

Growing links in energy and geopolitics

China, Russia, and Central Asia

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Overview

A significant change in the world energy order is in the making. In this process, China is rapidly emerging as a major force in both world energy markets and global energy geopolitics. Key aspects of China's expanding regional and global energy linkages in search of energy supply security are creating new challenges and opportunities.

China's dependency on imported energy has surged in recent years and is expected to grow at a similar or increasing rate in the coming decades, driven by an unprecedented industrialization mobilization and urbanization process. As a result, the Chinese leadership feels increasingly insecure and vulnerable as greater dependency has exposed the country to the risks of global supply disruptions, chronic instability in energy exporting regions, and the vagaries of global energy geopolitics. Securing energy resources is no doubt a highly political matter. This was the case for Japan before the Second World War. It is also the case for China today with its growing energy demand.

¹ This paper represents the authors' personal views and not those of any organisation they are associated with.

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This paper proposes to examine China's energy dynamics and growing linkages with Russia and Central Asia, and concludes that the economics and geopolitics of energy supply for China will continue to dictate different approaches to its CIS neighbours and the Gulf.

Changing dynamics in international petroleum sector

"When a Brazilian brews her morning coffee today, she is likely to use electricity from a power plant in Uruguay that runs on natural gas from Argentina provided by a Chilean company. She drives to work in a Ford fuelled with Venezuelan gasoline, and her Canadian-owned factory may soon be powered by a 3,000 km natural gas pipeline from Bolivia."

It is essential to understand how international petroleum sector is going through a serious transformation due to the emergence of new powers, such as China, or old players being equipped with new powers, such as Russia, Central Asian countries and the Gulf countries, and an increasing concern of energy security from both consumer and producer perspective.

The changing nature of the international petroleum market thus requires new rebalanced mechanisms, and new forms of partnerships among players.¹ These major consumers and producers are interacting with each other, taking active measures to conduct energy diplomacy, establishing new strategic partnerships with a view to changing rules in a way that will better serve their national interests.

The profound changes in world energy, still underway, could be summed up as follows:

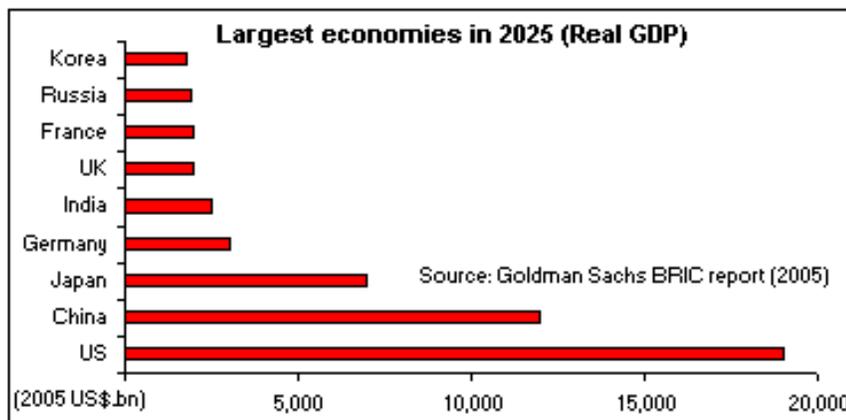
First, the increased international petroleum prices have, together with many other factors, shifted power significantly to oil producing countries, especially a few large ones, where the majority of remaining reserves are located, such as the Gulf, Russia, and Central Asia². This power, coupled with the huge financial assets accumulated by those producers in a high price environment, has fuelled the international ambitions of these countries to seek changing or reshaping the traditional rules of the game for the benefit of their national interests.³ Some of them, such as Russia, not only host large share of world petroleum reserves, but also has the political will to use energy as an instrument to advance its economic and political interests.⁴ Aware of their increasing power, many of the resource-rich countries have either re-nationalised their oil industries or established strategic control through further transfer of power into the hands of governments.⁵

Second, there is an increasing concern of security of energy supply at the consumer's side. Due to increased demand and depletion of domestic reserves, major oil consumers will have to rely more on imported oil and gas, from a few politically-instable regions such as the Middle East, Africa, Russia and Central Asia, through long-distance pipelines

and vulnerable sea routes⁶. This, combined with the fact that international oil market, is less stable and more prone to the disruption of natural disaster, terrorist attack and isolated geopolitical acts increased the vulnerability of these consumer countries.⁷

Third, although the OECD countries are still the largest oil consumers, the current increase demand for oil and gas is mainly driven by fast economic development in developing countries such as India and China, which account for one third of the world population but only consume 17 percent of world energy. Different from OECD countries, these newly emerging major oil consumers are less supportive of free market principles and are guarded by national oil companies that are controlled and supported by their governments. In order to access the new and prosperous market, government to government relationship is not only necessary but essential.

Largest economies in 2025



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Fourth, a rising security of demand concern of major oil producer countries may prevent large scale of investment from happening. To meet the rising energy demand, huge amount of investment is needed.⁸ Due to environmental pressure, consumer governments around the world are seeking to reduce consumption and reliance on traditional fossil fuels given that the energy sector is the main contributor of emissions of greenhouse gases. This rising uncertainty of future consumption level for conventional energy, increases the security-of-demand concern of major export countries, and impedes much needed investment.⁹

China's growing dependence on energy resources

The "Middle Kingdom's" current and future energy needs are enormous. Although China boasts rich energy resources, particularly in coal and hydro, its energy consumption is

growing faster and cannot keep pace with its domestic energy production -- a reality that makes self-sufficiency an illusion. China is aware of the fact that it must look outward in order to fill the widening energy gap, particularly in oil and gas. It became the net importer of crude oil in 1993 and the second-largest global importer surpassing Japan in 2004. There is no return to the good old days of self-reliance.

China consumed last year an average of 6.63 mbd of oil every day – about twice what it produces. Its oil imports doubled between 1999 and 2004. China's demand for oil is expected to continue to increase by five to seven per cent a year. If that happens, China will surpass the United States as the world's largest consumer of oil by 2025.¹⁰

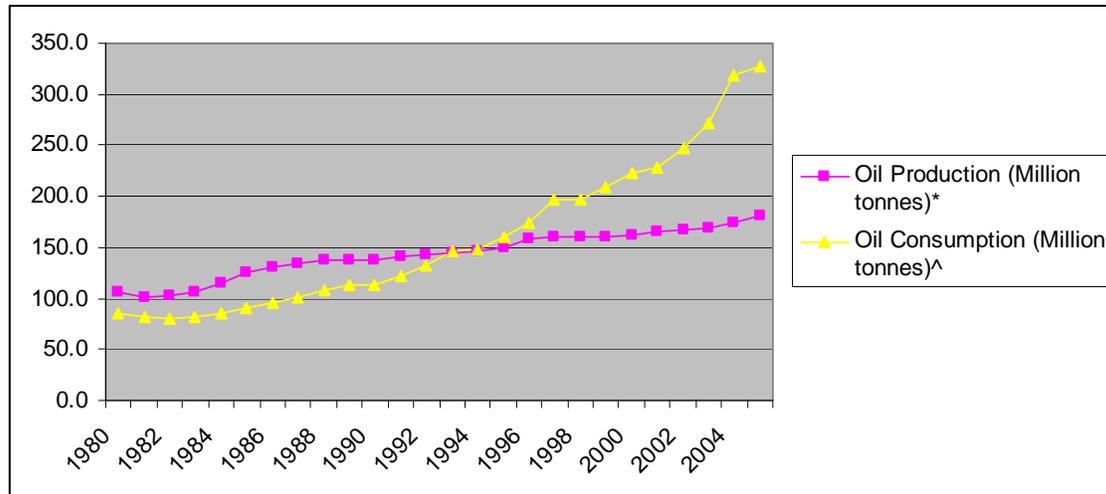
China's 2008 oil demand would likely expand by 4.5 percent, or 340,000 bpd, down from the previous forecast of 5.3 percent, or 400,000 bpd¹¹. This compares with a 6.8 percent growth in 2007 for the world's second-biggest energy consumer. For reasons of comparison, the average per capita daily oil consumption in the U.S. is 25 barrels, while in China it is only 1.3 barrels -- a figure illustrating the future growth potential in energy consumption.

Today's import volumes reflect certain disequilibrium in the country's outward-oriented development path¹². The ultimate constraint on self-sufficiency in oil, however, is the extent of China's own resources. Present prospects are not particularly encouraging. Offshore oil, the most promising source in the short term, will not satisfy more than 10 per cent of demand. The most reliable onshore fields in the northeast are aging and their output will, at best, stabilise. That leaves Xinjiang and its Tarim basin, which is believed to have very large reserves but has not yet lived up to its promise¹³.

The massive import requirement, a reality today, is likely to be even stronger in the future unless a breakthrough can be achieved to move away from oil. The International Energy Agency predicts that by 2030, Chinese imports will grow to 12 mbd by 2030, triple the existing level¹⁴ -- equal to U.S. imports and more than the Saudi production, impressing upon China the need to ensure a stable supply of oil.

Oil Production and Consumption (1980-2005)

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A similar story could be told of natural gas as an option though it remains a marginal fuel in the Chinese energy system because of its cost implication to power industry and residential electricity. China is presently largely self-sufficient in natural gas¹⁶ but this is only because it uses so little: gas represents less than 3 percent of China's total energy consumption compared with a global average of 23 percent. However, the government has embarked on an ambitious policy to increase gas use to help replace coal to diversify overall commercial and household energy use, and provide cleaner-burning fuel for environmental needs. According to the recent Eleventh Five Year Plan, the proportion of natural gas in the overall energy consumption will increase to 5.3 per cent by 2010 and 12 percent by 2030.¹⁷

Faced with mounting environmental problems and starkly rising oil imports China could well decide to accelerate building up both its domestic gas delivery system and its gas imports, in a grand national switch toward clean-burning fuels. China's gas pricing policy energy remains a major hurdle for further development of the natural gas sector.

China has become a net gas importer in June 2006¹⁸ and its dependency on imported natural gas is set to continue to increase significantly. According to the different sources of projections, the demand for import may vary from 44 to 170 bcm by 2020, 50 to 70 percent of its total natural gas consumption.¹⁹

China is also already importing LNG, but has yet to decide definitively whether to facilitate such imports by investing in a large network of LNG terminals and delivery systems in the East and South of the country. China signed its first-ever long-term LNG supply deal five years ago, also with Australia, but had balked at paying the higher

world prices which have prevailed in most markets since then. But with power production far outpacing this year's first half GDP growth of 11.5 percent and rising pressure to reduce greenhouse gas emissions, Chinese officials now see a pressing need to secure long-term gas supplies²⁰.

LNG supplies will come largely from the Gulf and Asia, including Australia, Indonesia, Malaysia, Brunei, and East Timor, but China will also likely rely on a growing volume from the Gulf, including Qatar, Iran, Oman, and probably Yemen. Gas imports via pipeline from Russia's East Siberian Irkutsk, Sakha regions, Kazakhstan, Uzbekistan and Turkmenistan are under consideration²¹. Consequently, a significant portion of China's gas needs will have to be transported largely from the same volatile regions as oil imports, the Gulf, Central Asia and Russia. This too raises a similar question of gas supply security.

Energy Security Measures: Search for Expanded Oil and Gas Links

A broad consensus exists that any national "energy security" goals must include simultaneous achievement of the three "Es": economic growth, environmental protection, and energy security. Each factor is of great importance, but it should be noted that it is necessary to balance security and environmental policies against the third goal of economic growth, particularly if that growth is to be "sustainable." This delicate balance is perhaps more difficult for some countries than for others.

For the Chinese government, uninterrupted and affordable access to stable energy is critical for the continued economic development and political survival.²² Hence, China's leadership has responded to the energy security challenge with both domestic reforms and global policies.

The Chinese government has recognized the need to address a range of energy security issues but has yet to develop a coherent policy. Its energy policy has emphasised 'strategic' means to enhance security of energy supply rather than market mechanisms²³. One of the major challenges for outside observers is to understand the decision-making processes within the Chinese ruling elite. Examination of specific policies relating to energy in Central Asia, Russia, Africa and the Gulf shows that decision-making is driven by a complex interplay of political, diplomatic and economic factors.

Domestically, efforts are underway to maintain production in the traditional north-eastern oilfields while boosting production in western China where prospects for growing production are better, the so-called "stabilize the East, develop the West" policy. Offshore oil development also has been a high priority in both the South China Sea and the East China Sea, although with relatively modest results. The domestic oil industry also has been repeatedly restructured to try to boost competition and efficiency and oil pricing has been brought more closely in line with global and regional oil markets.

Nevertheless, domestic oil production is unlikely to rise significantly in the foreseeable future and therefore imports are set to continue growing relentlessly²⁴. The leadership has realised that oil import dependence is unavoidable and will grow, thus feeling increasingly vulnerable to heavy reliance on Middle East oil and insecure transportation routes, especially after 9/11 and the US invasion of Iraq.²⁵ Not only that the US presence and actions in the region concern the Chinese government,²⁶ but also more than four-fifth of Chinese oil import is transported through the high-risk Malacca Straits.²⁷

A variety of other factors aggravate China's sense of insecurity. Beijing has a strong sense of exclusion from the global energy management institutions, such as the IEA, and also sees itself as dependent on global oil markets that are dominated by the U.S. and the major international oil companies. High oil prices and a growing fear of long-term global oil supply "scarcity" are feeding this sense of insecurity and the compulsion to try to unilaterally secure its future oil and gas needs by direct state intervention.

China is responding with a broad range of energy strategies internationally to try to guarantee greater supply security and reduce their vulnerability to potential supply and price shocks. Their basic strategies have been developing domestic resources to the maximum possible, promoting greater energy conservation and efficiency, creating strategic reserves, seeking foreign technology and investment, establishing reliable and secure oil trading channels, making strategic investments in upstream production facilities abroad, and formulating naval and maritime military strategy to protect the sea-lanes from the Gulf and through the South China Sea to China²⁸.

These are the classic moves of nations which found themselves in a position of import dependency in the past. In fact, one can argue that China already has moved farther and faster to take advantage of inward investment in its energy industries than did Japan for its energy sector at an analogous stage of development²⁹.

China's state owned oil companies recognize the benefits of equity share in overseas companies, including American ones and have thus set about an acquisition policy as part of its strategy for energy security. And under the "equity oil" arrangements whereby the Chinese oil companies split the production output with the host government, China is entitled to buy the oil at a relatively cheaper price and such a setup involves lesser risk than buying oil on the international oil market³⁰.

Equity position acquisition, above all, is an alluring option for China to secure supply without exposing itself to competition largely dominated by major international companies in order to gain exploration rights³¹. Furthermore, the equity option also reduces, if not eliminates, market price risk because it enables the investor to predict exactly how much oil it will receive and at what cost over the life of the field³².

In spite of equity ownership as a measure for energy security, the possibility of major supply disruption continues to exist in the minds of Chinese leaders. This is because of

the transport routes used for delivery of imports. The seaborne oil import, largely through the strategic chokepoints of the Straits of Malacca and the South China Sea, are beyond Chinese reach, while the land-based pipelines through Kazakhstan can potentially be held hostage to adversarial elements and antagonistic policies of other countries³³.

However, owning oil fields provides no real energy security. It does not cushion against a rising cost of energy because no one country is large enough to determine the market price. Neither does it ensure access, because getting oil where it is needed depends largely upon shipping lanes policed by the U.S. Navy. There's an illusion that ownership ensures either volume or price. Oil is an internationally traded commodity. The key is having secure lines of supply from the Middle East.

For sure, Beijing wants to avoid, to the extent possible, relying on sea-lanes controlled by the U.S. military for transport of energy to China because, if U.S.-China relations worsen, especially if the Chinese Taipei issue makes bilateral relations tense, China may have no other alternative but to increase its naval projection power in the long run to counter reliance on the U.S. domination of sea-lanes. Considering China's current financial situation and military capability, however, the likelihood that China will be able to control sea-lanes from the Gulf in the next decade or two is very dim³⁴.

If oil and gas are likely to be easily accessible³⁵, then it makes no sense for China to spend billions of dollars to increase its naval projection capability in order to secure oil and gas, especially considering that such a military expansion would cause unnecessary frictions with China's neighbors. Still, it may be difficult to tell whether China is pursuing military expansion due to concerns about energy security or because it desires to be a hegemonic power in the region.

The best mitigating options for China include land-based cross-border energy partnerships with Russia and Central Asia.

Russia – a major future supplier to China (and Northeast Asia)

New supplies of Russian oil and gas would provide an important alternative source and help consumers in China and rest of the North East Asia (namely, Japan and Korea) to achieve the policy target of energy diversification. Handled carefully, the emerging Russian option will perfectly suit their energy security objectives. In this pursuit, the reserves in the eastern region of Russia are critical as opposed to trade between West Siberia and Europe, which has dominated the trade scene.

With a few exceptions, there is however no infrastructure at present to bring eastern Russian oil and gas to the Pacific markets³⁶. It is encouraging to see some private sector proposals and business interests in this region to build oil and natural gas pipelines, electric power links, and other types of cross-border energy trade.

Russia is enormously rich in natural resources, accounting for 10 percent of the world's crude oil and 30 percent of gas production.³⁷ Russia also has a range of opportunities to import gas on commercially attractive terms from Central Asian/Caspian countries through established pipeline networks³⁸. Energy is the cornerstone of Russia's economic performance and political influence as oil and gas accounted for 63 percent of total exports in 2005 and 37 percent of state budget revenues.³⁹ Energy is also a critical leverage for Russia to re-establish political and economic influence in Europe and Eurasia, and re-establish the country's position as an energy superpower as president Putin has often put it.

The China-Russia relationship has improved significantly in many areas including energy, trade, military and transport. Russian diplomats say bilateral trade with China could surge 20 percent annually and hit \$20 bn this year and \$60 bn by 2010⁴⁰. But stalemate in many ambitious programmes and fresh problems with oil supplies cast a shadow over official optimism. In the eyes of the senior Chinese political and energy negotiators Russia has lost its credibility. They do not have confidence in Russia, particularly after how the Pacific oil pipeline deal was concluded in favour of Japan, a country actively rivalling China in every step of the way⁴¹. Although there are many energy projects discussed since early 1990s, the reality is that not much is happening.

The Asian market accounts only for a marginal share in Russia's export, and business to Asia has just been initiated -- the first gas deliveries to Japan may start in 2008 and to China in 2011.⁴² The excessive reliance on a single EU market⁴³ is not perceived to be sufficiently secure for Russia.⁴⁴ To ensure security of demand, Russia needs to establish access to the booming Asian energy markets⁴⁵, as announced by Russia's Energy and Industry Minister, who wants to increase exports to the Asian markets from the present 3 percent to one third of the country's export.⁴⁶ To do so will require large amount of investments on the poorly-developed Eastern Siberian oilfields and eastbound pipeline, the East Siberia Pacific Oil Pipeline, to a Pacific deepwater port.⁴⁷

Russia's specific energy policy towards Asian countries is still ambiguous.⁴⁸ Oil export to Asia still takes the form of railway at the moment which cost much higher than pipeline options.⁴⁹ One particular obstacle is the possible insufficiency of Russia's long-term production capacity to meet commitment to both the EU and the Asian market because investment is insufficient and reserve replacement rate is low.⁵⁰ There are several high-profile attempts to link the natural gas and oil resources in East Siberia and the Far East Russia with the growing demand in Northeast Asian countries in partnership with Asian NOCs⁵¹.

The past few months have seen a significant shift in the structure of the Russian gas industry in eastern Russia, with two of the three major gas projects in the region, run by international companies, forced to relinquish control to Gazprom.

The first was Sakhalin II: Gazprom now holds a 50 percent plus one share stake in the project, relinquished by Shell and its partners Mitsui and Mitsubishi. The deal followed threats from the Russian natural resources ministry to revoke Shell's Production Sharing Agreement on the grounds of alleged failures to comply with environmental regulations. The second is the Kovykta licence, which saw TNK-BP sell its licence to Gazprom because of a failure to meet production levels in accordance with the licence - levels which could not be achieved because Gazprom blocked sales opportunities, such as exports to China⁵².

The next target for Gazprom is to wrest control of Sakhalin I gas sales from Exxon Neftegas, which is currently in discussion with Chinese companies regarding sale through a proposed pipeline. This is altogether more challenging; Exxon Neftegas is the operating company and is jointly owned by the Sakhalin I licence holders. It has state-controlled Rosneft as a shareholder through its subsidiaries, RN-Astra (8.5 percent) and Sakhalinmorneftegas-Shelf (11.5 percent). The presence of these Rosneft subsidiaries provides good insurance against an attack on the licence or PSA, and the PSA gives Exxon Neftegas the right to build export pipelines; a right which takes precedence over Gazprom's monopoly on export lines.

To underpin its plans in the Far East, Gazprom has proposed an ambitious regional grid which would link the major production centres in Irkutsk (the Kovykta field), the Sakha Republic (Chayandinskoye) and the Sakhalin licences with LNG plants on Russia's Pacific coast or export pipelines to markets in China and, possibly, onwards to Korea. Its plans provide for two pipelines to China, the first of these export lines is planned to be operational by 2011 and would deliver 30 Bcm/year to the western end of the Chinese West-East pipeline. The second would pass to the east of Mongolia and is planned for start-up in 2013 or later.

Some sections of the grid are already in place in Sakhalin and Khabarovsk or are under development around Irkutsk. Gazprom has proposed the Altai project (the western pipeline to China with some associated infrastructure in the Altai region) – commercial negotiations with China were due to be completed at the end of 2006, but price remains the big stumbling block. Recently Gazprom also announced that it intends to build a pipeline in parallel with and in the same way leave as Transneft's oil line from Taishet in Irkutsk Oblast to Skovorodino in the Amur Oblast. This would be the first section of a main trunk line to the Pacific coast; conveniently Skovorodino is roughly where the proposed eastern line to China would start⁵³.

Gazprom will need to address whether China can afford to reject Russian gas supplies and still satisfy its energy demand. In the absence of a price agreement with China the immediate prospects for pipeline export are not good, so we might expect to see Gazprom making an early investment in the line to Skovorodino. This would serve it well in two ways; it leaves the option to deliver gas to eastern China open but also makes the first move in a line to the Pacific and means it would not need to spend time and money

picking a route. By investing in the line to the coast, Gazprom would also be showing China that it is developing outlets to other markets. The stand-off on pricing could see Russia developing several LNG plants on the Pacific coast sooner rather than later.

Proposed and existing Russian gas pipelines in Eastern Siberia and the Far East



Collaboration or confrontation with China

The relationship between China and Russia is a typical one between two great powers - on one hand, pragmatic considerations urge both sides to co-operate; on the other hand, deep-rooted suspicion exists towards each other due to disputes in the history⁵⁴. Russia's eastern regions are sparsely populated and bordering with a heavily populated Chinese region - under the threat of illegal Chinese migrants.⁵⁵ Russia is concerned about China's rise, which could threaten its position as a regional superpower.⁵⁶ From this perspective, fuelling Chinese modernisation by supplying energy to the country could be seen as risking Russia's own interest.

Additionally, Chinese efforts to court Central Asian countries could also undermine the traditional sphere of Russian influence. (Recall that Gazprom buys about 55 Bcm a year from Kazakhstan, Turkmenistan and Uzbekistan, which is 10 percent of its own production). The Shanghai Co-operation Organisation has also been seen as a tool for Russia and China to blunt growing US influence in the region, as well as provide a forum

for the historic protagonists to resolve their differences as they jockey for position in Central Asia.

Although this is still the case, the SCO is evolving in a way that could see it play a major role in the development, including production, transit, and export, of Central Asia's oil and gas resources. The key dimension of the SCO remains the Sino-Russian relationship. China and Russia have developed increasingly close relations, sharing a common resentment of the West's global dominance and its tendency to interfere in what they regard as "internal affairs." Despite the recent warming in relations and shared fears of US "encirclement," the two countries' ties with the US will remain their most important bilateral relationship.

Whereas Beijing emphasizes the SCO's utility as a vehicle for coordination on soft security and economics (which includes anti-terrorist activities short of conflict), Russia apparently sees or hopes to see the organization as a military alliance in some way susceptible to its agenda. Yet Russia's hopes of achieving this outcome have not been realized until now because of the opposition of China and the Central Asian states to a military bloc. They prefer an organization whose main purpose is anti-terrorism and economic cooperation and are ultimately suspicious of being included in any bloc, particularly one identified as being openly anti-American.

There are however many common grounds for both Moscow and Beijing to co-operate. Russia has an important place in Chinese geopolitical calculations as a supplier of both energy resources and modern weaponry. Both countries have a strong government intervention in the economy. Both face 'pressures from the West on issues of democracy, market liberalisation and media and religious freedoms', and both share the same objection towards 'separatism, radicalism and extremism'.⁵⁷ Given its energy efficiency and environmental friendliness, Russian gas is a rational alternative to oil, and especially to Middle Eastern oil, for China. With nearly a third of global reserves—and possibly more in the unexplored recesses of Siberia and Arctic—Russia is a natural supplier not only to China, but also to the North East Asia.

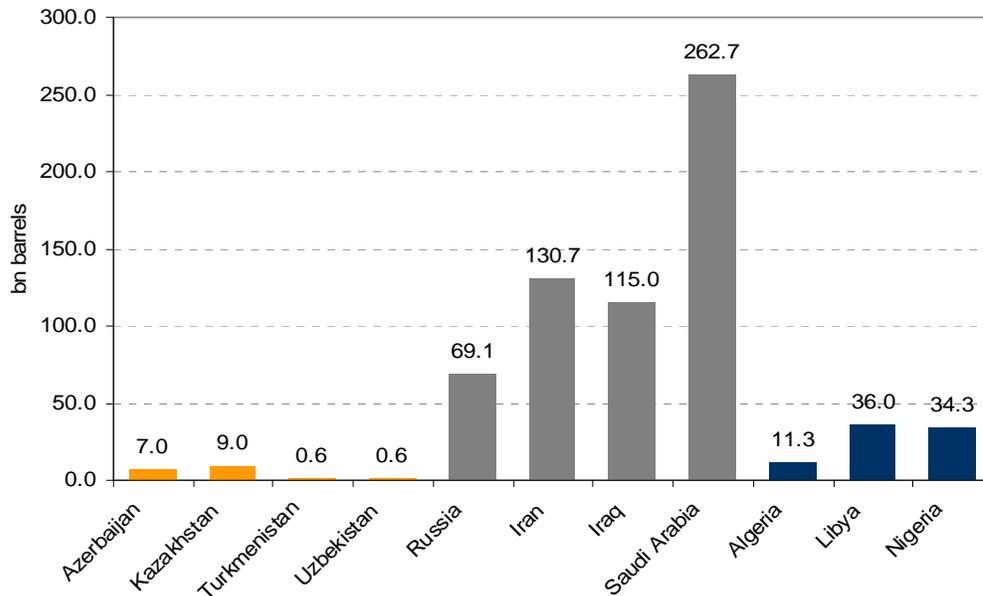
Dependency is reciprocal. Russia needs China to access Asian market and to promote the economy development of its Eastern regions and to counterbalance its dependence on the EU and the US.⁵⁸ Russia is China's fifth-largest foreign oil supplier, providing about a tenth of Beijing's imported oil needs. The two countries are also in talks to build an \$11.5 bn pipeline from Anagarsk in Russia's Siberia to the Pacific Ocean, with a connection to the Daqing oil fields in eastern China. During Putin's recent visit, the two countries signed an agreement to expand their cooperation on joint oil and development projects between Rosneft and CNPC. China was allowed to participate through a 20 percent share in Yuganskneftegaz, the major production arm of Yukos in 2005. A Chinese loan of \$6bn to Russia government enabled Rosneft to achieve the purchase.⁵⁹

Probably the most crucial question for the future of Russia as an energy supplier to Northeast Asia, however, is whether or not international investors and Russian companies will be able to make competitive deals with other Northeast Asian countries. In this regard, the question of transportation becomes particularly salient when the costs of overcoming the vast territories, cold temperatures, and rugged terrain between Siberian gas fields and Northeast Asian markets are taken into consideration.

Central Asia/Caspian – a growing producing region and scene of new geopolitical rivalry

In the 1990s, Central Asia appeared to be the playing field of an emerging competition between Russia and the United States. But now China has gradually emerged as one of the region's main partners. This rapprochement raises questions about the geopolitical changes in the aftermath of the Soviet Union's demise and the consolidation of China's new power.

Central Asian/Caspian countries⁶⁰ offer the best available option for China to reduce its dependence on the Gulf (as well as Russia) and help avoid the 'Malacca dilemma' as the transportation from these countries is relatively secure, short and by land-based pipelines. Therefore, it is no surprise that China has made this region a cornerstone of its energy security policy in order to diversify its import sources for avoiding the risks of over reliance on one single source of supplier⁶¹. The lack of a strong U.S. military presence in this geography, especially one that can counter China's massive land power, has made this neighbouring region an appealing source of energy in the eyes of Chinese strategic planners.⁶²



Source: BP Statistical World Review 2004 / Shine Solutions

The Caspian Sea, with its western shore forming the eastern edge of the Caucasus and its eastern shore marking the beginning of Central Asia, is now seen as a significant element of global oil and gas supplies⁶³. In the early 1990s, many sceptics regarded the Caspian Sea region as too backward, too unstable and too commercially unattractive to warrant development compared with potential oil ventures in Russia. The situation today has reversed completely.

Kazakhstan's Expanding Energy Links with China

Among Caspian/Central Asian countries Kazakhstan matters most to China. Their close relationship dates back to 2,000 years ago, largely through interactions along the Silk Road. In January 1992, only one month after the founding of the new Central Asian countries, a Chinese delegation visited Kazakhstan to establish diplomatic relations. Since then, significant progress has been made on many fronts.

China's quest for energy security is one key reason for its expanding energy linkages with Kazakhstan, but other reasons are equally important, i.e. border security, ethnic unrest in Xinjiang and access to burgeoning consumer markets in Central Asia. Beijing is also fashioning itself as an alternative political and economic development model, conscious of the fact that the Western-dictated structures have led to resentment in this country. Astana and Beijing have so far signed 11 co-operation agreements in various fields since 1993. Efforts to expand economic and commercial relations have resulted in tremendous success as bilateral trade has grown \$6.8 bn in 2005 -- an increase of more than 16 times in 14 years.

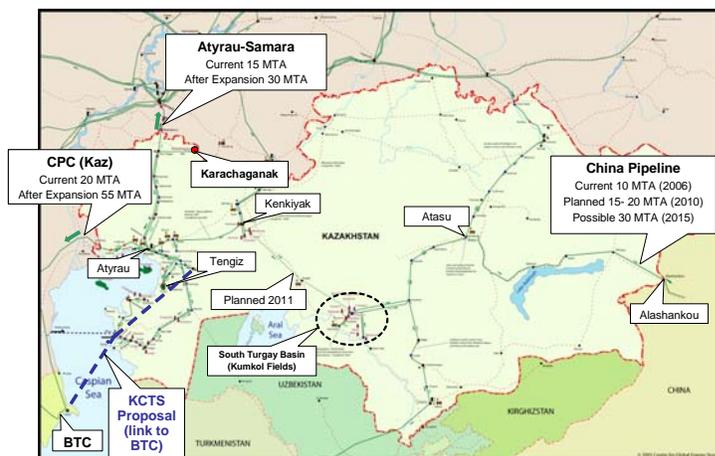
Kazakhstan's combined onshore and offshore proven reserves are 37 bn barrels of oil and 3.3 Tcm of gas,⁶⁴ which can allow it to move to the higher echelons of the world major oil producers, with targets of 2 mbd of oil production by 2010, and 3 to 3.5 mbd by 2015. Markets for exported Kazakh oil too are growing rapidly, and current infrastructure helps deliver oil to world markets at the Black Sea port of Novorossiysk (via the Tengiz-Novorossiysk pipeline) and at the Arabian Gulf (via swaps with Iran), as well as additional traffic northward to Russia via pipeline (Atyrau-Samara pipeline) and rail.

By the end of this decade Kazakhstan will likely become a vital part of China's energy security response measures. China has already made a major coup with its investments in Kazakhstan, not only signalling but also implementing its intention to function and be seen as a major player in the country's oil and gas development and helping to create alternative hydrocarbon export outlets. The resources it has acquired and probably will acquire in the future, by whatever path they may reach China (e.g. from the proposed visionary "Energy Silk Route" pipeline system), will considerably help China's efforts to diversify import sources and bring them closer to home in a geopolitical sense.

China's increasing attention to Central Asia has the potential to threaten Russian pre-eminence in its 'near abroad', but Russian oil and gas companies are responding to the challenge by increasing their own investments in Central Asia. Competition between Russian and Chinese oil companies for oil and gas reserves in Central Asia is on the rise, but collaboration on several projects, as well as direct bilateral co-operation between the Russian and Chinese governments, could help ensure that the nascent rivalry remains benign.

Kazakhstan, Turkmenistan, and Uzbekistan should benefit from the rising levels of investment in their energy sectors by Russia and China, but the overall effect may be to marginalise the U.S. and European governments in their attempts to bring about political and economic reforms in the Central Asian countries. Different from policy of Russia, Chinese are favourably viewed in upstream investment in Kazakhstan. According to the former Kazakh Energy Minister Izmukhambetov, Chinese companies operating in Kazakhstan currently account for 12 percent of hydrocarbon production in the country. That figure is expected to rise sharply in the near future⁶⁵ not only in upstream investments but also in eastward pipelines. Kazakhstan views China pipelines as key to its efforts to ensure that no regional power can exercise strategic control over its energy routes and its broader economic and political ties to western, Mediterranean, and Asian partners⁶⁶.

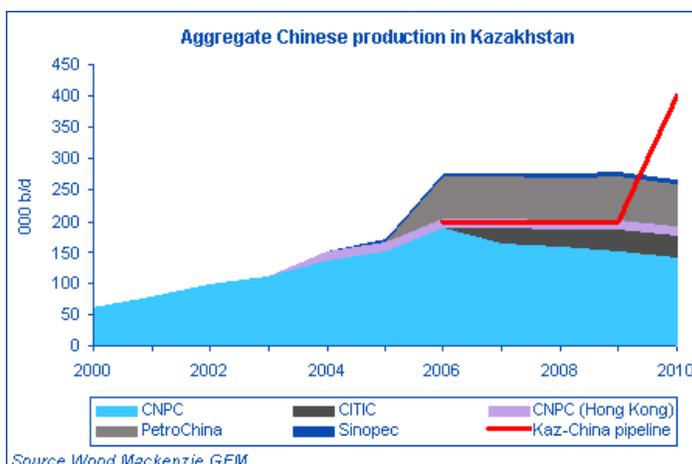
China and Kazakhstan have partnered to expand an oil pipeline set to link mainland China to the Caspian Sea, thereby providing the former with direct access to the energy-rich region. For this purpose, the CNPC inked an agreement with KazMunaiGaz in mid-August 2007, paving the way for the expansion of the Atasu-Alashankou pipeline 700 km westwards.



China's participation in the upstream of Kazakh's oil sector has grown dramatically since 1997 when CNPC acquired stakes in two oil fields: Kenkiyak & Zhanazhol Fields.⁶⁷ Another majority stake in Aktobemuniagaz was acquired in the same year, which owns large fields in Aktyubinsk at a cost of \$4.3 bn.⁶⁸ CNOOC wanted to buy BG stake in Kashagan, but this did not work as planned.

In 2005, CNPC successfully secured one of its largest overseas assets, the Canadian registered Petrokazakhstan, at a cost of \$4.18bn, although CNPC was required by Kazakh to sell one third of this company to KazMunaiGaz. At the end of 2006, another Chinese investment company bought 100 percent of stake in Canada's Nations Energy Company Ltd at a cost of \$1.9bn, under the condition of offering again half stakes to KazMunaiGaz.⁶⁹ It will develop the Karazhanbas oil and gas field in Mangistau Oblast until 2020.

The Sino-Kazak energy co-operation is not limited only to the upstream exploration and production. In 2004, after the Angarsk (Russia)-Daqing (China) pipeline was opted out by Russia, a deal to build an oil pipeline linking Kazakhstan and China was signed during Nazarbayev's 2004 state visit to Beijing. With the December 2005 commissioning of this pipeline, the missing link in China's chain of investments in Central Asia was put in place, both literally and symbolically. The launch of Kazakh oil flows toward China along the Atasu-Alashankou stretch of the pipeline represents the culmination of a strategy that has seen China increasingly target the Central Asian republics - Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan - for energy sector investments.



Source Wood Mackenzie GEM

The pipeline, a joint venture between CNPC and Kaztransoil, has an initial capacity of 200,000b/d, which will be upgraded⁷⁰ to 400,000b/d. The proposed expansion is expected to be financed almost entirely by China.⁷¹ The Kazakhstan-to-China pipeline will eventually stretch 2,860 km across Kazakhstan once all phases are

completed, connecting CNPC's fields in western Kazakhstan's Aktyubinsk region with western China. The Chinese plan aims to connect several pieces of infrastructure -- some Soviet-built, some Chinese-built -- then reverse the flow of some of them and forge a new export corridor stretching from Kazakhstan's Caspian basin, including Kashagan, through a series of western- and central-Kazakh oil zones, and ultimately into China.

Not only would the pipeline cutting diagonally across Kazakhstan give China an export outlet, it also would deliver natural gas to Kazakhstan's inner regions. China would provide the funding for the much-desired pipeline, for which Kazakhstan has so far been unwilling -- or unable -- to put aside the money. Though this is one reason for Kazakhstan's invitation to China, it is not the most significant. By getting the Chinese involved, Kazakhstan has created a balance to Russia, ensuring that it does not become entirely dependent on Russia for its energy export needs.

In addition to the oil pipeline, CNPC signed an agreement in August 2005 to construct a 3,000 km gas pipeline to supply China's west to east pipeline, currently underutilised⁷². The route is still undetermined, but the parties agreed to design the pipeline for throughput of at least 1060 bcf per year (30 Bcm) and with initial flows of 350 bcf per year.

Kazakhstan and China are looking at three possibilities. The options include the expansion of the existing pipeline between the Uzbek cities of Bukhara and Tashkent to Almaty, via Taldy-Kurgan in Kazakhstan to Alashankou on the border with China. Another option is construction of a new gas pipeline connecting Ishim in Russia's western Siberia and Alashankou through the Kazakh cities of Astana and Karaganda, while the third is building a pipeline from Chelkar in western Kazakhstan through Kyzyl-Orda to Shimkent where it would connect to the Bukhara-Tashkent-Almaty pipeline. Kazakhstan has also offered to open up its territory for the transit of Turkmen natural gas to China.



Russia has maintained a strong say in the affairs of the Central Asian republics, in large part due to its control over the region's oil and gas export exports, which are a major source of revenue for Kazakhstan and Turkmenistan, in particular. Until 1997, when a gas pipeline linking Turkmenistan to Iran was put into operation, the Central Asian countries were completely dependent on Russia as a market or a transit state, as all oil and gas export pipelines from the region were routed via Russia. The risk of this dependency was made clear in the 1997

dispute between Turkmenistan and Russia over gas prices, when Gazprom refused to take any Turkmen gas from the Central Asia-Centre gas pipeline, causing Turkmenistan to shut in gas production and exports.

Kazakhstan relies on gas imports from Uzbekistan for its southern regions, and with supplies from Uzbekistan erratic over the past few years, Kazakhstan is keen to eliminate this dependence altogether. The severe cold snap in Central Asia this year has pit countries against each other, with Uzbekistan exacerbating existing regional rivalries by reducing gas imports and leaving importing countries in the grip of a historic deep freeze. As a result, Kazakhstan has decided to alter its plans to build a pipeline that would cross Kazakhstan from west to east and instead route it to supply gas to the country's southern regions.

Kazakh Prime Minister Masimov said that the trans-Kazakhstan pipeline, originally proposed as a potential route to export gas to China, will now be designed primarily to supply Kazakhstan's domestic market in the south of the country⁷³. Kazakhstan's southern regions are dependent on gas imports from Uzbekistan, which last month was forced to cut gas supplies to southern Kazakhstan as a severe cold front in the region triggered a sharp spike in gas demand. The estimated \$3.8-billion pipeline, which would run 1,500 km, would go from Beyneu in western Kazakhstan to Shymkent in the southern part of the country. Initial plans for the pipeline to run to the Chinese border and have a capacity of 10 bcm/year, rising to 20 bcm/year, have been revised downward to carry 5 bcm/year, rising to 10 bcm/year by 2014. KazMunaiGaz will build the pipeline, which is expected to be operational by 2011.

The decision to re-orient the pipeline to supply the domestic market rather than China makes sense not only for Kazakhstan's own drive for self-sufficiency, but also because many had questioned Kazakhstan's ability to supply enough gas to China in the first place. In addition, Turkmenistan is already in the process of building a gas pipeline to China that will run via Kazakhstan⁷⁴. The planned Beyneu-Shymkent pipeline will still meet at a junction with the Turkmenistan-China pipeline near Shymkent, giving Kazakhstan the potential ability to export any extra gas beyond what is needed in southern Kazakhstan.

Not all is fine. Although formally welcoming Chinese investment, Kazakhstan remains suspicious about its eastern neighbour with '100 times of the population but only three times the area.' Some in Kazakhstan advise caution in dealing with China. Former opposition figure Marat Auevov reminds that the Kazakh-Chinese border agreement in the mid-1990s that ceded huge areas of Kazakh territory to China, and the agreement for China to use water from the Kara-Irtysh River that flows from China into Kazakhstan to help develop its own oil fields in the Xinjiang Uyghur Autonomous Region⁷⁵.

Chinese practice of bringing in their own workers intensifies this distrust.⁷⁶ The claim of China threat is also frequently raised. For example, Kazakhstan's parliament has recently

expressed growing concern about China's too much acquisition of the country's oil reserves. In response, the Kazakh Energy Minister announced that he will block further Chinese acquisition in the energy sector. A member of Nazarbayev's Otan Party, Valery Kotovich, said in parliament that China's aggressive purchasing policy has posed a threat to Kazakhstan's independence. Some analyst believes that Kazakhstan leadership is using China for increasing its leverage in negotiations with Russia.⁷⁷

Not only was a number of upstream investment, pipelines and refinery deals signed with Astana, but China will explore for oil and gas with Turkmenistan and is talking to Uzbekistan and Kazakhstan about gas pipelines from the latter through, or with branches to, Uzbekistan and Turkmenistan, so that it can avoid having to depend on Russia. Since neither of those Central Asian states wants to be permanently tied to subsidizing Russia at below market prices, the stage is being set for Sino-Russian rivalry in Central Asian gas affairs⁷⁸.

This is all the more likely as Russian demand is increasing, while its pipeline capacity is insufficient, and while it is determined to subordinate Central Asian gas to its whims so that it can keep the region dependent upon it, maintain Gazprom's monopoly over gas and pipelines and provide its own customers with cheap energy at subsidized prices.

Originally known as the Shanghai Five, the SCO, mainly focused on its Central Asian members' security-related concerns, namely the "three evil forces" of terrorism, separatism and extremism, has been transforming itself into an effective regional organisation. The SCO's growing co-operation in the military and energy sphere has made some non-SCO countries apprehensive.

China-Turkmenistan ties on the move

The most significant outcome from the August 2007 Bishkek summit of the SCO was a new step taken toward creating a regional energy club pursuant to a proposal in 2006 by the then Russian President Putin. Kazakh President Nazarbayev has championed the proposal in 2007 and also asked for a unified energy infrastructure among the member states. "The draft Asian energy strategy envisions the establishment of an SCO Energy Agency, which would be a type of 'brain centre' and database, while transactions on the market for energy resources could be made through an SCO energy bourse," Nazarbayev said. He believes that forming an oil and gas club was one of the pivotal ideas for the SCO, as the existing pipeline system linking Russia, Kazakhstan, Central Asia and China, could serve as a basis for establishing a uniform SCO market⁷⁹.

Putin added his voice to the creation of an energy club and stressed that expanding fuel trade cooperation could give an impetus to regional projects. "I am sure that the initiated energy dialogue and accompanying national energy strategies, as well as the establishment of an energy club, will set the priorities for our further cooperation," he said. At the talks in Bishkek as an observer, Iranian President Ahmadinejad too came up with a proposal to hold a meeting of SCO energy ministers in Tehran "to optimize cooperation in transportation, prospecting, development and refining."

Both Moscow and Beijing have been urging Turkmenistan to forsake its previous neutrality and join the organization. Doing so would formally end its neutrality, but it is unclear how Turkmen membership might modify the basic rules and conditions of membership in the organization, unless Moscow is able to turn it, as it sought to do in 2006, into an energy club. This last goal may well be another manifestation of Russia's effort to galvanize practical outcomes in the SCO especially as it is working hard to set up a gas cartel in the Commonwealth of Independent States under its auspices and Kazakhstan and Turkmenistan would be main producers in such a cartel. A crucial factor - which the Russians are keen to point out - is that Iran, India and Pakistan are now observers at the SCO. And the SCO could be able to protect pipelines going in all directions.

President Berdymukhammedov said Turkmenistan would "strive to deliver energy resources, especially natural gas, to world markets, adhering to the existing contracts and looking for new partners." He has also suggested that Turkmenistan may seek to diversify its current export options, currently all dependent on Russia with the exception of a single pipeline to Iran. Referring to an April 2006 agreement to supply China with 30 Bcm of gas a year beginning in 2009, Berdymukhammedov vowed that Turkmenistan would meet its obligation ("from the right bank of Amudarya") to Beijing.

The gas deal between China and Turkmenistan to lay a pipeline to deliver 30 Bcm/year to China is far from complete. Turkmenistan has commissioned the launch of construction of a planned 7,000-km gas pipeline slated to connect Turkmenistan to China via Central Asia. Berdymukhammedov attended the start of construction of the pipeline in eastern Turkmenistan together with Chinese officials, the culmination of talks begun only in 2006 on a gas pipeline that would allow China to diversify its gas import sources and provide Turkmenistan with an alternative outlet to Russia for its gas exports⁸⁰.

Turkmenistan and China reached twin deals on the extraction of Turkmen gas and its delivery to China, bringing the pipeline project closer to reality. The pipeline, which will run only 188 km in Turkmenistan but 4,500 km in China, is scheduled to be completed in 2009. Turkmenistan has moved rapidly to diversify its gas export options, launching construction of the gas pipeline to China just months after appearing to throw in its lot with Russia under a separate gas supply deal.

Berdymukhammedov, however, has made clear that he wants multiple export options for Turkmenistan's voluminous gas supplies. Still, the start of construction on the China gas pipeline is seemingly premature, as the actual route of the pipeline has not yet been clarified, with Kazakhstan and Uzbekistan not yet fully on board with the idea, and Kyrgyzstan seeking to have part of the pipeline routed via its territory. Approximately 530 km and 1,300 km of the pipeline will have to transit territory of Uzbekistan and Kazakhstan, respectively, so their acceptance of the project and its terms are necessary. Thus, the start of construction in Turkmen territory may be just symbolic until there is a

final deal between China and all three of the Central Asian countries on the route for the pipeline, together with transit rights and potential capacity rights for Uzbekistan.

Like all other pipeline deals with China, price has yet to be settled. Reserve levels may also be an issue: Turkmenistan's current 2.9 Tcm of proved reserves is only just sufficient to supply China (30 Bcm/year), Gazprom (60 Bcm/year) and domestic demand (15 Bcm/year) for 30 years, leaving nothing spare. Future discoveries would help but it is risky to plan on the basis of undiscovered reserves.

Turkmenistan may be preparing the options, if Gazprom fails to secure an acceptable price, of selling to China instead and dropping sales to Gazprom. In a similar vein China may simply be playing the field: the more pipeline options it has the better its chances of getting a price it likes.⁸¹ Chinese are also allowed to participate in upstream oil and gas business in these countries.⁸²

China is also pursuing energy co-operation with Uzbekistan - used to be the third-largest producer of natural gas in the Soviet Union, accounting for more than 10 percent of the USSR's production, trailing only Russia and Turkmenistan. Uzbekistan's natural gas reserves are currently estimated to exceed 1 trillion cubic meters. They are primarily concentrated in Qashqadaryo province and near Bukhara in the country's south-central region.

One year ago Uzbekistan and China initialled an agreement to facilitate the annual transit of 30 Bcm of Turkmen natural gas across Uzbekistan territory, with Tashkent helping to construct a pipeline and two compressor stations for the route transiting southern Kyrgyzstan. The pipeline is not initially to transport Uzbek gas, but rather to facilitate Turkmen exports eastward. Traditionally, Uzbek energy exports have utilized the Soviet-era Transneft pipeline monopoly, despite Tashkent's persistent efforts since 1991 to diversify its outlet options. For now, Uzbekistan remains largely a transit country rather than a net energy exporter in its own right. The fiercely independent nationalist policy that Tashkent has followed since 1991 makes all speculation about the country's energy prospects uncertain at best⁸³.

Forward-looking messages

No one disputes that China's integration with the world energy system is critical for its own and the world's energy/environmental security. As China's energy industries become more closely tied into global markets, price volatility and fluctuations elsewhere are already affecting the Chinese energy market more seriously than its more isolated past.

Not surprisingly and as a result of these developments, energy issues have taken a higher priority in Chinese foreign, security and economic policies. This represents a constraint as much as an opportunity because the drive for reliable energy supplies,

now a national imperative, limits increasingly the use of energy policy elements as instruments for other policy objectives. All evidence points to China's rising awareness that its diplomatic goals with respect to energy, primarily oil and gas, must aim towards participation in the global energy system in a way that maximizes domestic energy security.

At the present, China's single most important energy link is with the Middle East, where Iran and Saudi Arabia are emerging as key "bridgeheads" for Beijing's diplomatic and military mandarins. Given the world's petroleum geography the first requisite lies in the development of enduring relations with all potential oil suppliers in the Middle East. Then comes Central Asia, which some see as a massive extension of the Middle East and others treat as a new oil and gas region rivaling it. Compared to Russia, seen as relatively unreliable, Central Asian hydrocarbon resources seem more promising and feasible for China, although funding problems and political calculations plaguing all pipeline projects offer no exception⁸⁴.

China's extending its Central Asian land routes from Kazakhstan and Turkmenistan and then down to northern Iran is seen as a visionary (but, sceptically viewed) Sino-Arabic oil passage to the Gulf ports⁸⁵. China is also willing to join the northern line transportation for its expected stake in Siberia and the Russian Far East, by some oil swap options between China, Kazakhstan and Russia. Similar natural gas projects are under work or consideration linking China to Central Asia and Russia.

These corridors could eventually position the Middle Kingdom at the centre of a "Pan-Asian Global Energy Bridge" that will connect existing and potential suppliers to Asia (i.e., the Gulf, Central Asia, and Russia) with the key consumers (China, Japan and Korea). If successfully implemented, this will not only largely improve the energy security of China, but also will enhance Beijing's geopolitical influence in this geography. It is always difficult to ferret out which of all these proposals is commercially realistic and which are rather far-fetched.

The special influence of China over the security of the two major chokepoints for Asia's supplies (namely, the Straits of Hormuz exiting the Gulf and the Malacca Straits between Indonesia and Malaysia entering the South China Sea)⁸⁶ needs to be looked at since this factor has specific pertinence to the question of the free navigation of oil shipments to Southeast and Northeast Asia⁸⁷.

What the foregoing analysis highlights unambiguously is the growing economic and strategic importance of China in the new global order, and the substantial effect its growth is having on global energy demand and diplomacy. The position of China in global energy and geopolitics will only grow stronger as time passes. China's manner of entry into the global energy markets carries no surprises. Its strategies bear strong similarities to others' and they are equally assertive.

China's growing energy needs, combined with its limited domestic energy resources and fragile international politics, dictate that the country will necessarily become a player of growing importance on the international energy stage, particularly in the hydrocarbon producing regions.⁸⁸ Thus, energy will continue to become a central concern for China and its global search to secure future energy supplies has taken on great urgency⁸⁹.

This will inevitably bring about significant geopolitical power-shift, which China and other major players have to manage carefully. Also, the massive size of its reliance on petroleum import and the specific approaches it takes to secure its import may be seen as a threat. However, China's expanding energy interests should not necessarily pose a threat to the West or to its Asian neighbours. Instead they can be used as an opportunity to integrate China into existing and new institutions and mechanisms at global and regional levels.

Energy co-operation could be a foundation from which the region could form an EU-style integrated community using the basic framework to promote market efficiency and accelerate liberalization across the region⁹⁰. On the commercial level, 12 major oil companies from China, Japan and South Korea also met in September 2005 in Seoul to discuss the possibility of setting up an oil exchange centre in Northeast Asia, share oil storage tanks, and co-operate on crude imports. These meetings were held against a backdrop regional co-operation, including the potential energy partnership between the 10-member ASEAN and China, Japan and South Korea.

But there is not much room for over-optimism because daunting challenges make the potential co-operation framework very difficult to work. For one thing, heterogeneous political and economic systems and market behaviour set the countries apart. Energy markets in these countries are relatively immature with strict import barriers. Cross-subsidies on energy prices and entangled tax systems could also deter creation of a competitive energy market. Then comes the old story of trust. It is still a big question whether countries are willing to bank their energy security on a regional (or multilateral) framework.

At a time when intense competition for unimpeded access to the world's natural resources is continuing and is likely to increase, enhanced energy linkages and associated ties can contribute to the development of a co-operative mechanism involving China, North East Asia, Central Asia, and the Gulf - exactly the opposite of the "Great Game". However, if these players are unable to manage wisely their internal dynamics and organize their interdependence rationally, the collaborative efforts will not yield any tangible results to remove the sense of isolation each may feel and persuade them that uncooperative energy policies would work against their own best interests in the longer term⁹¹.

- ¹ Ernst&Young (2007). Partnership in the Oil and Gas Sector: New Models, New Agendas 1-19. P3 Mandil, C. (2007). The Energy Future International Oil and Gas: Financial Review 2007. M. Crisell, Euromoney International Investor PLC 1-3. P1
- ² Despite four years of high oil prices, market tightness is likely to increase beyond 2010 as global oil demand will grow from an annual 2 percent average over the next five years to 2.2 percent. The increase will largely be caused by faster growth in Asia and the Middle East. At the same time, non-OPEC supply will decrease, partly because of delays on major oil projects but also because supplies are nearing a peak. While biofuel production is expected to double over the next few years, it will still only account for 2 percent of global oil supplies by 2012.
- ³ Mandil, C. (2007). The Energy Future International Oil and Gas: Financial Review 2007. M. Crisell, Euromoney International Investor PLC 1-3.P1
- ⁴ Lo, B. and A. Rothman (2006). China and Russia: Common Interests, Contrasting Perceptions Asia Pacific Strategy, Asian Geopolitics Special Report, CLSA Asia-Pacific Markets: 1-31.P13, 21
- ⁵ See "The new seven sisters: oil and gas giants that dwarf the west's top producers", Financial Times, March 12, 2007. A recent study measuring the shift in power in global energy markets revealed that seven major state controlled energy corporations from non-OECD countries (i.e. Saudi Aramco, Gazprom, PDVSA, China's CNPC, Iran's NIOC, Petrobras of Brazil and Petronas of Malaysia) presently control over 30 percent of global oil and gas production and over 30 percent of reserves, while the original seven (now four) OECD-based energy blue chips which have dominated global energy markets since World War II (i.e. ExxonMobil, BP, Chevron, Shell) now control just 10 percent of production and 3 percent of reserves.
- ⁶ According to EIA, the world oil demand could reach to 99million barrels per day in 2015, and 116 million per day in 2030, up from 84 million per day in 2005.
- ⁷ In "Energy Security and Climate Change – Assessing Interactions" the IEA puts forward a methodology for countries to assess the vulnerability of their energy systems. OECD and developing Asian countries become increasingly dependent on imports as their indigenous production fails to keep pace with demand. Non-OPEC production of conventional crude oil and natural gas liquids is set to peak within a decade. By 2030, the OECD as a whole will import two-thirds of its oil needs, compared with 56 percent today.
- ⁸ Yet, countries and companies are less willing to commit to long term investment because of an uncertain future. According to International Gas Union, current annual investment on energy is around \$14bn, whilst to recover each barrel of oil consumed, an annual \$40bn investment is needed. The IEA projection of investment in the energy sector to 2030 is \$23 trillion. This immense investment will not happen without a significant improvement of institutional framework, and effective partnership.
- ⁹ Financial Times, 6 June, 2007, P1, 'Drive on Biofuels Risks Oil Price Surge', by Javier Blas and Ed Crooks
- ¹⁰ "BP Statistical Review of World Energy 2006." Retrieved 21 Jan 2007, from <http://www.bp.com/productlanding.do?categoryId=6842&contentId=7021390>.
- ¹¹ China's harsh winter to hit 2008 oil demand-Lehman, Reuters, 12 February 2008.
- ¹² Ernst&Young (2007). Partnership in the Oil and Gas Sector: New Models, New Agendas 1-19. P3 Mandil, C. (2007). The Energy Future International Oil and Gas: Financial Review 2007. M. Crisell, Euromoney International Investor PLC 1-3. P1
- ¹³ China's Worldwide Quest for Energy Security, Mehmet Ogutcu, IEA, Paris, 2000.
- ¹⁴ "China to triple crude imports by 2030-IEA." Interfax China Energy Report Weekly VI(4)2007
- ¹⁵ BP. (2006). "BP Statistical Review of World Energy 2006." Retrieved 21 Jan 2007, from <http://www.bp.com/productlanding.do?categoryId=6842&contentId=7021390>.
- ¹⁶ EurasiaGroup (2006). China's Overseas Investments in Oil and Gas Production, Eurasia Group: 1-26.P2
- ¹⁷ Guan, H. (2007). Energy plan: Reliance on coal and oil to be eased. China Daily Beijing
- ¹⁸ EurasiaGroup (2006). China's Overseas Investments in Oil and Gas Production, Eurasia Group: 1-26. P2
- ¹⁹ Downs, E. (2006). "Energy Security Series-China." The Brookings Foreign Policy Studies Dec 1-67. P11. The real import figure will highly depend on government policy towards natural gas, especially price and investment policy. Currently, the central government, while aspiring to promote natural gas, insists that the gas must be affordable because of the developing nature of the Chinese economy. In the absence of supportive policies to keep gas cost competitive (vis-à-vis coal in power generation), it may be difficult for gas demand to reach levels called for in the central government's projections.
- ²⁰ Fuel needs force China back to gas markets, Financial Times, 3 September 2007.
- ²¹ Asia's energy insecurity: co-operation or conflict?, Mikal E. Herberg, http://www.nbr.org/publications/strategic_asia/pdf/sa04_11energy.pdf
- ²² Zweig, D. (2005). "The Foreign Policy of a "Resource Hungry" State." RUSI presentation.
- ²³ The Strategic Implications of China's Energy Needs (Adelphi Papers, 346) A Andrews-Speed, 2002
- ²⁴ Christoffersen, G. (2004). Angarsk as a Challenge for the East Asian Energy Community. Northeast Asian Security: Traditional and Untraditional Issues, Renmin University of China, Beijing, China, P3
- 'Energy security of supply was put into the tenth five year plan the for the first time'
- ²⁵ EurasiaGroup (2006). China's Overseas Investments in Oil and Gas Production, Eurasia Group: 1-26.P2. The East-West Center forecasts that by 2020, 80 percent of China's oil imports will come from the Middle East. Other significant shares of China's oil imports will come from Russia by pipeline and rail, from Central Asia by pipeline and rail, and from Africa by tanker.
- ²⁶ Boeckstein, B. and J. Henderson (2005). Thirsty Dragon, Hungry Eagle: Oil Security in Sino-US Relations. IPEG Papers in Global Political Economy no. 21. P34; Christoffersen, G. (2004). Angarsk as a Challenge for the East Asian Energy Community. Northeast Asian Security: Traditional and Untraditional Issues, Renmin University of China, Beijing, China, P3, 11
- ²⁷ Zweig, D. (2005). "The Foreign Policy of a "Resource Hungry" State." RUSI presentation.

²⁸ China's energy strategy is of concern to other Asian countries, particularly Japan. Predictions of rising demand have led to speculation that the Gulf countries will not be able to meet the rapidly growing Asian oil demand and therefore will have to pick among potential customers. Tokyo is concerned that its current stable energy supply from the Gulf might be jeopardized by China's expanding presence in the market in "a war for energy resources." Another concern is that China, which will increasingly view energy imports as a matter of life or death, will be tempted to launch its own antagonistic campaign to command the seelanes, thereby jeopardizing the Asian security balance. Yet, neither of these two concerns is a realistic threat in the foreseeable future.

²⁹ Xiaojie, X. (2000). "China and the Middle East: Cross-Investment in the Energy Sector." *Middle East Policy* 7(3).

³⁰ Erica S. Downs, "The Chinese Energy Security Debate," *China Quarterly* 177 (March 2004): 35.

³¹ Amy Myers Jaffe and Steven W. Lewis, "Beijing's Oil Diplomacy," *Survival* 44, 1 (Spring 2002): 126.

³² In a long run, the price is generally lower from that in the international market because the buyer, as an equity owner, usually produces and transports its oil below the market clearing price. It also enhances safe and stable supply as the equity ownership eliminates the need for middlemen, such as other oil companies, between the oil in the ground and the consumer, which could cut off supply.

³³ Philip Andrews-Speed, Xuanli Liao and Roland Dannreuther, *The Strategic Implication of China's Energy's Needs*, Adelphi Paper 346 (London: Oxford University Press, 2002), chapter 2.

³⁴ <http://www.bakerinstitute.org/Pubs/workingpapers/jescgem/aesrj11/aesrj.html> (3 of 20)2/11/2004 7:43:22 AM Asia's Energy Security and the Role of Japan: A Diplomatic Perspective

³⁵ However, as the IEA recently reports, the world's oil reserves are estimated at 1.35 trillion barrels and even as much as 2.3 trillion barrels inclusive of oil sands and oil shells. Thus, there is no need to fear exhaustion of energy for the time being. Moreover, OPEC's oil production capacity, especially in the Persian Gulf, is sufficient to meet the rapidly growing demand from Asia. The Gulf is expected to produce 55.5 mbd by 2020, more than 2.5 times the 1991 production level and in line with reasonable forecasts of demand.

³⁶ For example, China, the largest possible consumer of energy in this region, still lacks the infrastructure for major domestic gas usage. The country needs natural gas transportation and urban distribution networks. The electricity grid systems have to be expanded and modernized further to meet the rapidly growing demand. Japan also lacks a domestic natural gas pipeline network with its regionally segregated gas markets. Kovykta gas, without infrastructure to cross the sea, may not reach Japan in the foreseeable future, while the LNG supply from Sakhalin II field would be economically competitive and most probably will start beyond 2007.

³⁷ Ernst&Young (2007). Overview of the Oil and Gas Industry in Russia. Ernst&Young: 1-37. P24 Oil Reserve: proven at the end of 2005: 60 billion bbl; production is 9.55 mb/d, consumption 2.75mb/d, export 6.8 mb/d in 2005. "BP Statistical Review of World Energy 2006." Retrieved 21 Jan 2007, from <http://www.bp.com/productlanding.do?categoryId=6842&contentId=7021390>.

³⁸ Ernst&Young (2007). Overview of the Oil and Gas Industry in Russia. Ernst&Young: 1-37. P24

"proven gas reserve 47.7 trillion cubic meters, production in 2005 , consumption in 2005 , export in 2005'

Oil Reserve: proven at the end of 2005: 60 billion bbl; production is 9.55 mb/d, consumption 2.75mb/d, export 6.8 mb/d in 2005. "BP Statistical Review of World Energy 2006." Retrieved 21 Jan 2007, from <http://www.bp.com/productlanding.do?categoryId=6842&contentId=7021390>.

³⁹ Brookings (2007). *The Future of Energy Security*. Washington, D.C., The Brookings Institution: 1-64. P4-6

⁴⁰ Russia wants Beijing to buy more of its manufactured goods to prevent Moscow from becoming only a source of raw materials for China. And while Russia is China's main arms supplier—providing everything from destroyers to nuclear submarines—Moscow is more reluctant to sell items, including military aircraft and missile systems, which Beijing could use against it in a land war.

⁴¹ Sergei Blagov, "Russia tangles with Japan and China," *Asia Times Online*, September 1 2004, <http://www.atimes.com/atimes/Central_Asia/FI01Ag01.html> (October 30 2005).

See also James Brooke, "Japan and China Battle for Russia's Oil and Gas," *New York Times*, January 3 2004.

⁴² Ernst&Young (2007). Overview of the Oil and Gas Industry in Russia. Ernst&Young: 1-37. P25

⁴³ Note that Turkey is Gazprom's second largest customer after the EU. It is heavily dependent upon Russian natural gas and this dependence is expected to exceed two-thirds by 2010. Last year alone Turkey received some 20 bcm of Russian gas in comparison with Western Europe, which imported 50 bcm during the same period. Besides being a big importer of Russian gas, Turkey is also a lucrative market of consumption for Russia -- especially in light of the two currently functional gas pipelines. The Turkish-Russian foreign trade turnover alone has reached \$20 billion and has the potential for continued growth.

⁴⁴ Wang, L. (2006). "The East Energy Diplomacy of Russia and the Sino-Russia Energy Cooperation." *Modern International Relationship* 8: 8-20. P9

⁴⁵ Brookings (2007). *The Future of Energy Security*. Washington, D.C., The Brookings Institution: 1-64. P2

⁴⁶ Wang, L. (2006). "The East Energy Diplomacy of Russia and the Sino-Russia Energy Cooperation." *Modern International Relationship* 8: 8-20. P10. Maxie, J. S. (2006). "The New Eurasian Energy Architecture: will Russia Deliver." Presented to Harriman Institute-Columbia University PFC Energy

⁴⁷ Brookings (2007). *The Future of Energy Security*. Washington, D.C., The Brookings Institution: 1-64. 'It is likely that Russia will connect Asia market with 'production and infrastructure' of West Siberia in the short run, this may cause the concern of competition between the East and the West'

⁴⁸ Brookings (2006). *The Russian Federation. The Brookings Foreign Policy Studies Energy Security Series*. Washington, D.C., The Brookings Institution: 1-33. P15

⁴⁹ Brookings (2007). *The Future of Energy Security*. Washington, D.C., The Brookings Institution: 1-64. P14-15

- ⁵⁰ Brookings (2007). *The Future of Energy Security*. Washington, D.C., The Brookings Institution: 1-64. P4, 16, 27
- ⁵¹ Relatively new to the equation is the strong interest of Asian State oil companies, such as India's ONGC and China's CNPC to buy into equity positions in the Russian oil and gas sector. Clearly Russia has every reason to be attentive to these new suitors – given its geopolitical interests. It is also probably safe to say that this new interest by Asian State companies will serve to erode or at least delay progress on market reform, competition and transparency in Russia being pressed by internal Russian reformers and Western interests. Western arguments that foreign direct investment will not flow without reform are put in question both by Western companies' expressions of optimism and by the arrival of new Asian suitors with bags of cash.
- ⁵² Gazprom's far eastern gas plans gather speed, *Gas Matters*, August 2007.
- ⁵³ However all this may not develop quite as Gazprom intends. Firstly, it has not yet complete its sales agreement with China. Everything is apparently in place, including a price formula, which links gas price to oil prices, with the single, important exception of price itself. China recently refused to pay more than \$100/Mcm (\$2.84/MMBtu) at the Russia/China border, according to reports. At this level Gazprom would be unlikely to find the deal attractive compared with delivery to domestic markets where it is proposed to raise prices to between \$100 and \$125/Mcm by 2012 reflecting oil-linked net back values based on Gazprom's sales in the European market.
- ⁵⁴ Lo, B. and A. Rothman (2006). *China and Russia: Common Interests, Contrasting Perceptions Asia Pacific Strategy*, Asian Geopolitics Special Report, CLSA Asia-Pacific Markets: 1-31. P4
- ⁵⁵ Lo, B. and A. Rothman (2006). *China and Russia: Common Interests, Contrasting Perceptions Asia Pacific Strategy*, Asian Geopolitics Special Report, CLSA Asia-Pacific Markets: 1-31. P4,13, 21
- ⁵⁶ Chinese reference
- ⁵⁷ Lo, B. and A. Rothman (2006). *China and Russia: Common Interests, Contrasting Perceptions Asia Pacific Strategy*, Asian Geopolitics Special Report, CLSA Asia-Pacific Markets: 1-31. P9-10
- ⁵⁸ Wang, L. (2006). "The East Energy Diplomacy of Russia and the Sino-Russia Energy Cooperation." *Modern International Relationship* 8: 8-20. P10
- ⁵⁹ Blagov, S. (2005). "Russia Walks Thin Line Between Japan and China " *Asia Times Online* Retrieved 6th June, 2007, from http://www.atimes.com/atimes/Central_Asia/GA05Ag01.html.
- Lo, B. and A. Rothman (2006). *China and Russia: Common Interests, Contrasting Perceptions Asia Pacific Strategy*, Asian Geopolitics Special Report, CLSA Asia-Pacific Markets: 1-31.
- ⁶⁰ The oil and gas potential of Caspian states is sizeable - estimated at up to 3 percent and 4 percent of the world total, respectively. The US Department of Energy estimated regional oil reserves ranging between 17 and 33 billion barrels, comparable to OPEC member Qatar on the low end and the US on the high end. By 2010, the countries of the Caspian region are forecast to produce between 3 and 4.7 mbd from roughly 1.6 mbd in 2002. The Caspian provides a diversified non-OPEC supply of oil which helps to maintain energy security brings the benefits of increased competition to the consumer and lessens the risk of political upheaval in one country or region significantly affecting supplies.
- ⁶¹ Boekestein, B. and J. Henderson (2005). *Thirsty Dragon, Hungry Eagle: Oil Security in Sino-US Relations*. IPEG Papers in Global Political Economy no. 21. P32-33
- ⁶² *China Daily*, June 22, 2006
- ⁶³ Zweig, D. (2005). "The Foreign Policy of a "Resource Hungry" State." RUSI presentation.
- ⁶⁴ The forecast potential gas reserves are 6-8 Tcm mainly because of the Caspian basin. However, alternative estimates are less optimistic: BP's data quoted 9 bn barrels of oil and 1.84 Tcm of gas. Virtually all of these reserves are located in the west of the country, where three major onshore fields - Tengiz, Uzen and Karachaganak - are located. In addition, the Kazakh sector of the Caspian Sea is believed to contain billions of barrels of undiscovered oil reserves.
- ⁶⁵ <http://www.rferl.org/featuresarticle/2006/12/1f638050-5f67-421b-952b-82219a5739cc.html>
- ⁶⁶ Kazakhstan's Expanding Cross-Border Gas Links: Implications for Europe, Russia, China and other CIS countries, Mehmet Ogutcu, CEPMLP Internet Journal, Volume 17 article 8, http://www.dundee.ac.uk/cepmlp/journal/html/Vol17/article17_8.php, 21 November 2006.
- ⁶⁷ Wu, K. and S. Han (2005). "Chinese Companies Pursue Overseas Oil and Gas Assets." *Oil and Gas Journal*.
- ⁶⁸ Boekestein, B. and J. Henderson (2005). *Thirsty Dragon, Hungry Eagle: Oil Security in Sino-US Relations*. IPEG Papers in Global Political Economy no. 21. P36
- ⁶⁹ Interfax (2006). "Nations Energy Changes name to CITIC Canada Petroleum." *Interfax China Energy Report Weekly VI* (3).
- ⁷⁰ Wu, K. and S. Han (2005). "Chinese Companies Pursue Overseas Oil and Gas Assets." *Oil and Gas Journal*.
- ⁷¹ Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P17 'CNPC is responsible for pipeline construction, and arrangement of financing.'
- ⁷² Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P18
- ⁷³ Kazakhstan: PM Reveals Revamp to Trans-Kazakhstan Gas Pipeline, Plans Tie-In to Turkmenistan-China Route, 27 February 2008, *Global Insight*
- ⁷⁴ Construction Kicks Off for Gas Pipeline Linking Turkmenistan to China, 31 August 2007, *Global Insight*
- ⁷⁵ Wu, K. and S. Han (2005). "Chinese Companies Pursue Overseas Oil and Gas Assets." *Oil and Gas Journal*. Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P17
- ⁷⁶ Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P16
- ⁷⁷ Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P17 'Russia has refused to allow Kazakh to buy a port and refinery complex in Lithuania, Russia also refused to expand the CPC pipeline.'
- Pala, C. (2007). "The 'Great Game' Goes on." *Petroleum Review*: 16-18. P17 'The government uses the anti-China rhetoric to intimidate CITIC group into deals for the benefit of the Kazakhstan. For example, CITIC has promised to build a refinery near

the Karazhambas field, which produces heavy crude, such a deal will help self-sufficiency of Bitumen for Kazakh. Which would otherwise go to China'

⁷⁸ Putin agreed in May 2007 with his counterparts from Turkmenistan and Kazakhstan to refurbish and build pipelines to boost gas supplies to Russia by 40 percent, an agreement, which could pre-empt a plan by the U.S. government to build a pipeline under the Caspian Sea, from Turkmenistan to Azerbaijan, bypassing Russia.

⁷⁹ Is the Shanghai Cooperation Organisation the 'rising beast in the East'?, Mehmet Ögütçü, Today's Zaman, 28 August 2007, <http://www.todayszaman.com/tzweb/detaylar.do?load=detay&link=120034&bolum=109>

⁸⁰ Eastward Orientation? Turkmenistan Signs Deal to Supply Gas to China, 4 April 2006, Global Insight

⁸¹ Boekestein, B. and J. Henderson (2005). Thirsty Dragon, Hungry Eagle: Oil Security in Sino-US Relations. IPEG Papers in Global Political Economy no. 21. P38

⁸² Interfax (1-7 Apr, 2006), Volume V, Issue 13

⁸³ A severe cold snap in Central Asia has prompted Uzbekistan to reduce gas exports to southern Kazakhstan in February 2008. Turkmenistan, the other main gas exporter in Central Asia, has reduced gas exports to Russia. Ashgabat has also cut off supplies to its other main export customer, Iran, since 30 December, citing operational problems, although Iran is accusing Turkmenistan of withholding gas supplies in an effort to force Iran to pay more for imports.

⁸⁴ Petroconsultants, October 1998, p.51. G. Kemp, R. Harkavy, Strategic Geography and the Changing Middle East (Washington, DC: Carnegie Endowment for International Peace, 1997), p. 131.

⁸⁵ Xiaojie Xu, "The Oil and Gas Links between Central Asia and China: A Geopolitical Perspective", OPEC Review, Vol. XXIII No.1, March 1999, p.48.

⁸⁶ "World Oil Transit Chokepoints", Energy Information Administration, U.S. Department of Energy, April 2004.

⁸⁷ The U.S. navy dominates the Sea-Lanes of Communications (SLOCs) in Asia and the Indian Ocean through which a growing share of China's oil supply will flow in the future. This aggravates fears over what the Chinese view as U.S. global "hegemony" and increases the sense of vulnerability over oil and gas flows vital to China's long-term strategic room for maneuver, its economy, and its social stability.

⁸⁸ Even if stellar economic growth continues, the Chinese may find attractive alternatives to oil: the country is extremely rich in coal and natural gas, and, since it has not yet invested heavily in an expensive petroleum infrastructure, it could develop ways to harness fuels produced from coal and biomass (both of which it has in abundance) and thus overcome its dependence on imported oil altogether. For the time being, the trend lines are what they are: oil reserves elsewhere are being depleted faster than in the Middle East, and before too long that region will contain the last remaining reservoir of cheaply extractable crude. If each barrel the US needs is also sought after by China, a superpower conflict in the world's most unstable region can once again become an omnipresent danger.

⁸⁹ China's Energy Future: The Middle Kingdom Seeks Its Place in the Sun, Robert E. Ebel, James (FWD) Schlesinger, 2005

⁹⁰ Asian nations to set up energy co-op scheme, Xie Ye, China Daily, 22 April 2005

⁹¹ Christoffersen, G. (2004). Angarsk as a Challenge for the East Asian Energy Community. Northeast Asian Security: Traditional and Untraditional Issues, Renmin University of China, Beijing, China, P3
Also, Japan