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**Energy Security,  
Transnational Pipelines  
and China's Role in Asia**

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**John Seaman**

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## Abstract

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In recent decades, China's transformation from a regional energy supplier to one of the world's largest net energy importers, in particular with regards to oil and gas, has led to an increasing sense of energy insecurity in Chinese policy circles. Guaranteeing adequate supplies of energy to fuel economic growth is a central element in Beijing's efforts to maintain legitimacy in the face of economic reform and transformation. To combat energy insecurity a number of initiatives are being undertaken to diversify energy inputs, suppliers, and the means of their transport. Among these initiatives are a series of transnational pipeline projects that will transport oil and gas from Eastern Siberia, Central Asia, and Southeast Asia, effectively reducing China's overall reliance on international sea lanes and maritime choke-points, in particular the Strait of Malacca. An analysis of these projects can shed light on how China's energy security policies are playing out on a regional level, how they are complicated and aided by various competing and converging interests of regional actors, and how they are re-shaping traditional regional dependencies. Indeed, more complex interdependencies among suppliers, consumers and transit states in continental Asia seem to be emerging as a consequence of China's growing role as an energy consumer. In the end, these pipelines help to diversify China's oil and gas suppliers and transport routes, easing its reliance on Middle Eastern oil and maritime transit, but they are by no means an alternative to the latter. China will continue to rely heavily on international oil markets and maritime shipping routes to deliver Middle Eastern oil. Suring up international markets and finding means to cooperate on international maritime security issues are thus and will remain in China's best interest.

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## Introduction

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A net oil exporter until the early 1990s, China now ranks as the second largest importer of oil in the world, bringing in over 4 million barrels per day (b/d), or 48% of its oil demand from foreign sources in 2009.<sup>1</sup> This dramatic transformation of China's energy picture over the last decade, driven by spectacular, sustained economic growth, has brought energy security to the forefront of the country's strategic agenda. Guaranteeing increasing supplies of energy resources at affordable prices is seen as key to sustaining economic growth and promoting social harmony, both crucial elements of the Chinese Communist Party's present claim to legitimacy.

Many of China's strategists have wrestled with how best to achieve an acceptable level of energy security given the country's increasing reliance on energy imports, particularly from the Middle East and Africa. The threat of local and regional instability in supply regions, coupled with more geopolitical concerns such as maritime security and the fear of a broader U.S. strategy of containment towards China fosters a growing sense of insecurity for the latter's political leadership. Moreover, the threat of market instability, as witnessed by the 2008 price hike in international oil markets to nearly \$150 per barrel, fosters uncertainty in the market-based approach that has served as the bedrock of energy security in the West for decades. There is much debate among strategists and commentators on all sides of this issue as to whether China is looking to strengthen or avoid international energy markets with its long-term policies.

Within this context, China has been developing a strategy to diversify the geographic sources of its oil and gas imports that would reduce dependence on Middle Eastern suppliers and international sea lanes. This has had a profound effect on relations with potential supply and transit states in continental Asia, in particular Russia, Turkmenistan, Kazakhstan, and Myanmar. Transnational pipeline projects to deliver oil and gas from and through these countries to Chinese consumers have been in the making in some cases since the mid-1990s. While these pipelines are more costly than private, seafaring oil tankers in both financial and diplomatic terms, they

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<sup>1</sup> China surpassed Japan in oil imports for the first time in 2009. Japan's net oil imports decreased to 3.6 million b/d, due no doubt in part to the effects of global economic turmoil on the Japanese economy. Al-Rikabi, R., "China Topples Japan as Asia's Top Importer", *International Oil Daily*, 25 January 2010.

nevertheless represent a crucial, strategic alternative to the Strait of Malacca and help to ease dependence on supplies from the Middle East and Africa. But given the interests of other economic and political heavyweights in the region, including Russia, Japan, South Korea and India, the bilateral, regional and geopolitical issues behind these projects make for potentially volatile dynamics.

The purpose of this paper will be to analyze the implications of China's drive to improve energy security on relations with its inland, energy supply-side neighbors. It will do so primarily by examining a number of bilateral, regional and geopolitical issues surrounding various pipeline projects that have come to fruition within the last few years or are currently in the works. These pipelines include the Eastern Siberia-Pacific Ocean (ESPO) oil pipeline through Russia, the Kazakhstan-China oil pipeline, the Central Asia-China gas pipeline originating in Turkmenistan, and a dual set of oil and gas pipelines being built from Myanmar.

This paper is organized based on two sets of questions: 1) Why is the development of transnational oil and gas pipelines so important to China and how do these projects fit into the country's broader approach to improving energy security? 2) How is China's role in Asia evolving as a result of these pipeline projects, what are the competing bilateral, regional and geopolitical interests at stake, and how have these dynamics played out over the course of pipeline negotiations?

# China's Energy Insecurity and Policy Responses

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The victory of the Chinese Communist Party over Kuomintang forces in 1949 brought with it, among other things, an important principle for governing the nation's use of resources: self-sufficiency. The Communists rode a wave of anti-imperialist sentiment that had grown from nearly a century of meddling and occupation by foreign powers. But the end of the Mao Zedong era in the late 1970s and the subsequent economic reforms that have bolstered decades of spectacular economic growth are challenging this principle. Today, the country's natural resources simply cannot sustain the economy's ever-growing demand for inputs and the mantra of economic growth and development has long overruled the call for self-sufficiency. The Chinese Communist Party (CCP) now depends on the promise of prosperity and social cohesion for its political legitimacy. Without economic growth, it is widely believed that social instability will follow and that the CCP's mandate could be severely threatened. Energy resources are in many ways emblematic of this transformation as they are essential to growth. While efforts have been made to maintain as much energy independence as possible, in particular through the heavy reliance on coal,<sup>2</sup> imported oil and gas are increasingly crucial elements of China's energy mix.

## *Oil & Gas: rising demand and increasing imports*

China's oil consumption has been growing rapidly since 1990, and the country currently ranks as the world's second largest oil consumer at more than 8 million barrels per day (b/d).<sup>3</sup> The International Energy Agency (IEA) projects that this growth will likely continue well into the future, reaching as high as 11 million b/d in 2015 and 16.5 million b/d by 2030.<sup>4</sup>

Growth in oil demand in recent years has largely been driven by a booming transportation sector. Road transportation in particular

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<sup>2</sup> Coal makes up roughly 70% of China's primary energy usage.

<sup>3</sup> The United States ranks first, consuming over 18 million b/d, according to US Energy Information Agency (EIA) statistics from 2009, [www.eia.doe.gov](http://www.eia.doe.gov).

<sup>4</sup> International Energy Agency (IEA), World Energy Outlook: China and India Insights, 2007, p.288



makes up 66.7% of the sector's energy use.<sup>5</sup> With expanding wealth comes a greater demand for personalized transport, and the government has recently taken measures to encourage such demand. Expansionist transportation policies are now helping to push demand forward by reducing taxes on new vehicle ownership, offering subsidies to rural populations for the purchase of small vehicles, and maintaining artificially low prices on the domestic market for gasoline and diesel fuel. Despite the dramatic rise in crude oil prices in 2008, the number of cars on the road in China was 25% higher than in 2007.<sup>6</sup> In 2009, reported vehicle sales reached 13.6 million units, smashing the industry-estimated 10 million units and making China the largest vehicle market in the world. Passenger vehicle sales on the year grew by more than 52% over 2008.<sup>7</sup> Growth in personal transport is expected to continue. In 2007 the IEA projected that the transportation sector as a whole would account for two-thirds of the increase in China's oil demand between 2005 and 2030.<sup>8</sup>

Despite possessing the sixth largest proven oil reserves in the world, China's domestic oil production has been and will remain relatively stagnant. China's largest oil field of Daqing in the northeast has been the workhorse of the country's oil production since the 1960s but has since peaked and begun to decline. Production from newer oil fields such as Shengli and Bohai Bay on the northwestern coast, coupled with technological advancements have been able to make up the difference, but the reserves and extraction capacity needed to meet demand simply do not exist. After peaking at nearly 4 million b/d in the next five years, China's oil production is not expected to exceed 3.5 million b/d in the long term.<sup>9</sup>

The increasing demand for oil will thus have to be covered by imports. China has been a net oil importer since the mid-1990s and currently ranks third in the world, importing over 3.8 million b/d in 2008,<sup>10</sup> and 4.09 million b/d in 2009.<sup>11</sup> By 2030, the IEA projects that China could be importing 13.1 million b/d, or 80% of its crude oil.<sup>12</sup>

In addition to oil, natural gas has become an increasingly valued piece of China's overall energy mix in recent years. This is

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<sup>5</sup> Asia Pacific Energy Research Center (APERC), *Understanding Energy in China*, 2009, p.26

<sup>6</sup> McCracken, Ross, "Stockpiling or Consuming: China's Current Oil Demand", IAEE Energy Forum, First Quarter 2010, p.29-30, [www.iaee.org](http://www.iaee.org).

<sup>7</sup> Reuters, "China tops global car market in 2009, challenges ahead", 11 January 2010, <http://www.reuters.com/article/idUSTRE60A12220100111>; In the face of record high oil prices in 2008, this growth is a testament to the degree of shelter given to the Chinese consumers from the international oil market in the name of social stability.

<sup>8</sup> Oil consumption for transportation is predicted to grow from 32% to 55% of total oil demand from 2005 to 2030, according to the IEA, IEA 2007, *op.cit.*, p. 297.

<sup>9</sup> IEA 2007, *op.cit.*, p. 321.

<sup>10</sup> The US is the largest net importer at 11 million b/d, according to US, EIA figures from July 2009, [www.eia.doe.gov](http://www.eia.doe.gov).

<sup>11</sup> Al-Rikabi, R., *op. cit.*

<sup>12</sup> IEA 2007, *op.cit.*, p.326.

due largely to a concerted effort on the part of China's central authorities to diversify the energy mix and to confront a growing number of environmental concerns. Indeed, when compared to oil and coal, natural gas is a considerably cleaner-burning fuel.

While environmental concerns have not traditionally been at the center of China's energy policies, the environmental impact of energy use is increasingly threatening to economic growth and social stability at home. Due largely to its reliance on coal, China emits significant quantities of toxic NO<sub>x</sub> and SO<sub>x</sub> gases, and is the world's largest emitter of CO<sub>2</sub>. The immediate effects of pollution on the population's health are considerable, as an estimated 750,000 people die prematurely every year due to illnesses related to air pollution.<sup>13</sup> In the long term, global climate change could also hold dire consequences for China, worsening the problem of desertification, affecting food production and threatening coastal areas.

Contrary to the government's traditionally tight grip on displays of public dissent, particularly when related to political reform, discord over environmental issues seems to have been given a relative green light.<sup>14</sup> This only underlines the need for the authorities to make a concerted effort to respond to the root causes of environmental degradation, including on energy issues. To this effect, natural gas is an increasingly strategic substitute for oil and coal in a number of domains from heating to electricity generation to industrial use. China's government hopes to increase the share of natural gas in total energy consumption to 10% by 2020, a goal that could prove overly ambitious given that gas only made up 2.4% of the energy mix in 2005.<sup>15</sup>

In 2008, China consumed an estimated 78 billion cubic meters (bcm) of gas, an almost 12% increase over 2007.<sup>16</sup> The IEA projects that by 2030 China could be consuming as much as 239 bcm.<sup>17</sup> As demand for natural gas grows, so too will gas imports. An estimated 9% of China's gas demand in 2010 will be met by imports.<sup>18</sup> Various projections show that imports will account for as much as 40% of demand by 2020,<sup>19</sup> and over 55%, or 132 bcm by 2030.<sup>20</sup>

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<sup>13</sup> DYER, Geoff, "China: Difficulties of a different energy model", *The Financial Times*, 12/10/2009.

<sup>14</sup> Today more than 3,300 non-governmental organizations (NGOs) in China are active on environmental issues, and many of them voice their positions openly via the press and electronic media. See: Niquet, Valérie, "La Chine à la veille du Copenhague", *Note de l'Ifri*, September 2009, p. 7, [www.ifri.org](http://www.ifri.org).

<sup>15</sup> IEA 2007, *op.cit.*, p.262.

<sup>16</sup> IEA, Natural Gas Market Review 2009, p.124

<sup>17</sup> IEA 2007, *op.cit.*, p. 330-333.

<sup>18</sup> "CNPC: China's gas demand to grow with capacity expansion", *China Energy*, 4 February 2010.

<sup>19</sup> Collins, G. "China's Growing LNG Demand Will Shape Markets, Strategies," *Oil & Gas Journal*, October 15, 2007.

<sup>20</sup> IEA 2007, *op.cit.*, p.332.

## ***A growing sense of energy insecurity***

China's growing dependence on energy imports raises a number of questions about the country's overall energy security. For most analysts, energy security in the Chinese context means being able to guarantee adequate energy supplies relative to the economy's demand, while maintaining a price that will not compromise the political leadership's primary objectives.<sup>21</sup> Adequate supplies and affordable prices are crucial for fueling economic growth, which is seen as the catalyst for creating social harmony. But an increasing reliance on imports limits the government's ability to guarantee stable supplies and prices.<sup>22</sup>

### **Threats to import supply**

Supply issues are the most strategically significant element of the energy security equation. In 2009, an estimated 78% of the country's oil imports came from the Middle East or Africa.<sup>23</sup> A growing majority of China's oil imports are therefore coming from the global mix of potentially unstable regions in a political or security sense. Recent tensions over Iran's nuclear program only highlight the problem.

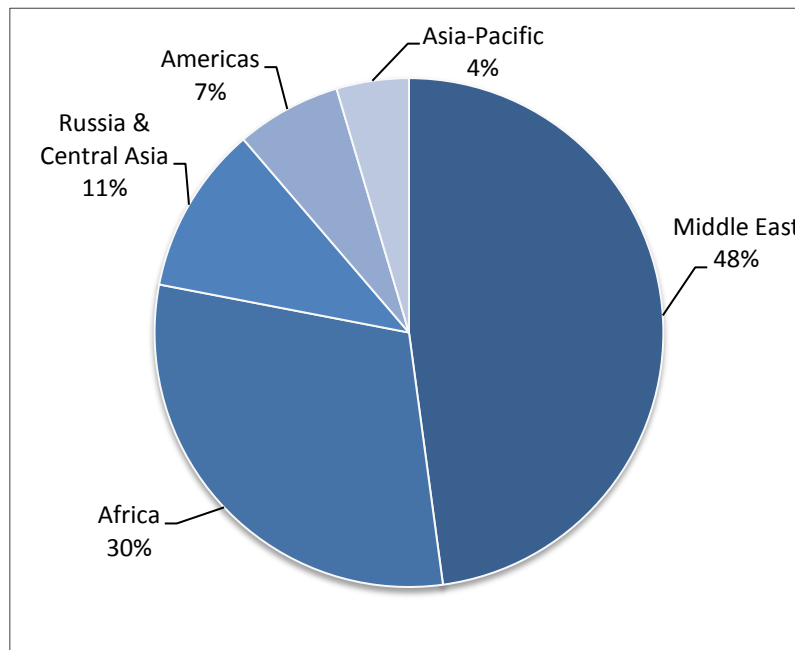
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<sup>21</sup> Downs, E. « Energy Security Series: China », *The Brookings Foreign Policy Studies*, December 2006, p. 13, [www.brookings.edu](http://www.brookings.edu).

<sup>22</sup> Indeed, some regions have experienced chronic shortages due both to a lack of supply and ill-adapted domestic distribution systems. In 2004, for example, 21 of 34 provinces suffered regular blackouts. In the winter of 2009/2010, electricity and natural gas shortages also caused widespread blackouts and left homes without heat during some of the coldest days of the year.

<sup>23</sup> Al-Rikabi, op.cit.

Graph 1. Origins of China's Oil Imports 2009



Sources: Reuters, International Oil Daily

Importing oil from the Middle East and Africa also means depending on international sea lines of communication (SLOCs) and a number of notorious “choke points”, or narrow passages that ships are obliged to pass through given geographic constraints. Oil exports from the majority of producers in the Persian Gulf must pass through the Strait of Hormuz, where the US Navy maintains a substantial presence with its 5<sup>th</sup> Fleet. Perhaps a more pressing concern is the strategic bottleneck through the Strait of Malacca, often referred to as the “Malacca Dilemma”.<sup>24</sup> The Strait is a narrow passage situated between Malaysia, Indonesia and Singapore linking the Indian and Pacific Oceans with no real, viable maritime alternative.<sup>25</sup> An estimated 15 million b/d of oil pass through this Strait, including all of China’s Middle Eastern and African oil imports.

China’s reliance on SLOCs exposes a large amount of its energy supplies to potential disruptions caused by piracy, terrorism, or even, in the extreme case, blockade. Indeed, many Chinese strategists focus on the threat posed by the US Navy and its allies while downplaying the risk of terrorism or piracy, as one is targeted while the others are generally random. The U.S. Navy is widely regarded as the guarantor of international maritime transit and

<sup>24</sup> Niquet, Valérie, “Energy Challenges in Asia”, *Note de l’Ifri*, October 2007, p.16-17, [www.ifri.org](http://www.ifri.org).

<sup>25</sup> Alternative passages do exist further south and east, such as the Straits of Sunda and Lombok, but the added distance makes them economically unviable and does not adequately resolve the problem of strategic vulnerability.

therefore holding an essential strategic advantage over China in the case of a major altercation. This is typically envisioned in the form of a conflict over Taiwan, but territorial disputes in the South China Sea and recent tensions regarding US naval activities off the coast of China's Hainan Island highlight the potential volatility of the seas.<sup>26</sup>

While oil supply vulnerability along SLOCs is China's main external energy security concern, its increasing reliance on liquefied natural gas (LNG) imports only deepens its reliance on maritime transit. China is currently building receiving ports along its southern and eastern coastlines to accept shipments of LNG. While these imports may largely originate in the Asia-Pacific, and therefore mostly avoid the primary maritime choke-points, they nevertheless increase China's strategic dependence on sea lanes for energy supplies.

Map 1. Key Shipping Lanes for China's Imports



Source: University of Texas at Austin, Perry Castaneda Library, 2009  
[http://www.lib.utexas.edu/maps/map\\_sites/oil\\_and\\_gas\\_sites.html](http://www.lib.utexas.edu/maps/map_sites/oil_and_gas_sites.html)

<sup>26</sup> See: McDonald, Mark, "U.S. Navy Provoked South China Sea Incident, China Says", *The New York Times*, 10 March 2009, [www.nytimes.com](http://www.nytimes.com).



## The risk of price volatility

Price volatility in oil markets is also a growing risk to China's energy security.<sup>27</sup> Like other oil importers, China depends on the international oil market for its imports. This means it is vulnerable to price shocks associated with demand or supply disruptions like anyone else. While the final price of petroleum products on the domestic Chinese market is highly regulated so as to shelter Chinese consumers, growing oil import volumes at shifting prices raise the financial burden of the Chinese state and its national oil companies (NOCs). In fact, many NOCs attempt to make up for this loss through upstream investments, essentially securing oil supplies at the source and then selling most of them on the international market for a profit, as opposed to shipping them directly back home at a loss.<sup>28</sup> Even so, companies that supply a subsidized market such as China's usually bear the financial burden of the subsidy.

## A multidimensional set of policy responses

A number of strategies have been adopted in recent years to confront the challenges to China's energy security. In keeping with the logic of self-sufficiency, coal has been and will remain a central part China's energy mix.<sup>29</sup> Efforts have also been made to promote energy efficiency and conservation, whether through the adoption of newer, more efficient technologies or through an emphasis on less energy-intensive sectors of the economy, such as services.<sup>30</sup> China's central planners have also made concerted efforts to promote alternative energy sources, such as hydro, nuclear or a host of renewable "clean" energies that include biomass, solar and wind.<sup>31</sup>

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<sup>27</sup> Until very recently natural gas could only be transported via pipeline, making the nature of gas markets much different from oil. While oil markets tend to be more globally connected, gas markets are by nature local or regional because of shipping constraints. The development of LNG could bring about changes in the long term, but for now this is not the case.

<sup>28</sup> APERC 2008, *op. cit.*, p. 76.

<sup>29</sup> China possesses some of the world's largest coal reserves. The IEA projects that coal will continue to account for 63% of China's primary energy mix in 2030, with over two thirds of coal being used for the production of electricity. IEA 2007, *op. cit.*, p. 288.

<sup>30</sup> After annual improvements in energy intensity per unit of GDP between 1980 and 2001, efficiency suddenly declined from 2002-2005. In reaction to this reversal, China's 11<sup>th</sup> Five Year Plan (2006-2010) sought to reduce the economy's energy consumption per unit of GDP by 20% over the course of five years. While the final objective may be difficult to attain, energy intensity was nevertheless reduced by 1.78% in 2006, 4.04% in 2007, and 5.2% in 2008, according to official figures. China's pledge at the Copenhagen conference on climate change in 2009 to reduce the carbon intensity of its economy by 40 to 45% by 2020 is a further sign of the government's desire to improve efficiency. See: "Statement of the China Energy Group on China's Recently Announced Carbon Intensity Target", Lawrence Berkley National Laboratory, 15 December 2009, <http://china.lbl.gov/>.

<sup>31</sup> In 2007 the National Development and Reform Commission (NDRC) approved a directive to produce 15% of the nation's energy from non-fossil fuel, renewable sources.

Regardless of these efforts, oil and gas will play crucial roles in China's energy future. In coming to terms with this reality, a number of broad initiatives have been taken to bolster the security of oil and gas supplies.<sup>32</sup>

### **Diversification of suppliers and transit routes**

Diversifying suppliers and transit routes for oil and gas is the centerpiece of this risk management strategy. By multiplying the geographic sources of its oil and gas imports, China can mitigate the effects of supply disruption from any particular region while reducing its dependence on the Strait of Malacca and maritime transport in general. To this effect, China has sought to increase oil imports from Africa and the Americas, but also from sources closer to home in Asia. Reserves in Russia and Kazakhstan have become key elements of this strategic calculus. Potential oil transit routes through South or Southeast Asia are also seen as a way to reduce the length of time spent at sea and avoid dangerous choke points. For gas imports, China has made significant investments necessary for importing LNG, particularly from sources in the region, such as Australia, but has also sought to tap into the wealth of gas reserves in Russia, Central Asia and, Myanmar that will be carried by pipeline and avoid the high seas altogether.

### **Encouraging upstream investment by Chinese NOCs**

Efforts to improve China's presence at the source of oil and gas extraction plays into this diversification strategy. Its NOCs, notably the China National Petroleum Corporation (CNPC), Sinopec and CNOOC, have played a major role in what is often called China's "going out" strategy.<sup>33</sup>

The government has encouraged investment in upstream oil and gas projects across the globe through a number of incentives, including on interest rates, taxes and insurance. It has also backed up oil and gas deals with high level diplomatic and economic support in supply regions. Africa is a major focus of this strategy, but, as

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<sup>32</sup> It should be noted that these responses are rather diffuse, constituting a patchwork of strategies rather than one, coherent national energy strategy. China's lack of a strong, central policy-making body on energy is in large part to blame for this. See: Garrison, Jean, *China and the Energy Equation in Asia: The Determinants of Policy Choice*, FirstForumPress: Boulder, CO, 2009, p.149; and Downs, Erica, "China's "New" Energy Administration", *China Business Review*, November-December 2008, p.42-45, [www.brookings.edu](http://www.brookings.edu).

<sup>33</sup> Much has been written on the expanding role of these companies in oil exploitation around the world. For more detailed assessments of China's broader "going out" strategy in relation to energy, see for example Ziegler, Charles, "The Energy Factor in China's Foreign Policy", *Journal of Chinese Political Science*, vol. 11, no. 1., Spring 2006, p.1-24; International Crisis Group, "China's Thirst for Oil", *Asia Report No.153*, 9 June 2008, [www.icg.org](http://www.icg.org); and Downs, Erica, "China's NOCs: Lessons Learned from Adventures Abroad", in *Fundamentals of the Global Oil and Gas Industry 2008*, Petroleum Economist: London, 2008, p.27-31, [www.brookings.edu](http://www.brookings.edu).

explained below, China has also had considerable success in upstream projects in Central Asia. Still, China's investments in upstream activities abroad remain quite small relative to global oil and gas upstream investment.<sup>34</sup>

### Protecting maritime transport routes

Boosting China's naval capacity also has energy security justifications. Many analysts both in China and abroad have noted that Beijing lacks of a "blue water" navy capable of intervening along sea lanes in order to protect its shipments of oil and other products and resources. Although highly debated among both Chinese and foreign strategists, building such a navy to protect its interests at sea has become an increasingly accepted interpretation of China's rising military spending.<sup>35</sup>

China's increasing ability to project naval power beyond the region was witnessed in early 2009 when for the first time in centuries a vessel of the Chinese navy was sent on operation beyond the Pacific sphere and into the Gulf of Aden, along the African coast. This operation was officially an anti-piracy mission, but the symbolic value of it is significant. Beijing's subsequent "string of pearls" strategy to finance the construction of a number of deep water ports along the Indian Ocean is often seen as an attempt to build influence along strategic shipping routes and to establish ports that can one day dock Chinese vessels on mission in or in transit through the region.<sup>36</sup> Nevertheless, many analysts admit that China's naval capabilities are nowhere near being able to project real naval power beyond its territorial waters.

### Building strategic oil reserves

An added dimension to the supply issue is the creation of strategic crude oil reserves. Begun in 2001, the reserves are designed to moderate supply disruptions and price shocks, though the modalities for their use is yet unclear. They are being built in three stages. The first stage, completed in 2009, established a storage capacity of 103 million barrels. Phase two is on line to be completed by 2011 and raise storage capacity to 270 million barrels, while phase three will top off at more than 500 million-barrel capacity. While a target date for final completion has not been set, plans are also underway to establish refined oil stockpiles as well.<sup>37</sup>

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<sup>34</sup> As of 2006, for example, China's NOCs accounted for only 2.6% of total upstream oil investment in Africa, according to independent studies. Likewise, in 2004-05 these companies only accounted for 1% of global upstream oil investment. See APERC 2008, *op. cit.*, p.74-76.

<sup>35</sup> Lai, David, "Chinese Military Going Global", *China Security*, vol.5, no.1, Winter 2009, p.3-9.

<sup>36</sup> Zajec, Olivier, "Actualité et réalité du 'collier de perles'", *Monde Chinois*, no.18, Summer 2009, p.59-67.

<sup>37</sup> EIA, « Country Analysis Briefs : China », US Department of Energy, July 2009, [www.eia.doe.gov/emeu/cabs/China/Oil.html](http://www.eia.doe.gov/emeu/cabs/China/Oil.html)



## ***Energy security and transnational pipelines***

Two elements of China's approach to energy security have a direct impact on relations with its continental, supply-side neighbors: 1) the need to diversify the origins of oil and gas imports and to reduce the country's reliance on maritime transport, particularly through the Strait of Malacca, have increased the strategic value of potential hydrocarbon reserves in Siberia, Central and Southeast Asia, and the importance of potential overland *transit* routes through states in South and Southeast Asia, particularly Myanmar; and 2) the need to diversify primary energy sources and respond to environmental concerns has increased the projected demand for natural gas and therefore highlighted once again the importance of China's continental neighbors in meeting future energy needs. Improving energy security has thus become an important, if not a central factor in China's relations with the energy producing and transit states along its periphery.

# Transnational Pipelines and China's Regional Standing

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Transnational pipelines effectively create long-term interdependencies between suppliers and consumers. They require considerable amounts of financial capital, in some cases worth tens of billions of dollars, and can only be profitable over the course of many decades. They also carry considerable costs and benefits in political capital, both in the short and long term. In this sense, pipelines imply a significant amount of risk in both the political and financial sense. The political stability and financial viability of suppliers and consumers must be weighed within the context of broader domestic and international goals. China's perceived need for transnational pipelines is better understood when viewed in the context of the country's energy challenges, as discussed above. The following analysis will examine China's transnational pipeline projects in Russia, Central Asia and Southeast Asia and the interplay of various geopolitical, regional and bilateral elements.

Ultimately, this discussion will help shed light on China's role as a regional actor. Only twenty years ago China was a net supplier of oil, and only in the last few years has it become a net importer of natural gas. China's shift from an energy supplier to an energy consumer and its need to improve its energy security is a major factor in Asia's shifting balance of power.

## ***Russia: Wrangling over resources in Eastern Siberia***

### **A wealth of opportunities**

On paper, the opportunities for Sino-Russian cooperation on oil and gas look almost too good to be true. Russia possesses the world's largest proven natural gas reserves and the 2<sup>nd</sup> largest oil reserves outside of the Middle East.<sup>38</sup>

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<sup>38</sup> Russia's gas reserves account for 23% of the global total. Its proven oil reserves are 6.3% of the world's total, giving it the 7<sup>th</sup> largest proven reserves in the world while Venezuela accounts for the largest oil reserves outside of the Middle East. BP *Statistical Review of World Energy*, July 2009, [www.bp.com/productlanding.do](http://www.bp.com/productlanding.do).

Russia is also looking to diversify its oil and gas export markets. Until recently it has relied heavily on European markets for two-thirds of its oil exports and nearly all of its gas exports. For gas in particular, this dependence could become a greater liability as producers in North Africa, Central Asia and the Middle East emerge as possible supply alternatives for Europe. Recent tensions over pipeline transit through Eastern Europe, in particular Ukraine, also increase Russia's perception of instability in westward markets.<sup>39</sup>

Expanding energy markets in East Asia, and particularly in China, have created an opportunity to offer Russia some measure of diversity from Europe. Indeed, some of Russia's largest and most underdeveloped oil and gas fields are in Eastern Siberia, making China, East Asia or the larger Pacific Basin ideal markets for Russian exports. As oil and gas fields in Western Siberia continue to decline,<sup>40</sup> new financing from Asian partners for developing fields in the east has become crucial to meeting the country's long-term production targets. Developing pipeline networks to East Asian or Pacific markets has the added incentive of bringing economic development opportunities to the Russian Far East, a region that has not fared well in the post-Soviet era (see Map 2 on page 21).

For China, Russian oil and gas reserves represent strategic diversity in the face of Middle Eastern and African oil imports, given their geographic proximity and Russia's aversion to external, and notably western influence.<sup>41</sup> In addition to the strategic benefits of avoiding international sea lanes and chokepoints, transnational pipelines bring the bonus of longer-term economic opportunity to China's flagging northeastern oil producing regions. Over time the decline of the Daqing oilfield in particular threatens the viability of the region and the state-owned oil companies that maintain extraction and refining operations there, notably Daqing Oilfield Inc., an affiliate of CNPC. Pipelines from Russia can therefore serve not only a national security interest, but can also provide opportunities for otherwise fading companies.

Within this context, discussions on energy cooperation began in 1994 with Russia taking the initiative to propose building a pipeline from Eastern Siberia. Following a visit by Russian President Boris Yeltsin to China in 1996, the two countries signed energy cooperation agreements that included constructing an oil pipeline from fields in Angarsk, Eastern Siberia to Daqing. It took five years for details to emerge, but in July 2001, a basic agreement was finally reached on the pipeline, which was then estimated to cost \$3 billion and be

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<sup>39</sup> See: Mankoff, J., "Long Pipelines Make Bad Neighbors", *Foreign Policy*, 12 January 2010, [www.foreignpolicy.com](http://www.foreignpolicy.com).

<sup>40</sup> See: EIA, "Country Analysis Brief: Russia", US Department of Energy, May 2008, [www.eia.doe.gov/emeu/cabs/Russia/Oil.html](http://www.eia.doe.gov/emeu/cabs/Russia/Oil.html).

<sup>41</sup> Ziegler 2006, *op. cit.*, p.188.

completed by 2005. In May 2003, CNPC and the private Russian firm Yukos signed an agreement to jointly construct the Angarsk-Daqing pipeline. But this deal would soon go sour.

### **Cooperation hindered by competition and mistrust**

Despite the win-win logic of Sino-Russian energy cooperation, not all has been roses and chocolate. Indeed, cooperation has been complicated by a number of thorny geopolitical, regional and bilateral issues.

Not least among these issues is China's historical antagonism with Japan and the latter's need to diversify its own oil imports, over 90% of which come from the Middle East.<sup>42</sup> Both countries have been willing to put forward tens of billions of US Dollars in competing loans for financing pipeline projects in recent years and Russia has been content to play both sides.

On the sidelines of the Angarsk-Daqing deal, Japan presented Russia with a counter offer that was too good to refuse. Investments totaling over \$7 billion in infrastructure and oil field development backed a plan to extend the East Siberian pipeline to the port town of Nakhodka on the Pacific coast. From there Russian oil could in theory supply 1.6 million b/d to broader East Asian and even North American markets. After a much-publicized political battle between Russian President Vladimir Putin and billionaire Yukos boss Mikhail Khodorkovsky, which ended in the Khodorkovsky's imprisonment and the state's seizure of Yukos, the original Angarsk-Daqing deal was thrown out. While cautious not to comment on Russia's internal affair, Beijing officials were reportedly infuriated by this turn of events.<sup>43</sup>

A number of factors explain why bilateral energy cooperation became more complicated. While Russia and China share common vantage points on various geostrategic issues, particularly in regards to NATO expansion and the US military presence in the region, their broader orientations and geopolitical goals tend to put them at odds.

Both economically and politically China is more concerned about its relationship with the United States and creating room for growth through a "peaceful rise" strategy. Russia, on the other hand, is more closely tied to Europe economically. It also hopes to forge a place for itself in a multipolar world and is not afraid to resort to more muscular displays of power.<sup>44</sup> In the face of a rising China, many in

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<sup>42</sup> For an in depth analysis of this contentious relationship, see Niquet, V., *Chine-Japon: L'affrontement*, Perrin 2006, or "Energy Challenges in Asia", *Note de l'Ifri*, October 2007.

<sup>43</sup> Goldstein and Kozyrev, 2006, *op.cit.*, p.171; Ziegler, 2006, *op.cit.*, p.189.

<sup>44</sup> Witness, for example, Russia's August 2008 intervention into Georgia, seen by some as an attempt by Russia to exert itself on a geopolitical scale by use of military force; Allison, R. "Russia resurgent? Moscow's campaign to 'coerce Georgia to peace'", *International Affairs*, Vol. 84, No. 6, 2008, pp.1145-1171.

Russia are concerned about being relegated a status of junior partner, essentially acting as a second-tier power in a bilateral world where the US and Japan sit on the other side of the fence.<sup>45</sup>

Energy has a central role to play in this geopolitical game, as access to oil and gas supplies in Eastern Siberia has deep and lasting ramifications for the balance of power in East Asia. Allowing China more or less exclusive access would give it an acute strategic advantage. For Russia to become an “energy superpower”, as its leaders have espoused, it must avoid giving any one consumer too much power to control prices and outcomes. This gives all the more reason for Russia to take its oil and gas to world markets rather than through pipelines directly to China.

China’s increasing engagement with states in Central Asia is also lingering in the background. While not an overtly contentious issue, this engagement nevertheless counters an essential component of Russian influence in the region, seen as its traditional backyard. As will be explained further on, Central Asian states, in particular Kazakhstan, Uzbekistan and Turkmenistan, depend on pipelines through Russia for transporting their respective oil and gas exports. But a number of recent pipeline deals with China have helped to undermine Russian influence by giving these states alternative, long-term markets and shipping routes that avoid Russia all together. These developments only add to the mutual suspicion in a Sino-Russian relationship that has been called more of an “axis of convenience” than a true “strategic partnership”.<sup>46</sup>

### **Cooperation moves forward – Russia as a “swing supplier”**

Nevertheless, Sino-Russian relations on the whole seem to have never been better. Russia’s suspicions of China’s rise have certainly not stopped energy cooperation from moving forward, and China seems willing to put major financial and political capital on the line to ensure its energy needs are met.

Following a flurry of high-level visits, a new compromise deal for the pipeline was eventually agreed to in spring 2006. The East Siberian-Pacific Ocean (ESPO) pipeline would travel from Taishet<sup>47</sup> to the coast and include an additional spur to Daqing.<sup>48</sup>

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<sup>45</sup> Goldstein and Kozyrev, op.cit. ; for supporting and competing arguments, see also: Tsygankov, A., “What is China to Us? Westernizers and Sinophiles in Russian Foreign Policy”, *Russie.Nei.Visions*, No. 45, December 2009, [www.ifri.org](http://www.ifri.org).

<sup>46</sup> Lo, B. *Axis of Convenience: Moscow, Beijing, and the New Geopolitics*, Brookings Institution Press, 2008, 277p.

<sup>47</sup> Taishet was eventually chosen as the starting point for the pipeline due to environmental concerns over proximity to Lake Baikal.

<sup>48</sup> Russia’s commitment to build the Daqing spur first was no doubt sweetened by the fact that China lent \$6 billion to Russia’s state-owned oil producer Rosneft in 2005 for

The first \$12 billion leg of the ESPO, connecting Taishet to Skovorodino in the Russian Far East, was completed in December 2009 and will be capable of handling 600,000 b/d. From Skovordino the oil is being sent eastward via rail to the new \$2 billion port of Kozmino. From there it is loaded onto tankers and sold on the market.

In early March 2010 the pipeline was operating at 250,000 b/d capacity and the first shipments of ESPO oil arrived in Japan and China at the beginning of the month. The spur to Daqing is expected to be completed in 2011 while the pipeline to Kozmino won't be completed before 2014. Once the pipeline reaches Kozmino it is expected to have a transport capacity of 1 million b/d and could reach 1.6 million b/d by 2025.

Russian authorities have worked hard to assure China that the Daqing spur would be given priority, and so far it seems that will be the case. In February 2009 China finalized a \$25 billion loan package via the China Development Bank to Russia's state-owned Transneft, the oil pipeline operator, and Rosneft, the nation's largest oil producer. As a part of this package, CNPC and Rosneft reached a deal for 300,000 b/d over a period of 20 years once the pipeline has been completed, but the final pricing scheme for this oil has not been officially disclosed.<sup>49</sup>

Ultimately, the competition over resources in Eastern Siberia has so far proven beneficial for Russia, and for East Asia as well. Russia has been able to find the capital necessary to become a "swing supplier", adding options for diversifying its markets away from Europe, where long-term oil demand is expected to decline.

In turn, although the total amounts of oil shipped through the ESPO are small relative to total import demand, consumers in East Asia are able to find a much-needed alternative to Middle Eastern suppliers.<sup>50</sup>

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purchase of Yukos assets; Arvedlund, E., "China Helped Oil Company in Russia Buy Yukos Unit", *The New York Times*, 2 February 2005.

<sup>49</sup> Winning, D., Oster, S., "Russia, China Strike \$25 billion Oil Pact", *The Wall Street Journal*, February 18, 2009.

<sup>50</sup> Barbajosa, Alejandro, "Russia Raises Eyebrows with Inroads of ESPO Crude", *Reuters News*, 25 February 2010; and Chazan, Guy, "Russian Pipeline Raises Competition in Asia", *Wall Street Journal*, 18 February 2010.



Map 2. Oil and Gas pipelines in Russia (2007)



Source: CIA, US Energy Information Administration, <http://www.eia.doe.gov/emeu/cabs/Russia/Maps.html>

Note: Map dates from 2007 and does not take into account the latest developments

## What of future gas pipeline projects?

On the heels of the ESPO deal, details on potential gas pipeline projects have also emerged. With most of the world reeling from the financial and economic crisis, and international investors feeling put off by Russia's poor investment conditions, China's NOCs appear more willing and able to take the risk of making oil and gas investments in Russia. In this sense, Russia has few other viable options for obtaining additional foreign capital. In light of this fact, plans to construct gas pipelines from both Western and Eastern Siberia, proposed in 2006, were officially endorsed during Russian Prime Minister Vladimir Putin's visit China in October 2009. Taken together, these pipelines would be capable of transporting up to 70 bcm of gas per year: 30 bcm via a pipeline crossing Russia's Altai region and into Xinjiang, and 40 bcm combining gas from Russia's Sakhalin Islands in the Pacific and/or the Kovykta gas field in Eastern Siberia.<sup>51</sup> China officially announced in early March 2010 that a pricing deal had finally been reached, presumably linking gas prices to the price of oil, but details were not disclosed.<sup>52</sup> Still, whether any of these pipelines will be realized remains to be seen.

While China's position may be strengthened by its ability to weather the global financial storm, the development of LNG technology has allowed competition for Russian gas exports in a broader East Asia. Japanese and Korean markets are no doubt major factors in negotiations for East Siberian gas. Indeed, Russia has already shown its desire to access to East Asian LNG markets, particularly Japan and South Korea, through gas projects in the Sakhalin Islands.<sup>53</sup> This in turn affects the final outcome for China. Ultimately, the strong political control of the Russian state over oil and gas makes the viability of investments uncertain, as witnessed over the course of negotiations for the ESPO pipeline.

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<sup>51</sup> Kefferputz, Roderick, "The 2009 Sino-Russian Gas Deals: Cementing a Strategic Partnership?", *Pipeline and Gas Journal*, 1 February 2010.

<sup>52</sup> This would be a significant breakthrough in that China has argued for years that the price of Russian gas should be linked to the local Chinese price of coal, as the gas would in fact act as a coal substitute in power generation. Sources: Kefferputz, R. op.cit. 1 February 2010; and "China, Russia Agree on Gas Price for Imports – Energy Chief", *Dow Jones International News Wire*, 4 March 2010.

<sup>53</sup> Belton, Catherine, and Dickie, Mure, "Russia Opens New Front to Supply Energy to Asia", *Financial Times*, 19 February 2009; See also: [www.sakhalinenergy.com/en/](http://www.sakhalinenergy.com/en/)



## **Central Asia: Building regional interdependencies**

### **China's upstream investment in Central Asia**

The quest for energy resources in Central Asia has often been dubbed the “new Great Game”, in reference to 19<sup>th</sup> Century colonial battles for control and influence in the region. While the reserves of oil and gas in Central Asia are difficult to access given their landlocked nature, the tightness of global oil markets has nevertheless boosted their value. Kazakhstan's proven oil reserves are the 9<sup>th</sup> largest in the world, totaling an estimated 40 billion barrels at the end of 2008. In terms of gas reserves, Turkmenistan leads the region with nearly 8 trillion cubic meters (tcm), or over 4% of the world's proven reserves. It also produced an estimated 66 bcm in 2008. While Kazakhstan and Uzbekistan's reserves are considerably smaller, they nevertheless produced an estimated 30 bcm and 62 bcm of gas in 2008 respectively.<sup>54</sup>

One particularity of the region since the fall of the Soviet Union has been its openness to foreign investment, relative to Russia. Whereas Russia has preferred to maintain strong state control over its strategic oil and gas deposits and distribution networks, Central Asian states, in particular Kazakhstan, have been receptive to foreign money and technology to explore and extract their natural resources. For decades these activities depended on Russian expertise and technology. But in an effort to facilitate a greater independence from Russia and promote their own economic development, they have allowed foreign companies to invest in various upstream activities.

While western, international oil companies (IOCs) have led the way in exploring and exploiting the region's oil and gas,<sup>55</sup> China's NOCs have been quite active as well, particularly as of late.

In Kazakhstan starting in 1997, CNPC agreed to invest \$4.3 billion over 20 years for development rights of oil fields in Akhtubinsk and Uzen. Since then China has invested tens of billions of US Dollars in upstream Kazakh oil projects, often gaining equity production rights.<sup>56</sup> One of the most notable acquisitions was CNPC's 2005 purchase of PetroKazakhstan, a Canadian firm, for nearly \$4 billion. This gave CNPC rights to additional oilfields in the Turgai basin and Kezermunai. In 2006, China's NOCs produced an

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<sup>54</sup> China, by comparison produced 76 bcm in 2008, while Russia produced an estimated 602 bcm; *BP Statistical Review of World Energy 2009, op.cit. p.24.*

<sup>55</sup> Chevron, for example, invested \$20 billion to develop Kazakhstan's Tengiz oil fields. Other IOCs active in the region include BP, Mobil, Total, Agip and British Gas.

<sup>56</sup> This essentially means Chinese NOCs have a legal and contractual right to retain a certain percentage of oil produced from fields in which they are full or partial concessional owners. This practice is certainly not specific to Chinese companies, and some estimates suggest that the ratio of China's global equity oil is comparable to that of Korea or Japan. *APERC 2008 op.cit. p. 75.*

estimated 222,000 b/d of equity oil in Kazakhstan, though at the time only 54,000 b/d of this was shipped back to China.<sup>57</sup> More recent acquisitions have no doubt raised China's equity oil holdings. In April 2009, CNPC teamed with Kazakhstan's state-owned KazMunaiGaz (KMG) to purchase Mangistau-MunaiGaz (MMG) for \$3.3 billion, which also included CNPC extending a \$5 billion line of credit to KMG. MMG was the largest independent producer in Kazakhstan with rights to develop 15 of the country's oil and gas fields.<sup>58</sup> Later, China's sovereign wealth fund, the China Investment Corporation (CIC), spent roughly \$1 billion to purchase an 11% stake in KazMunaiGas Exploration and Production, Kazakhstan's second largest oil producer.<sup>59</sup> Kazakh news sources suggest that China now controls up to 40% of the country's oil production.<sup>60</sup>

China's upstream investments in Turkmenistan, focusing entirely on gas, are on a smaller scale than its oil assets in Kazakhstan, but are nonetheless still relevant. In July 2007, CNPC signed a production sharing agreement (PSA) to develop and extract gas from the Bagtiyarlik field in eastern Turkmenistan. China is the first country to have obtained a PSA for Turkmen gas located onshore.<sup>61</sup> The Turkmen government prefers to control the onshore production rights while hiring foreign companies for servicing contracts. Viewed in this light, CNPC's contract is all the more notable.<sup>62</sup> CNPC has since won development contracts in Turkmenistan's South Yolotan onshore gas field, estimated to have anywhere from 4 to 14 tcm of gas reserves. The deal was announced in June 2009 following a \$4 billion loan from the China Development Bank to state-owned Turkmengaz. Later in the year China became part of an international consortium with companies from the UAE and South Korea that would win a bid to invest nearly \$10 billion into developing the South Yolotan fields, edging out bids by international majors Chevron, Royal Dutch Shell and Total.<sup>63</sup>

### Pipeline projects proving successful

A central element in these upstream investments has been the development of pipeline projects to facilitate long-term supply links to China. Alongside CNPC's 1997 development deal were plans to build a 2,800 km pipeline to connect oil fields in Kazakhstan to China's

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<sup>57</sup> APERC 2008 op.cit. p. 75.

<sup>58</sup> "China Spends Big on Foreign Oil Assets", *Energy Economist*, 1 August 2009.

<sup>59</sup> Pagnamenta, Robin, "China keeps the oil deals flowing with \$1bn Kazakh acquisition", *The Times*, 1 October 2009.

<sup>60</sup> "Russia: Losing Central Asia to China?", *Economist Intelligence Unit - Executive Briefing*, 5 January 2010.

<sup>61</sup> Given the technological difficulties of producing offshore, Turkmenistan has been happy to oblige foreign companies with PSAs for fields located in the Caspian Sea. Garrison, J., 2009, op.cit. p.49-50.

<sup>62</sup> "China Launches Turkmen Line", *International Gas Report*, 18 January 2010.

<sup>63</sup> Sampson, Paul, "Turkmenistan Awards Contracts Worth \$10B to Develop Gas Field", *The Oil Daily*, 31 December 2009.

western Xinjiang Province. The pipeline has been built in multiple stages and is a 50/50 joint venture between CNPC and KMG, although CNPC has paid 85% of the construction cost.<sup>64</sup> It would take time before each party would settle into working together, however. Initial hesitations were linked to the long term implications of the project and the belief that there may simply not be enough oil to fill it.

By 2003 the plan was formally reintroduced thanks to a number of factors. The first was the discovery of substantial new reserves in Kazakhstan, notably in the offshore Kashagan field, and a boost in overall Kazakh oil production (from 536,000 b/d in 1997 to 1.3 million b/d in 2004).<sup>65</sup> China's added incentive to push for completion came from a rise in the price of oil on the international market, growing domestic supply shortages, and concerns for the viability of the East Siberian pipeline in Russia. By 2006 the first two stages had been completed and began pumping over 40,000 b/d. The pipeline is now pumping an estimated 145,000 b/d. By 2011 it is expected to have a capacity of over 400,000 b/d, or roughly 10% of China's total 2009 oil imports.<sup>66</sup>

**Map 3. China-Kazakhstan Oil Pipeline**



Source: US Energy Information Administration, 2009.

<http://www.eia.doe.gov/emeu/cabs/China/Full.html>

Note: Information on the map does not necessarily correspond to the pipeline's evolution at the time of this article's publishing

To facilitate the delivery of gas, particularly from China's upstream investments in Turkmenistan, China has negotiated and built the longest gas pipeline in the world, travelling from the Bagtیارlik gas fields in eastern Turkmenistan through Uzbekistan

<sup>64</sup> Garrison, J., 2009, op.cit. p.47.

<sup>65</sup> Downs, E. 2006, op.cit. p.33.

<sup>66</sup> "China Oil Imports via Sino-Kazakh pipe up 20 percent yr/yr", *Reuters News*, 5 November 2009.

and Kazakhstan and across China to markets in China's east and southeast. The original framework agreement to deliver Turkmen gas via pipeline was drawn up in 2006, and contracts were signed to supply up to 30 bcm of gas per year from Turkmenistan within a 30 year period. In June 2009 an additional contract was signed to add 10 bcm more of Turkmen gas per year as part of China's involvement in the South Yolotan development project.

In December 2009 Chinese President Hu Jintao travelled to Turkmenistan to inaugurate the opening of the new pipeline, which currently carries an average 5 bcm per year. An additional branch of the pipeline in Uzbekistan is currently under construction and is slated to be completed by August 2010, bringing online an additional capacity of 10 bcm per year from the Gazli underground reservoir in central Uzbekistan.<sup>67</sup> The final capacity of the Central Asia-China pipeline is 40 bcm per year and will be able to draw from additional sources in Kazakhstan. When operating at full capacity, this amounts to one third of China's projected imports for 2030. Some analysts suggest that China's longer-term goals include extending the gas pipeline beyond Central Asia to tap into Iranian reserves as well.<sup>68</sup>

### **Converging interests and common agendas**

When compared with the geopolitical tug-of-war for pipelines in Eastern Siberia, obtaining energy contracts and building pipelines in Central Asia seems to have gone much more smoothly for China. This is due in large part to the depth of mutual interests that have facilitated cooperation within and without the energy sector.

In one respect, broader cooperation on issues pertaining to regional stability and cross-border security have built a relative environment of mutual trust. Indeed, one of China's primary goals in approaching Central Asia is facilitating security and state control in its restive, western Uyghur Autonomous Region of Xinjiang. Xinjiang is but one of a host of territorial issues that China is faced with, including Tibet and Taiwan. For decades, and still today the CCP has hung its mandate on the territorial integrity of a greater China.

Within this context the rapprochement following the fall of the Soviet Union was built first and foremost upon reinforcing territorial sovereignty and combating the "three evils of separatism, extremism and terrorism" that were seen as threatening regional stability starting in the 1990s. This was the stated basis for founding the Shanghai Cooperation Organization (SCO), largely driven by China's initiative and including Russia, Kazakhstan, Kyrgyzstan, Tajikistan and later Uzbekistan as core members. Indeed, this forum for cooperation and

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<sup>67</sup> "Uzbekistan to sell 10 bn. cu. m. of gas to China annually", *BBC Monitoring Central Asia*, 8 March 2010.

<sup>68</sup> Blank, Stephen, "Panel discussion on continental Asia in China's global energy strategy", testimony before the U.S.-China Economic and Security Review Commission, via *Financial Market Regulatory Wire*, 20 May 2009.

China's support for the political establishment in the face of the "three evils" was reassuring to local governments and helped facilitate broader cooperation. In this respect, both China and Russia seem to agree that developing the region economically and creating a zone of stability is in both of their best interests.

In addition to the strategic benefits of diversifying suppliers and avoiding sea lanes, these pipeline projects will also bring a form of economic development to the Xinjiang region. Indeed, linking China's top-down approach to security and the influx of ethnic Han Chinese to the region with opportunities for regional economic growth and development is part and parcel of China's strategy to pacify Xinjiang.<sup>69</sup>

Another crucial enabling factor that has aided China in gaining an energy foothold and building pipelines in Central Asia is the need of many states in the region to reduce their outright dependence on Russia. It is a notable coincidence that the fall of the Soviet Union has coincided with the rise of China and Beijing's subsequent need to engage its neighbors on the western frontier. Pipelines and infrastructure built during the Soviet era essentially tied energy producing states in Central Asia to Russia. For example, in early 2009, over 90% of the gas exported from Central Asia passed through Russia using the Central Asia-Center pipeline system, which feeds into the Gazprom network<sup>70</sup> (see Map 2 on page 21). China's rising demand therefore represents a win-win opportunity. States in the region can diversify export routes, explore and develop new oil and gas fields using China's financial wealth, and gain a form of market power in dealing with Russia, the West, and various Asian consumers. China, in turn, is able to diversify its suppliers, reduce its reliance on sea lanes and increase opportunities for economic development in Xinjiang.

### **A wariness nonetheless present**

But despite the seemingly smooth sailing, more complicated issues do lie beneath the surface and could impact China's growing influence in the region's energy sector and the operation of its new pipelines.

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<sup>69</sup> Some suggest that energy cooperation with Central Asian states is a vector of, or "surrogate" for broader policy objectives in the region, namely "preventing Muslim radicals from spreading to the western part of China, and maintaining stability in the region" (Xu, *op.cit.*). While energy cooperation for security and development in Xinjiang is significant, China's pressing need to improve energy security for the economy as a whole elevates the value of these pipeline projects beyond the status of a mere vector of regional policy. Indeed, the question of security in Xinjiang becomes all the more pertinent because of these pipelines, as maintaining security along energy transport routes has broader implications for the whole of China's economy. Xu, Yi-Chong, "China's Energy Security", in Welsley, Michael (ed.), *Energy Security in Asia*, Routledge: NY, p.66.

<sup>70</sup> Garrison, J., 2009, *op.cit.* p.49.

In one respect, there is a looming potential for Russian interference. While Sino-Russian relations are fruitful on the whole, and their joint commitment to the development of the region, notably via the SCO, shows they both have a stake in the region's future, Russia does not want to lose its foothold. This could pose problems for China's plans if Russia feels its interests are no longer being met.

In Turkmenistan, for instance, Russia is heavily invested in the country's energy infrastructure and still has the capacity to make its presence known. In April 2009, with a recession-hit Europe calling for reduced gas imports, Russia decided Turkmenistan would pay the price. Gazpromexport, Russia's gas recipient, gave the Turkmen a 24-hour ultimatum to reduce their gas flows through the Central Asia-Center pipeline, which passes through Russia. Unable to oblige, Turkmenengaz, Turkmenistan's exporter, pleaded for more time. But the Russians wouldn't budge. Gazpromexport reduced the flow volume in the line and the pressure built up on the Turkmen side. On April 9, three hours after the ultimatum expired, the pipe burst. Turkmenistan's exports suffered dearly. Although technicians repaired the line, Russia effectively closed Turkmenistan's access. Turkmen gas exports for 2009 totaled 25 bcm, a 50% decrease from the 50 bcm exported in 2008.<sup>71</sup> While the Central Asia-China gas pipeline purposefully avoids Russian territory, Russia still has leverage over the pipeline's suppliers and does not appear reluctant to use it.

Oil from Kazakhstan runs an added risk of Russian interference. In order to maintain sufficient quantities and a proper viscosity, the Kazakhstan-China oil pipeline in fact depends on Russian oil to operate effectively.<sup>72</sup> While this means added opportunities to sell Russian oil to China, it also means Russia maintains an amount of technical leverage over the pipeline, in addition to the influence it maintains on the larger political, economic and strategic levels.

Additional cautionary notes come from the side of Central Asian states themselves. For them, trading dependence on Russia for dependence on China is not an ideal endgame. In the case of Kazakhstan in particular, while it is perfectly content to play China and Russia off against one another, it is becoming increasingly guarded of its own resources. The government has been willing to draw lines on the extent of China's influence in the past. For example, in CNPC's 2005 buyout of PetroKazakhstan, the government forced CNPC to overpay the company's value by 20% and subsequently undersell 33% of the shares to the Kazakh government. In October 2007, Kazakhstan subsequently took a step in the direction of the Russian, state-control model when it passed a law that would allow the government to nullify contracts involving natural resources and

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<sup>71</sup> "Defining Year for Caspian Gas", *Energy Economist*, 1 January 2010.

<sup>72</sup> Garrison, J., 2009, *op.cit.* p.47



force a subsequent negotiation. For some, this is a sign that Kazakhstan is arming itself with the tools necessary to prevent losing control of vital energy resources to Chinese companies.<sup>73</sup>

China's success in gaining access to energy resources and building pipelines from Central Asia, while notable, does not mean it has free rein over outcomes in the region.

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<sup>73</sup> Garrison, J., 2009, *op.cit.* p.48-49; and Brower, D. "New Kid on the Block", *Petroleum Economist*, 2007, Vol. 74, No.7, p.5-8.

## **South and Southeast Asia: The Geopolitics of Myanmar Pipelines**

### **The value of southern pipelines**

Beyond Russia and Central Asia, China has also been looking south for answers to its energy security problems. Given China's geography and the landlocked nature of its western and southwestern provinces, a logical solution to confronting the problem posed by oil transit through the Strait of Malacca would be to build transit pipelines across the coastal nations on its southern and southwestern borders. Many projects along these lines have indeed been proposed. One idea would turn Pakistan into an "energy corridor" for Middle Eastern oil and Iranian gas. Others that would either cut across the Kra Isthmus in Thailand, effectively creating an "energy bridge" to compete with the Strait of Malacca, or run from Thailand up through the larger part of Southeast Asia.

Beyond these options, one proposal that has gained particular momentum in recent years is the construction of parallel oil and gas pipelines from the Bay of Bengal through Myanmar to China's Yunnan Province. In late 2003, South Korea's Daewoo International made a substantial gas discovery while exploring the Shwe gas fields in the Bay of Bengal, though estimates vary widely on the actual volume of recoverable reserves.<sup>74</sup> This discovery touched off a series of competing proposals for purchasing and distribution rights on the gas from a number of regional actors, with China being chief among them.

### **Opportunity and risk for a Myanmar-China route**

Beyond its clear strategic value, this project is particularly attractive to China because it will bring energy resources and development opportunities to its economically underdeveloped southwestern provinces. China's booming economic growth in recent decades has created lopsided economic development on the national level. As the eastern, coastal provinces have experienced dramatic increases in wealth, much of the interior has been left far behind. Southwestern China is vastly underserved by internal gas and oil distribution networks in particular, but the Myanmar pipeline project could help remedy the situation. Indeed, gaining access to the Indian Ocean and increasing trade with its southern neighbors has been a key element of China's rapprochement with Myanmar since the late 1980's.<sup>75</sup>

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<sup>74</sup> Estimates for the largest A1 block alone could contain anywhere between 100 and 170 bcm of gas.

<sup>75</sup> See: Pan Qi, "Opening the Southwest: An expert opinion", *Beijing Review*, Vol. 28, No. 35, 2 September 1985, pp.22-23; and Tournier, Abel, and Le Bail, Helene, "From Kunming to Mandalay: The New "Burma Road" – Developments along the



The Myanmar regime also stands to gain from the project not only in pure financial terms, but also in a reduced dependence on energy exports to Thailand. According to Myanmar government figures, Thailand accounted for roughly 40% of Myanmar's 2008-2009 exports.<sup>76</sup> Since the construction of the Yadana gas pipeline to Thailand in the mid-1990's, all of the Myanmar's gas exports have gone to Thailand. Beijing's proposal thus provides the Myanmar regime with an alternative export market for gas and an opportunity to reduce its dependence on Thai consumers. Indeed, China has proven to be a rather reliable partner for the regime, providing trade opportunities, investment and a high level of shielding from international pressure, notably through its permanent seat on the UN Security Council.

Nevertheless, the Myanmar-China pipeline project still comes with risks. The Myanmar regime is wary of becoming overdependent on China and for decades has tried to multiply its trade partnerships with other countries, including Singapore, Thailand, South Korea, India, Russia and now North Korea.<sup>77</sup> China's construction of a deep-water port to receive oil shipments and the oil and gas lines themselves will deepen its strategic interest in Myanmar and could increase the probability of intervention should China feel these interests are being threatened. In this sense Myanmar's generals have been keen to investigate other options for gas investment and export.

Meanwhile, China plans to stake a long-term, strategic energy investment in a country where the ruling regime has proven at times unpredictable and uncontrollable. While it is true that sanctions imposed by the West have given China an advantage in courting Myanmar's military government, it does not mean that China has free rein over outcomes. It has likewise been argued that Myanmar lacks a strong, central government capable of controlling the whole of its territory, thus limiting the overall effects of would-be Chinese influence on the Myanmar regime.<sup>78</sup>

### **Stirring a hornet's nest: The Sino-Indian rivalry**

The Myanmar pipeline project has spawned its own particular set of regional competition. As alluded to above, China is only one external player among many in Myanmar's economic and political scene. Among the notable countries interested in Myanmar's Shwe gas fields are South Korea, and, certainly, India.

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Sino-Myanmar border since 1988", *Asie.Visions*, No. 25, March 2009, pp.5-8, [www.ifri.org](http://www.ifri.org).

<sup>76</sup> See Myanmar's Ministry of National Planning and Economic Development, Central Statistical Organization: <http://www.csostat.gov.mm/S07MA0202.asp>

<sup>77</sup> Tournier, A. and Le Bail, H., 2009, *op.cit.* p.9-11.

<sup>78</sup> Li, Hak Yin, and Zheng, Yongnian, "Re-interpreting China's Non-intervention Policy towards Myanmar: leverage, interest and intervention", *Journal of Contemporary China*, Vol. 18, No. 61, September 2009, pp.617-637.

Indeed, India has its own strategic reasons for courting Myanmar. On the broader, regional level India views China's rise within the context of its own growth. In addition to a number of yet-unresolved border disputes, India is concerned about potential encirclement from a bloc of unfriendly neighbors to include China, Pakistan, Bangladesh, and Myanmar. China's aforementioned "string of pearls" strategy to construct deep water ports along India's periphery only bolster China's presence and feed India's suspicions. Moreover, talks of turning Pakistan into an "energy corridor" for China run counter to India's own hopes of building gas and oil pipelines from Iran and Turkmenistan. In hopes of heading off a relative containment scenario, India began adopting an unofficial strategy of engagement with Myanmar in the mid-1990s, essentially seeking to turn Myanmar into a "pivot" between South and Southeast Asia.<sup>79</sup>

Myanmar's gas resources are of particular interest to India, given the latter's potential for economic growth and the subsequent energy demand that will come with it. The IEA projects that India's gas demand could grow at an average rate of over 4% per year for the next 20 years. As domestic supply peaks, India is expected to depend on imports for more than 60 bcm per year, or up to 55% of its gas supply by 2030.<sup>80</sup> This reality has repercussions for the development of China's pipeline plans in Myanmar. While China's planned oil pipeline certainly carries strategic consequences of its own, it is in fact gas deals that have stirred the regional hornet's nest.

India has worked hard to gain inroads into Myanmar's gas sector, particularly following Daewoo's 2003 gas discovery in the Shwe fields. India's state-owned oil and gas firms Oil & Natural Gas Corporation (ONGC) and GAIL India now operate in consortium with South Korean firms to explore and develop these fields. India has even drawn up plans of its own to construct a gas pipeline from the Myanmar port of Sittwe to supply its domestic markets.

### **A flurry of competing pipeline proposals**

In January 2005 India and Myanmar signed a memorandum of understanding (MOU) to build a gas pipeline that would draw from the offshore Shwe fields, particularly blocks A1 and A3, and run through Bangladesh to feed India's West Bengal.<sup>81</sup> For the Myanmar regime, India's proposal was not only thought to be cost effective, as the majority of the pipeline would be built on foreign soil, but it also presented an opportunity to diversify economic relations, notably reducing dependence on Thailand and China. But Bangladesh,

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<sup>79</sup> Kerouac, Camille, "La Chine en Birmanie: Course aux hydrocarbures", *Outre Terre* 2009, Vol.1, No.21, p.267-272 ; and Amelot, Laurent, "La compétition énergétique sino-indienne en Birmanie", *Géostratégique*, April 2008, No.19, [http://www.strategicsinternational.com/19\\_11.pdf](http://www.strategicsinternational.com/19_11.pdf)

<sup>80</sup> IEA 2007, *op .cit.*, p.497-503.

<sup>81</sup> The pipeline was first proposed in 1997.

having a history of contentious relations with India and confronting energy shortages of its own, threw a wrench in these plans by posing a number of conditions that India viewed as unrealistic.<sup>82</sup>

Following India's failure to come through with commitments and deadlines, Myanmar turned to an eager China. China's plan would construct parallel oil and gas pipelines that would cross a large swath of Myanmar territory, presumably bringing economic development opportunities. The oil pipeline would begin at a deep water port being constructed on Maday Island, near the city of Kyaukphy, in Rakhine State. Here it would receive shipments of oil from overseas and travel northeast over land to Kunming, in China's Yunnan Province. The gas pipeline would draw from offshore gas deposits in the Shwe gas fields and run parallel to the oil pipeline once on land.

In late 2005, much to the dismay of India, CNPC's subsidiary PetroChina signed an MOU with the Myanmar Oil and Gas Enterprise (MOGE) to accord 30 years worth of purchasing rights to 6.5 trillion cubic feet (184 bcm) of gas from the Shwe fields, most of which would be provided from the largest, A1 block.<sup>83</sup>

In early 2006, India countered with a series of alternative delivery proposals for Myanmar gas, including the construction of compressed natural gas (CNG) ports<sup>84</sup> and a longer, alternative pipeline that would run northeast through a number of Indian states, meticulously avoiding Bangladesh altogether. Choosing to keep its options open, Myanmar signed an MOU in May 2006, agreeing to study the options with India.<sup>85</sup> But this alternative route would raise construction costs by 50% and even Indian officials admitted at the time that it was not a very realistic option.<sup>86</sup>

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<sup>82</sup> Three conditions in particular proved too much for India: Bangladesh wanted India to eliminate tariffs on Bangladeshi goods entering its markets, create a free trade corridor to include Nepal and Bhutan, and allow Bangladesh to import hydroelectric power from Nepal and Bhutan so as to conserve its own gas reserves.

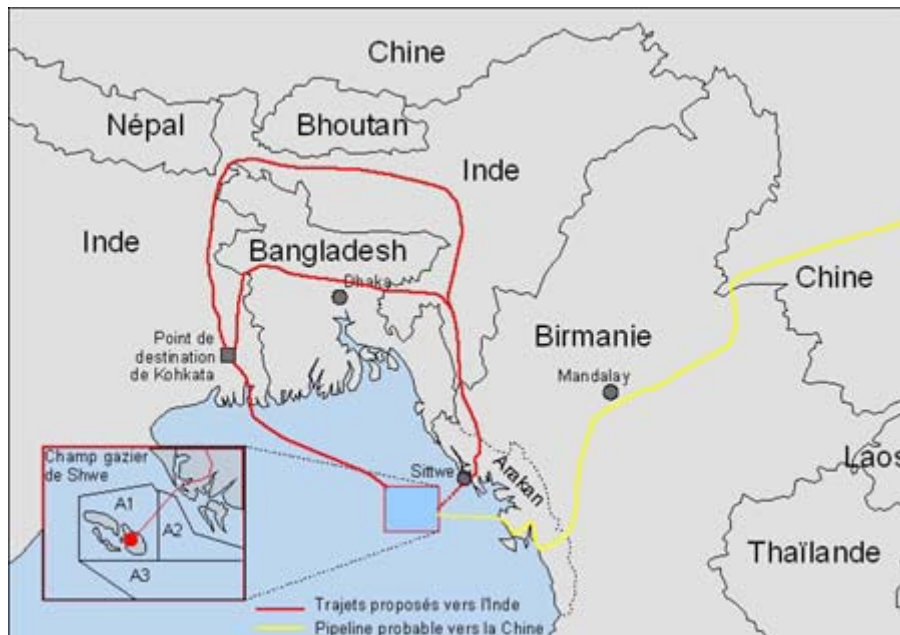
<sup>83</sup> "China and India battle for Myanmar's gas", *Petroleum Economist*, 1 May 2006.

<sup>84</sup> CNG is a fuel commonly used in India's public transport system, not to be confused with liquefied natural gas (LNG).

<sup>85</sup> The gas proposal was a central element of Indian President Abdul Kalam's trip to Myanmar, the first visit by an Indian head of state to military-ruled Myanmar. "Myanmar and India sign natural gas deal", *Agence France Presse*, 9 March 2006; and Mishra, Richa, "Myanmar gas: India works out route bypassing Bangladesh", *The Hindu*, 8 May 2006.

<sup>86</sup> Nagao, Hisatsugu, "Natural gas fueling three-party race", *Nikkei Weekly*, 16 October 2006.

Map 4. Gas Pipeline Proposals from Myanmar's Shwe Fields



Source: Map taken from the website of RITMO: [www.ritimo.org](http://www.ritimo.org)

Note: Map details are listed in French, with India's proposed pipelines in red and China's in yellow. Myanmar is listed as "Birmanie".

Further complicating the mix, South Korea and Thailand weighed in with their own proposals. The South Korean proposal would have built LNG conversion plants to ship the gas via boat to markets in East Asia. Originally downplaying the proposal, the MOGE changed its strategy and called for LNG bids in December 2006.<sup>87</sup> Thailand as well sought to buy gas from the much sought-after Shwe fields, proposing a pipeline that would link with the Yadana line built in the 1990s to supply gas from the Andaman Sea field further south.

### China to get its pipelines, but India not done yet

In the face of competition, China's proposal would eventually win the day. In January 2007, just as the Myanmar regime was coming under pressure from the West for human rights violations and its suppression of democratic movements within the country, CNPC signed an agreement with the MOGE, reinforcing the previous MOU from 2005 and agreeing to undertake the Chinese dual-pipeline project. Some have gone so far as to suggest that the CNPC gas deal was Myanmar's reward to China for using its veto power in the UN Security Council to block a US-proposed resolution that would have applied broader economic sanctions on the country.<sup>88</sup>

<sup>87</sup> Nagao, op.cit.; and "Myanmar Eyes LNG to Japan, Korea", *World Gas Intelligence*, 3 January 2007.

<sup>88</sup> Storey, Ian, "China a major player in S-E Asia pipeline politics", *The Straits Times*, 23 September 2009.

In the end, while larger political factors such as China's clout in the UN Security Council cannot be discounted, it is assumed that China's pipeline bid succeeded in large part because its proposal was more viable, given the degree of backing accorded by the Chinese state through the CNPC.<sup>89</sup>

It would take nearly two years, but in December 2008 CNPC would finally conclude a gas purchasing agreement with the consortium that controls the A1 and A3 blocks, led by Daweoo International.<sup>90</sup> For the Myanmar regime, the economic incentive for completing the deal became clearer as the global economic crisis took shape. Indeed, even Myanmar's relatively sheltered economy was hit hard, with the reported value of its exports falling nearly 9% in the first ten months of 2008. Revenue generated from gas exports over the same period reportedly fell by 29% relative to the first ten months of 2007, a significant hit given that an estimated 40% of the government's revenues come from gas exports.<sup>91</sup>

One interesting aspect of the project is indeed its multinational character. For the gas pipeline itself, CNPC controls a majority, 51% stake, but Korea's Daewoo and India's ONGC and GAIL are also significant shareholders.<sup>92</sup> This is particularly interesting, given India's own ambitions. It shows that the need of these companies to make a return on investment outweighs their respective geopolitical concerns. For the oil pipeline, however, CNPC subsidiary Southeast Crude Oil Pipeline Company will have exclusive building and operating rights, with CNPC owning a 51% stake and the MOGE owning the rest.<sup>93</sup>

The gas pipeline is expected to have an initial capacity of 5 bcm, to be slowly increased to a final transport capacity of 12 bcm. The estimated cost of building the pipeline is anywhere between \$1 and \$2 billion. Plans on the Chinese side of the border have evolved and now include links to supply gas to Yunnan's neighboring provinces of Sichuan, Chongqing, and Guizhou. The oil pipeline will have a final carrying capacity of over 400,000 b/d and is expected to

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<sup>89</sup> "Myanmar Gas: Energy Investments underpin the state", *Energy Economist*, 1 November 2007.

<sup>90</sup> South Korea's Daewoo International holds a majority, 51% share while others include India's ONGC (17%), GAIL India (8.5%), Korea Gas Corp. (8.5%) and MOGE (15%) ; Ford, Neil, "China beats India in battle for Myanmar", *International Gas Report*, 2 February 2009.

<sup>91</sup> Myanmar's gas exports for the first 10 months of 2008 generated \$1.69 billion. See: Ford, N. 2009, *op.cit.*; and "China beats India in battle for Myanmar", *International Gas Report*, 2 February 2009.

<sup>92</sup> India's parliament recently approved the \$250 million investment ONGC and GAIL to purchase 8.35% and 4.17% stock in the pipeline respectively. South Korea's Daewoo International and Korea Gas Corporation have also has invested in 25% and 4% stakes respectively. Myanmar's MOGE only owns a 7% stake in the pipeline; See "India approves ONGC, GAIL to tap China-Myanmar pipeline", *Xinhua's China Economic Information Service*, 19 February 2010.

<sup>93</sup> Ling, Son Yen, "China Deepens Myanmar Interests as Oil Pipeline Moves Ahead", *International Oil Daily*, 22 December 2009; and "CNPC gets Myanmar backing on China-Myanmar oil pipeline", *Reuters*, 21 December 2009.

cost \$1.5 billion.<sup>94</sup> Rights advocacy groups have estimated that the whole project could generate revenues of over \$1 billion per year in revenues for the Myanmar regime.<sup>95</sup> Both pipelines are expected to be operational by 2013. Given IEA demand projections, these pipelines could be able to deliver 3% of China's oil imports and 9% of gas imports in 2030.

Despite apparent defeat in the struggle for Myanmar gas, India continues to pursue its own ambitions to build a pipeline. In late 2009, Bangladesh announced that it was willing to reopen negotiations on the tri-nation pipeline proposal and in December 2009 Myanmar's Ambassador to India told reporters that a Myanmar-Bangladesh-India pipeline could materialize "in two to three years".<sup>96</sup> Bangladesh's sea change is due to the victory of a more India-friendly government in January 2009 and a reassessment of the financial benefits Bangladesh could receive from such a project. Given China's rights to gas produced from the A1 and A3 blocks, however, it is assumed that new reserves will have to be discovered in other blocks of the Shwe fields to make this project viable.<sup>97</sup> Still, many in India explain that Myanmar has expressed a preference for the Indian pipeline. Seeing an opportunity to further diversify its gas exports and avoid becoming more deeply dependent on China, the Myanmar regime could very well look for ways to oblige.

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<sup>94</sup> Ling, S.Y., 2009, *op.cit.*

<sup>95</sup> See: Earth Rights International: <http://www.earthrights.org/campaigns/shwe-gas-campaign>

<sup>96</sup> "Bangladesh to revive debate over Myanmar-India gas link", *Pipelines International*, 13 November 2009; and "India-Myanmar gas pipeline may materialize in 2-3 years", *Domain-b*, 2 December 2009.

<sup>97</sup> Grieder, Tom, "Bangladesh Lifts Opposition to Stalled Tri-Nation Pipeline from Myanmar", *IHS Global Insight Daily Analysis*, 3 March 2010.



## Conclusion

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China's transition from net energy supplier to net consumer, its growing perception of energy insecurity, and the initiatives taken to respond to this insecurity have had a profound impact on regional dynamics in Asia. Although only one response to energy security among many, the transnational pipeline projects discussed above are illustrative of this impact.

China's successes in winning pipeline contracts in Central Asia and Myanmar steal a march on other regional heavyweights, notably Russia and India. One critical factor has been the degree of China's state backing for these deals. The country's financial standing in the wake of the global economic crisis has only bolstered its position. Not only does China's continued economic growth provide seemingly stable markets to sell oil and gas, but the reinforced financial backing of its national oil companies and a host of other bilateral trade and assistance deals make China an attractive partner.

This does not mean, however, that China's partners are keen on trading one dependency for another. Nor are other major actors in the region, Russia, India, Japan, or even Europe and the US, willing to leave China uncontested access to energy resources.

In fact, one significant effect of China's rising oil and gas demand has been the ability of many producers to diversify their export options and improve the capacity for self determination by breaking traditional dependencies. The example of Central Asia is perhaps the most illustrative. As Jean Garrison argues, the "great game" in a strategic sense is perhaps a false image. "Neither Russia, China, nor the United States is able to dictate outcomes in this region. Instead, the developing neoliberal complex interdependent relationships create new opportunities to reframe traditional relationships".<sup>98</sup> In this sense, China's rise has put Central Asian states in a better position to define their own political and economic futures.

A similar phenomenon can be witnessed in other cases as well. Competition over resources in Eastern Siberia, although at times fierce and antagonistic, has opened up new markets for Russia. Meanwhile, greater East Asia has found new resources to help curb its dependence on Middle Eastern crude. This could even be the case

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<sup>98</sup> Garrison, J., *China and the Energy Equation in Asia: Determinants of Policy Choice*, First Forum Press: London, 2009, p. 59.



to some extent in Myanmar. The country's energy export dependence on Thailand will now be shared with China, and India may be emboldened to press ahead with projects of its own in the face of China's growing foothold.

Still, the complete history of pipelines and energy politics in continental Asia has yet to be completed and while the possibilities for greater cooperation exist, there is still great room for error.

Ultimately, the impact of these pipeline projects on China's overall energy picture is still small, particularly given China's projected oil import demand. The Central Asia-China and Myanmar gas pipelines together will have a final transport capacity of 52 bcm, or roughly 40% of China's projected import demand in 2030. But the ESPO and the Kazakhstan-China lines can only deliver just over 700,000 b/d of oil, which is 17% of China's 2009 oil imports, but only 5% of estimated import demand in 2030. The Myanmar line will be able to transport 10% of China's 2009 volume of imports, but only 3% of projected demand in 2030, and this oil will still have to come from overseas.

Thus, despite efforts to diversify its suppliers, China will remain dependent on oil imports from the Middle East for the most part and will continue to depend to a large extent on international markets and maritime transit for its oil. While these transnational pipeline projects have given China a degree of flexibility, multilateral cooperation on strengthening global energy markets and maritime security will remain in its best interest.