekistan, has already been approved by Uzbekistan. Along with the planned Caspian Coastal Pipeline, the two export outlets would increase gas exports from Central Asia and solidify Russia's control over gas in the region. President Berdymukhammedov signed 11 agreements and one memorandum together with his Russian counterpart, President Dmitry Medvedev, at the end of his visit to Moscow on March 25, 2009. As the two leaders have not made any commitment to the construction of the East-West gas pipeline, an analyst of IHS said that avoidance of the deal keeps options open for the Turkmen president, who is proving adept at juggling foreign interests in his country's energy sector. While he continues to engage with Russia and agrees to increase energy sector cooperation, he appears to be keen to keep his options open.⁷¹

5.5 CNPC's Financial Advantage

The main player of TCGP is neither the Turkmen government nor the Chinese

⁷¹ "Russia – Turkmenistan: Co-Operation Deals Follow Russia – Turkmenistan Summit, but, No Pipeline Commitment Made," Country Intelligence – Analysis, HIS Global Insight Inc. (March 26, 2009)

government; instead, it is the CNPC, which is currently constructing the pipeline and will be its operator in the form of the Sino-Turkmenistan Gas Pipeline Corporation established with its subsidiary, PetroChina. While various factors of TCGP development are discussed, the fundamental decision has been made by CNPC based on its cost and benefit analysis as well as its capacity to finance the project – estimated at 18 billion US dollars. It is assumed that Chinese NOCs make their investment decisions based on estimates of net present value or internal rate of return of the investment as do the international oil companies. The CNPC's net profit more than tripled from 6 billion in 2003 to 20 billion US dollars in 2007. CNPC is now the fifth largest oil company in the world according to the *Petroleum Intelligence Weekly*.⁷² Although the growth of CNPC's net profit may slow due to the current world financial crisis, the financial figure of CNPC at the time of investment appraisal - probably in 2005 or 2006 - showed a robust growth trend. The total cost of TCGP could be financed by the CNPC's 2007 profit alone. In addition to its capacity, there are other financial advantages to CNPC's overseas investment. Houser argues that CNPC is not required to pay dividends to its shareholders (government) regardless of company performance. With either mature and

⁷² *Petroleum Intelligence Weekly's* annual ranking of the world's 50 largest oil companies in terms of firms' performance (evaluated based on six operational criteria). CNPC jumped from 7th in the ranking in 2008, and surpassed even BP and Shell. Gazprom is ranked 12th (Gazprom's net profit in 2007 was 28 billion USD) Gazprom website, "Gazprom reports its consolidated financial results under international financial reporting standards (IFRS) for 2007" (accessed on April 12, 2009)

expensive domestic production, or bank deposits yielding a nominal 3 percent as the only alternative places for the company to spend its cash, CNPC can thus apply lower rate-of-return criteria to the company's overseas investments.⁷³

Chapter 6 Driving Force: China's National Oil Company (NOC)

6.1 China's NOCs

The imperatives of economic growth have sent China on an international quest to secure energy resources. After China became a net oil importer in 1993, it has been aggressive in securing access to oil and gas resources in other countries. Oil and gas production in China is basically controlled by the national oil companies (NOCs), all of which were at one time part of government ministries. The largest, in terms of production, is CNPC, which was formed as a ministry-level state-owned enterprise in 1988 out of the upstream assets of the Ministry of Petroleum Industry. The China Petroleum and Chemical Corporation (Sinopec), formed in 1983 out of the downstream assets of the Ministry of Petroleum Industry and Ministry of Chemical Industry, has a much smaller upstream portfolio than CNPC but is dominant in the refining sector in China. Sinopec is the world's second-largest refiner after Exxon Mobil. The China National Offshore Oil Corporation (CNOOC) is the smallest of the three by all

⁷³ Trevor Houser, "The Roots of Chinese Oil Investment Abroad", *Asia Policy* 5, the National Bureau of Asian Research (2008) pp. 159

measures and unlike other two, it does not have ministry rank. CNOOC was established in 1982 to develop China's offshore resources in cooperation with the international oil companies.⁷⁴

Given the demarcation of its role in industry, the lack of domestic competition and international competitiveness became major factors underlying the further reform of NOCs in 1998. The upstream/downstream duopolies were abolished by swapping some assets between CNPC and Sinopec. CNPC and Sinopec were given monopolistic control of integrated upstream and downstream operations based on a geographical division, with Sinopec dominating the east and south, and CNPC dominating the northeast and west. In general, however, CNPC retained the dominant role of producing crude oil and natural gas, while Sinopec maintained a larger share of the refining capacity. In an attempt to create internationally competitive energy companies, the 1998 reform also intended to separate the government's administrative function in the sector from the company's operations, thus allowing the NOCs to decide on investment and production plans based on financial considerations instead of the state's instructions. A major development in their internationalization came with the establishment of their subsidiaries, which were listed in international stock markets in 1999.⁷⁵ While the

⁷⁴ Daniel H. Rosen and Trevor Houser, *China Energy: A Guide for the Perplexed* (2007) pp. 20

⁷⁵ CNPC has a subsidiary, PetroChina, Sinopec has Sinopec Ltd. and CNOOC has CNOOC Ltd, and many others by three NOCs.

majority of the shares of those subsidiaries are still owned by the parent NOCs, the joint stock companies attracted foreign capital and even support from the international major oil companies, such as ExxonMobil, BP, and Shell. Also, their listing in international stock exchanges injected profit incentive into the energy sector, thus separating themselves farther from state controls and bolstering competition among the firms in an effort to increase revenue.⁷⁶

In 2007, CNPC produced 138 million metric tons (mmt) of crude oil. The majority of its production is still in the domestic fields, which produced 108 million metric tons or 78 percent of total production. However, they have seen a robust increase in overseas production. CNPC's overseas production of crude oil in 2007 was 30 mmt, more than double the production in 2003, while domestic production increased by only 3.5 percent in the same period. CNPC produced 60 bcm of natural gas in 2007, which is about a 120 percent increase from that in 2003. Overseas production of natural gas increased by more than 150 percent, although it is still minimal portion compared to domestic production. CNPC accounts for about 60 percent of national crude oil production and about 80 percent of national gas production in China.

Sinopec produced 40.5 mmt of crude oil and 8.3 bcm of natural gas in 2008. Sinopec's sales revenue in 2007 was 181 billion US dollars, which was more than

⁷⁶ Rosen and Houser pp. 21, and Stern ed., *Natural Gas in Asia*, pp. 38

CNPC's revenue of 150 billion US dollars. Sinopec's net profit was 12.5 billion US dollars, less than CNPC's net profit. Although Sinopec's sales in 2008 amounted to 218 billion US dollars, which represented an increase of 20 percent over 2007, its net profit decreased significantly to 3.6 billion US dollars, a 70 percent decline in 2008.⁷⁷

CNOOC produced a total of 40 mmt of oil and gas in 2007, of which about 6 mmt came from overseas. CNOOC's overseas operation includes oil and gas production of 40,000 barrel oil equivalent (boe) per day in offshore fields in Indonesia and 6,000 boe per day in Australia.⁷⁸

6.2 Rationale of the NOC's Going Abroad Strategy

The domestic resource endowment and industry structure create an incentive for Chinese NOCs to expand their portfolios overseas. This pattern of exploring overseas opportunities is demonstrated not only by Chinese NOCs but also by Petronas in Malaysia and Statoil in Netherland.⁷⁹ The Chinese NOCs are clearly motivated by commercial interests to go overseas.⁸⁰ Thus, the rationale for Chinese NOCs to employ the going abroad strategy is based on economic and technical reasons.

Domestic Endowment: Oil companies, no matter if they are state-owned or

⁷⁷ Sinopec Annual Report 2008

⁷⁸ CNOOC website (accessed on April 12, 2009)

⁷⁹ Executive Summary of National Oil Company Study, "The Role of National Oil Companies in International Energy Markets", The James A. Baker III Institute for Public Policy (2007) pp. 5

⁸⁰ Steven W. Lewis, "Chinese NOCs and World Energy Markets: CNPC, Sinopec and CNOOC," The James A. Baker III Institute for Public Policy, Energy Study (2007) pp. 6

private, or national or international, need to seek new reserves through exploration or purchase to replace, avoid shrinking reserves, and establish diversified sources of supply to disperse operating risks. While domestic production has increased modestly with the development of some offshore and western fields, China's relatively meager proven reserves suggest that annual oil output is near its peak at the current 3.7 million barrels per day.⁸¹ In fact, China's domestic production of crude oil has increased from 2000 to 2007, by only 15 percent, while domestic consumption more than doubled in this period, from 4.7 million to 7.8 million barrels per day.⁸² As the biggest NOC, since the mid-1980s, CNPC has focused on exploring for new, substantial domestic finds, particularly in the Tarim Basin, but in the early 1990s, CNPC was prompted to look outside China's borders to enhance its Reserve to Production ratio (R/P ratio).⁸³

Price control: With limited reserves and relatively flat production within the country, China now relies on the international market for nearly half of the oil it consumes (41 percent in 2007). However, fearful of passing inflation to an increasingly automobile-oriented and vocal middle class, as well as to low-income farmers, the Chinese government maintains tight control of retail prices of oil products.⁸⁴ Between 2003 and 2006, when both the volume of China's crude oil imports and the price per

⁸¹ Rosen and Houser pp. 20

⁸² BP Statistical Review of World Energy June 2008

⁸³ Xiaojie Xu, "Chinese NOC's Overseas Strategies: Background, Comparison and Remarks," The James A. Baker III Institute for Public Policy, Energy Study (2007) pp. 3

⁸⁴ Rosen and Houser pp. 21

barrel for that crude doubled, refiners was not able to pass on that cost increase to consumers, and the downstream sector began hemorrhaging money. In early July 2005, China's refiners lost more than 20 US dollars per barrel. Mounting refining and marketing losses totaled 3.9 billion US dollars in 2005 for Sinopec and CNPC. In 2005, the gap between domestic and international oil prices prompted China's refiners to export their products rather than sell on the domestic market at a loss. The actions taken by refiners contributed to widespread oil shortages in Guangdong Province. Thus, the Chinese government paid 1.2 billion US dollars to Sinopec as partial compensation for the losses it suffered in 2005 in response to the Guangdong oil shortage. In 2006, the downstream sector lost 5 billion US dollars. Chinese government again offered compensation to Sinopec, which was a 647 million US dollars year-end subsidy.⁸⁵

Profit maximization: An original objective for the establishment of state-owned oil companies in China was to create internationally competitive energy companies. The upstream sector – exploration and production – is historically the most profitable part of the oil business. Chinese NOCs are simply following the same strategy as any international oil company in looking for income from upstream assets acquired overseas. They seek to accrue the rent that exists between the cost of producing crude oil and the

⁸⁵ Houser pp. 152

final price of that barrel of oil in the international market.⁸⁶ This motivation based on profit seeking is demonstrated by the fact that Chinese oil companies are selling oil to consumers who offer the highest price rather than selling it to Chinese consumers. The share of CNPC's crude oil production sent back to China in 2006 from Sudan, which has long been the majority of the firms' overseas portfolio, declined from the year before. CNPC opted to sell more of its Sudanese crude in the international market, and Japan bought Sudanese oil from CNPC paying a higher price than CNPC would have been able to obtain in China.⁸⁷

Technical constraints: There are also technical reasons associated with the Chinese NOCs' quest for foreign oil, which are related to their domestic refinery capacity and technical capability of oil exploration and production. The refineries in China are primarily designed for the low-sulfur (sweet) and high API (American Petroleum Institute) gravity (light) crude oils, which are exploitable in northeastern China. This profile of the refinery stock influenced the selection criteria for the NOCs' initial overseas oil operation. The initial investments included those made in the field of Sudan producing the crude oil similar to that domestically available in China. The profile of refinery stock does not have significant meaning any more for selection of crude oil overseas, as the capacity of Chinese refineries is now more developed and

⁸⁶ Downs pp. 36

⁸⁷ Houser pp. 162

sophisticated, and Chinese NOCs do not necessarily bring their overseas production to China. But even today, China opts more often for the sweet and light crudes produced in West Africa and Southeast Asia when purchasing oil in the international market than for the high-sulfur oil from the Middle East.

Another problem of Chinese technology for oil exploration and production is deep offshore drilling as China's domestic large oil fields are concentrated onshore and offshore drilling technology has not been advanced in China. Thus, Chinese NOCs face a significant disadvantage and in fact lose competitiveness vis-à-vis the international oil companies in bidding for offshore oil fields. This lack of offshore drilling capability also forces Chinese firms to explore inland areas - of greater political risk.⁸⁸

Meanwhile, it should be noted that the strategies used by Chinese NOCs overseas may be modified according to the market conditions just as the international oil companies may do. In fact, some analysts say that the three major Chinese NOCs seem to have been cautious about overseas investment in recent years. The cautious attitude is attributable mainly to the deterioration of upstream sector investment environments as capital expenditures in the sector are increasing in value and share.⁸⁹

⁸⁸ Houser pp. 155-156

⁸⁹ Yoshikazu Kobayashi, "Chinese NOCs' Corporate Strategies" Presentation to IEEJ Study Report/Discussion Meeting, the Institute of Energy Economics, Japan (2008)

6.3 Decision Making and Energy Security Debate

Chinese NOCs are required to get official approval from the National Development and Reform Commission (NDRC) and the State Council for any foreign investment of 30 million US dollars or more and from the State Council for any foreign investment of 200 million US dollars or more. In practice, however, the NOCs sometimes make investments abroad without approval from these authorities and simply inform them after the fact.⁹⁰ At the initial stage of Chinese NOCs' foreign operation, the government did not pay much attention to NOC's foreign investment in Peru, Sudan and Kazakhstan.⁹¹ Now, the NOCs' overseas investments draw more attention from the government as Chinese NOCs have become the most profitable state-owned enterprises in China - with certain influential power in political institutions - and their operations abroad are deemed to have an impact on Chinese foreign relations as well as government policies.

However, the Chinese government does not have the institutional capability to coordinate the over vested interests of different governmental bodies and direct the NOCs to follow the integrated government policy.⁹² The NOCs have sought advice on foreign acquisition from international consultants and have relied on investment banks

⁹⁰ Downs pp. 24 and 40

⁹¹ Xu pp. 4

⁹² Downs pp. 19

to present them with opportunities.⁹³ The fact that NOCs have subsidiaries listed on international stock exchanges provides them with protection against state intervention, and their pursuit of profits could provide the NOCs with justification for resisting projects and policies supported by the government.⁹⁴ What the Chinese government can do for the NOCs' investment decision making is to give broad guidance and provide financial and diplomatic support to the companies.⁹⁵

One may argue that the foreign quests of Chinese NOCs have been in line with or driven by the energy security goal. This assumes, of course, that China places itself in an insecure position in terms of energy supply by relying on oil from the Middle East, which is transported by sea lanes through the Malacca Straits where China has no naval power to compete with the U.S. Navy. However, this thesis argues that energy security is not the purpose or underlying factor behind the expansion of Chinese NOCs' foreign operation; instead, it is the perspective that could support the NOCs' investment abroad or be used for justification of claiming government support for their overseas operations.

The diversification of energy suppliers and transport routes is critical to enhancing energy security. In terms of oil supplies, Chinese attempts to diversify energy

⁹³ Downs pp. 40

⁹⁴ Downs pp. 22

⁹⁵ Downs pp. 39

sources have made remarkable progress. While its reliance on the Middle East remains substantial because of the region's large oil reserve, the share of crude imports from the Middle East declined from 46 percent in 1995 to 39 percent in 2007. The Asian suppliers' share decreased significantly, from 41 percent in 1995 to 15 percent in 2007. Instead, Africa emerged as one of the major oil suppliers for China, moving from 11 percent to 26 percent, and the former Soviet countries joined the group of important suppliers with increases in their share from a minimal level to 13 percent in the same period.⁹⁶ However, the diversification of energy sources can be implemented through trades in the international oil markets. As discussed previously, Chinese NOCs went to Africa, Latin America, and Central Asia for their own economic and technical reasons. Although the expansion of the NOCs' overseas operations contributed to the diversification of the oil supply, the diversification of supply sources has not been the aim of NOCs' investment in other countries.

6.4 CNPC's Quest in Central Asia

In 2006, Chinese NOCs' equity production totaled roughly 681,000 barrels per day. If all of this returned to China, only 19 percent of China's total imports would have been satisfied by NOCs.⁹⁷ China relegates 8 percent of its oil consumption to the NOCs' overseas equity oil. In 2006, CNPC produced 560,000 barrels per day in the oil

⁹⁶ BP Statistical Review of World Energy June 2008

⁹⁷ Houser pp. 162

fields abroad. Sinopec registered less than 100,000 barrels per day of international oil production in 2006, mostly in Africa and Latin America, while CNOOC produced a meager 25,000 barrels per day, almost exclusively in Indonesia. Chinese NOCs have invested and signed PSA or other agreements related to oil and gas production and sales in many countries. However, most production is concentrated in a few countries, and this pattern is demonstrated by CNPC's overseas operation. According to CNPC's website, CNPC owns oil and gas assets and interests in 27 countries. However, more than 50 percent of its current overseas output comes from Kazakhstan, and another major portion, probably about 40 percent, comes from Sudan.⁹⁸

Stake of AktobeMunaiGas: In 1997, CNPC signed an agreement with the Kazakh government to purchase the majority share (60.3 percent) of AktobeMunaiGas, a state-owned oil company in Central Kazakhstan.⁹⁹ That agreement marked the start of CNPC's acquisition of overseas equity oils, along with agreements in Sudan and Venezuela in the same year. Since then Kazakhstan has continued to be a major field for CNPC's quest for foreign equity oil. The oil assets held by AktobeMunaiGas were basically developed in the Soviet era and deteriorated after years of operation or were underdeveloped due to difficult natural conditions. When CNPC formally took over the operation of AktobeMunaiGas, its annual output was only 2 mmt (15 million barrels).

⁹⁸ CNPC Annual Report 2007, etc.

⁹⁹ The AktobeMunaiGas has some oil fields in Caspian Sea as well.

Output from the company's oil fields has significantly increased and some of large fields rivaled by CNPC's development efforts. The AktobeMunaiGas has now become the fourth largest oil company in Kazakhstan and produces 6 mmt (44 million barrels) of crude oil annually.¹⁰⁰

Acquisition of PetroKazakhstan: In 2005, CNPC purchased the Canadian-based company, PetroKazakhstan for a reported 4.18 billion US dollars, giving it control over production licenses for 12 oilfields, and exploration licenses for 5 other areas in the South Turgai Basin of central Kazakhstan. PetroKazakhstan owns the Shymkent refinery, the largest in Kazakhstan. Although CNPC was imposed to transfer about one-third of the PetroKazakhstan shares to KazMunaygaz, which is a state-owned oil company in Kazakhstan, it was the CNPC's biggest foreign acquisition. Notably, CNPC retained a 67 percent stake in the company. It is Kazakhstan's second-largest foreign petroleum producer, and the largest manufacturer and supplier of refined products. In 2007, PetroKazakhstan produced 10.07 mmt of oil, which represents 33.6 percent of CNPC's overseas production.¹⁰¹

Kazakhstan - China crude and gas pipelines: As previously discussed, CNPC's equity oils in Kazakhstan did not have access to the Chinese market because there is no pipeline between the Chinese border and CNPC's oil fields in central Kazakhstan.

¹⁰⁰ CNPC Annual Report 2007, pp 47

¹⁰¹ CNPC Annual Report 2007 and CNPC website

While the pipeline was not constructed immediately after the CNPC's first takeover of Kazakh oil assets due to the negative result of a feasibility study, the project's viability was re-evaluated with the significant increase of crude oil production in Kazakhstan. The two sections of the Kazakhstan - China Crude Pipeline have been completed: the first section, Atyrau - Kenkiyak (450 km) was completed in 2003, and the second section, Atasu - Alashankou (1,000 km) was completed in 2005. Construction of the third section, Kenkiyak - Kumkol (760 km) is currently ongoing and is expected to be operational in October 2009.¹⁰² The Kazakhstan - China Crude Pipeline will be completed with the third section, and it will connect the Chinese domestic gas pipeline operated by CNPC in Dushanzi, Xinjiang Province.

Further quest: As discussed earlier, CNPC signed a 150 million US dollars service contract with Turkmenistan in May 2007 for exploration work at the South Yoltan oil and gas field. In July 2007, CNPC and the Turkmen state agencies signed a PSA for the development of natural gas on the right bank of the Amu-Darya River, envisaging deliveries of 30 bcm of gas per year for 30 years. The two sides also signed a PSA to develop the Bagtyyarlyk area in eastern Turkmenistan. In July 2007, CNPC signed the "Basic Principle Agreement on the Gas Pipeline Construction and Operation"

¹⁰² CNPC Annual Report 2007, pp50, Downs pp. 32, and Miki Wajima, *Kasupikai enerugi shigen wo meguru koubou* [The Competition over Caspian Energy Resources] Institute of Eurasian Studies (2008) pp. 23

with the Turkmenistan, Kazakhstan, and Uzbekistan governments, respectively. This agreement is assumed to be the foundation of transit countries' cooperation for the TCGP.¹⁰³

¹⁰³ CNPC Annual Report 2007

PART III IMPLICATIONS AND CONCLUSION

Chapter 7 Implications

Due to lack of transparency and relatively limited information with regard to government policies, decision making processes and the relations between the state-owned energy companies and the governments, the international pipeline project in the former Soviet region is often viewed as part of a political deal between the states. As long as a pipeline runs through borders and has impacts on regional economy, political aspects associated with a project are inevitably seen as significant factors in the development of an energy pipeline. As pipeline projects are often included in the agendas of high profile diplomatic meetings, a pipeline deal seems to be a kind of tool for political maneuver in international relations.

However, the analysis of the factors and the driving force behind the TCGP development implies that the project has not been materialized at the direction of the government, although the government could support NOCs to be awarded in the international competitive bidding, and thus expedite the implementation of the project. Instead, it has been driven by the commercial and technical considerations of a project proponent, which in the case of TCGP is the Chinese NOC. The key implications of the TCGP development are discussed below.

Meaning of development needs: The general conditions that demand a pipeline

both in an energy exporting state and importing state lay the foundation for the project's implementation. However, those conditions alone do not necessarily move the project forward. Despite fears of the Dutch Disease or the Resource Curse, oil and gas exporting states that rely heavily on energy commodities as a source of government revenue continue trying to export their resources to the greatest extent possible. The national priority of those states is not to develop a non-energy sector for sustainable development following the guidance of the international financial institutes, but to maximize revenue by expanding exporting capacity and negotiating higher sales prices for those exporting commodities. Also, it is critical to diversify exporting routes to secure sustainable trades with different partners. On the other hand there is strong demand for energy resources especially in the area where economy needs more fuel to continue its growth, such as in China. The Chinese need to shift their major source of energy from environmentally harmful resources to cleaner energy sources. Those conditions are applicable as fundamental factors for development of any planned international pipelines, such as the Nabucco Pipeline, but many of those still remain in the planning stage.

Viability of the project: The Specific factors that eliminate obstacles and support the viability of the project are significant for pipeline development. The project proponent appraises project viability based on specific financial and technical indicators.

In case the net present value or the internal rate of return would be below their investment targets, the project would not be materialized even if the objective of the project is in line with national interests. It was unlikely that the TCGP would have been crystallized without the completion of the West - East Pipeline in China. The plan of the project needs to specify where the pipeline would connect with another pipeline, and it must ensure that another pipeline would have sufficient capacity to transport gas flowing from other countries. It might have taken more time for CNPC to enlist the support of Kazakhstan for the TCGP if the Kazakhstan - China Crude Pipeline had not been completed. If CNPC, rather than the Chinese or Turkmen government, had not obtained a positive prospect for the Turkmen gas reserve, or if the CNPC's financial performance had stumbled, the TCGP would not have been realized.

Initiator: This thesis emphasizes that the initiator of the TCGP is the Chinese oil company, CNPC, which has a commercial interest in this particular project as well as the capacity to finance and engineer it. With its recent robust financial performance, CNPC's interest in Turkmen gas has been driving the development of TCGP. While CNPC and other Chinese NOCs seem to be pursuing more opportunities to tie up with the international oil companies, the Chinese companies tend to implement projects on their own; otherwise, with some support from local counterparts. Unless this self-working form exerts a financial and technical disadvantage against their

international competitors, it enables quick and aggressive decision making, and lends more justification for government support. The Chinese NOC's involvement in the TCGP and its power as a driving force implies that many other international pipeline projects that remain in the planning stages lack such initiators, with the exception of the planned pipeline from Turkmenistan to Russia, the Caspian Coastal Pipeline with Gazprom. This does not mean that pipeline development initiated by a strong state-owned energy company always has better chance of being implemented than other cases. The international consortium has developed oil and gas infrastructures with the support of international and private financial institutions, such as the case of the Baku-Tbilisi-Ceyhan Pipeline between Azerbaijan and Turkey. However, the initiation of one company that has sufficient financial and technical capacity as well as the ability to acquire government support, could contribute significantly to progressive project implementation.

State Energy Company and Government: Steven W. Lewis argues that China's NOCs and the Chinese government are capable of working together on some "going abroad" strategy goals, and China's NOCs have largely been successful in going overseas particularly where their commercial interests intersect with the political interests of China's central government.¹⁰⁴ Then is the TCGP a successful case for

¹⁰⁴ Lewis pp. 55

China's NOC because the Chinese government has political interest in Turkmenistan and it supported CNPC? China's NOCs do not make investments on behalf of the government or to advance China's geopolitical objectives. Instead, Chinese NOCs pursue overseas expansion for their own survival and development. Overseas business engaged in by state-owned energy companies, at least in China, is driven by their profit seeking motive, rather than by the direction of the government. They even use the notion of energy security for justification to claim government support.

Further, it is still not clear what kind of political interest China has in Turkmenistan. Many analysts argue that Central Asian states should be Chinese strategic allies as the security on China's western border and Xinjiang depend upon peaceful development in her neighboring Central Asian states and China's relations with them. This argument may be applicable for Chinese interests in establishing close relations with Kazakhstan, Kyrgyz, and Tajikistan, which share a border with China, or with Uzbekistan, where the Central Asian Islamic fundamentalist groups have a haven. But Turkmenistan is well away from the security concerns that would directly affect the Chinese policy.

Government's involvement: Notably, however, these arguments do not immediately dismiss Lewis's argument as the Chinese government is interested in promoting trade and establishing economic cooperation with other nations. In fact, it

demands state-owned enterprises to become internationally competitive corporations to maximize profits. The Chinese government is seriously concerned about the energy supply gap and environmental degradation. If overseas investments by Chinese companies are in conformity with those national interests, then the Chinese government supports the investments.

Further, in the diplomatic arena, a government tries to present a specific project that would demonstrate economic cooperation and make an agreement on that project as an output of diplomatic contact, especially in a high profile meeting. An energy project like the TCGP is fertile material for such diplomatic demonstrations, especially for China, which appreciates “win-win” cooperation. In this sense, a government certainly uses overseas business of state-owned enterprise for its own purpose.

Chapter 8 Conclusion

While this thesis primarily discusses the prospect of the energy infrastructure that links Central Asia and China, there are still unknown factors that relate and impact the future development of the TCGP as well as other potential development of energy networks in the region. The discovery of new reserves in Turkmenistan does not guarantee the expansion of production and increase of gas exports. The findings noted in the audit are for a newly discovered gas fields which has not yet been developed.

Indeed, there are significant challenges for Turkmenistan to utilize completely the resources it possesses. Table 1 in Chapter 3 indicates that enough gas would be exported from Turkmenistan to China only if Turkmenistan could significantly expand production, based on its national strategy that aims to increase its 2009 production by nearly 60 percent in 2010, which is certainly difficult to achieve. After the first CNPC's investment in Kazakhstan, the new pipeline intended to bring Chinese equity oil to the Chinese market needed to wait eight years for construction due to insufficient oil production. Clearly, the construction of TCGP may be delayed due to the progress of development of the natural gas fields in Turkmenistan. We need to keep watching the progress of pipeline construction and development works of CNPC's gas fields in Turkmenistan. As we do, we may indeed find another implication that the start of construction does not promise successful completion of the project or achievement of its original objective.

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