The Prospective Interdependency of China’s and Canada’s Energy Security

by Daniel MacIsaac

Among the world’s energy commentators, there is unanimity about just one aspect of energy security—that it is central to contemporary global economics and politics.

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Introduction

Energy security is central to contemporary global economics and politics because countries use it to support their national power. Net energy-consuming countries demand “...an adequate, reliable and affordable supply of energy and feel vulnerable if this cannot be assured.” Furthermore, net energy-supplying countries seek reliable and profitable energy sales to maximise the benefits from their resources.

Therefore, countries enact polices to achieve energy security by protecting the energy supply chain. Specifically, they attempt to gain and protect investment capital, technical competencies, natural resources, and access to international markets and distribution networks, while mitigating downstream effects on the environment and health. From differing perspectives and through a variety of means, both net-consuming and net-producing countries seek to enhance their energy security to sustain their development and to enhance their economic power.

Although their supply and demand perspectives differ, China and Canada share energy security concerns. “Energy security has become a big concern in China,” particularly since it became a net energy importer in 2009, and the world’s largest energy consumer in 2010. However, China lacks adequate and affordable domestic oil supplies to fuel its economy, so it is vulnerable to external threats while importing oil across contested lines of communication. Concurrently, Canada is concerned about reliable and profitable sales of its abundant oil. So, although Canada has benefited from selling 99 per cent of its oil exports to the US, the Chinese oil market offers more growth potential than the shrinking US market.
This brief article argues that selling Canadian oil to China will improve both nations’ energy security. The arguments to support this position are that China will benefit from importing oil from secure sources across secure lines of communication, Canada will benefit from access to China’s growing oil market, and Canadian oil sales will enhance both countries’ domestic security. The article concludes by emphasizing that increased energy independence between Canada and China may also be useful in potentially mitigating any future Sino-Western security tensions.

China needs secure external oil supplies

China, hungry for more-secure oil reserves to power its gigantic economy, is only too happy to work with the Canadians.8

China’s soaring energy needs have generated anxiety among its security strategists, who seek to improve energy security by augmenting China’s domestic sources with adequate, reliable, and affordable imported oil.9 In the absence of sufficient domestic supplies, China began importing oil in 1993, and became the world’s top oil importer in late-2013.10 Analysts forecast that from 2013 to 2040, Chinese oil consumption will double in order to fuel its domestic development and growing global economic power.11 Its oil imports are expected to increase accordingly, from 6.2 to 14.4 million barrels daily, so that by 2040, it will need to import 72 per cent of the oil it consumes.12

Because this increasing dependence upon imported oil increases its vulnerability to global market insecurity, China is continuing “…to secure supplies through progressive energy diplomacy and through turning its nationally owned energy companies into internationally operating companies.”13 Although a realist vision of international relations infers that consuming countries will seek to support their national interests by controlling their oil supplies, the presence of other players will force a more constructivist approach to coordinating oil demands and supplies. Importantly, “…both China and the United States need stable energy supplies at reasonable oil prices to sustain their economic growth.”14 As China’s dependence upon imported oil increases, it will increase its engagement in the global oil market in order to secure reliable supplies.

Although China currently imports adequate and affordable oil supplies, the unreliability of many of its suppliers and the perceived insecurity of transiting the Malacca Strait challenges its
energy security. In 2013, most of China’s oil imports came from the Middle East. However, contract disputes and international sanction constraints on Iran, related to its nuclear program, made Iranian oil supply unreliable. Concurrently, Iraqi infrastructure limitations and political instability challenge its production output. Similarly, the 23 per cent of China’s imports from Africa have included intermittent supplies from security-challenged countries, such as Sudan, South Sudan, Angola and Libya.

Additionally, reliance upon transiting the Malacca Strait challenges the security of oil imports from the Middle East, Africa, and, to a lesser extent, South America. China is vulnerable to risks of external control because 90 per cent of its oil imports transit this strait, with “…Chinese military planners [noting] the possibility that during a conflict America could blockade the straits to stop energy.” Since the loss of their oil imports would effectively halt the Chinese economy, China has enacted a range of policies to address this vulnerability. To increase energy security, China’s national oil companies are diversifying their suppliers through overseas investments and pipeline development, while the government is steadily improving the relevant capabilities of the navy.

Such initiatives are costly in terms of both monetary and diplomatic capital. For example, Chinese leaders see the Sino-Myanmar oil pipeline as being of considerable importance to its energy security. However, the eight per cent of oil imports this project will initially divert from the Malacca Strait will proportionally decrease in significance after two years of real import increases. Consequently, China has yet to reduce the perceived insecurity of importing approximately 1.7 million barrels daily from security-challenged countries, and moving 90 per cent (5.6 million barrels daily) of its oil imports through the Malacca Strait.

Clearly, China needs additional reliable and secure sources to achieve energy security. In view of its increasing demands for imported oil and the risks associated with many of its current suppliers and transportation routes, “…the diversity and reliability of China’s [existing] foreign oil sources are questionable.” Faced with the realisation that “…energy security is critical to economic growth, military defence, social development, poverty reduction, national security and environmental security,” one obvious option would be for China to import a greater proportion of its oil from Canada.

**Canada needs access to China’s growing market**

If we’ve learned anything from the events in Ukraine, it’s that energy security sends signals across borders.

Selling Canadian oil to China would improve both countries’ energy security. Canada’s abundant natural resources make it one of the world’s five largest energy producers, and a net exporter of most energy commodities. As of 2011, Canada was the world’s sixth-largest oil producer and it controlled the third largest quantity of proven oil reserves. The US Energy Information Administration (EIA) forecasts that if output continues to meet expectations, Canadian oil production will grow from 3.7 to 6.6 million barrels daily by 2035, while domestic consumption will remain stable at 2 million barrels daily. According to the findings of an influential study group, “…the rising price of oil has made ‘supplier’ countries like Canada into possible ‘economic powers.’” Those opportunities will not be realised, however, if the energy supply chain’s components do not enable reliable access to profitable markets.

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A seagoing freighter enters the inner harbour of Vancouver.*
At present, 99 per cent of Canadian oil exports are supplied to the US. In 2012, Canada supplied 28 per cent (or 2.1 million barrels) of the 7.4 million barrels of oil the US imported daily. However, although Canada is “the principal source of US energy imports,” that market is mature and may decline as the US attempts to become oil self-sufficient, particularly as a result of its recent success in ‘fracking’ shale oil, but also because of improvements in efficiency and shifts to other energy sources. The EIA projects US oil imports to shrink to 6.8 million barrels daily by 2021, and the International Energy Agency (IEA) “…projects a continued decline in US oil imports to 2035, largely because of increasing domestic … production.” Although EIA and IEA forecasts differ somewhat, Canada has a real need to find reliable access to non-US markets for the additional oil it will likely be producing by 2035.

In contrast to the challenges facing Canadian oil exports to the US, Chinese GDP growth will present opportunities for oil markets worldwide. Although estimates vary, analysts agree that China’s GDP will grow at a faster rate than those of mature economies for at least the next decade, including that of the US. For example, China’s GDP is forecast to grow at 5.9 per cent annually from 2014 to 2019, and 3.5 per cent from 2020 to 2025, whereas US GDP is forecast to grow at 2.4 per cent from 2014 to 2019, and 1.7 per cent from 2020 to 2025. As a result, and even if the forecasts of the US becoming more oil self-sufficient prove erroneous, slow US GDP growth will not be sufficient to absorb Canada’s potential oil surplus.

Since the key to Canada’s energy security is reliable access to profitable markets, it must look to diversify its oil export markets to include China. Importantly, Canada has the proven oil reserves to supply up to 4.6 of the 14.4 million barrels of oil China will need daily by 2040.

**Energy security benefits to China and Canada**

If you’re looking at Canada through the lens of the Chinese, the US has great oil and gas reserves, but so does Canada, and Canada, on a relative basis, is more open for business. A further argument for selling Canadian oil to China is that improved energy security will also enhance both nations’ domestic security.

From China’s perspective, importing secure oil from Canada could positively contribute to assuring the adequate, reliable, and affordable energy supply needed to sustain its growing economy and development. Canada’s capital investment, technical competencies, abundant natural resources, domestic infrastructure and security apparatus can reliably deliver oil to China’s ports. Canada’s oil and gas producers have unparalleled extraction and pipeline technical expertise, with Alberta considered to be the “… epicentre of high-end technical oil and gas expertise.” China has previously illustrated its confidence in Canadian technical competencies by purchasing the Canadian company that constructed the Kazakhstan-China oil pipeline.
The most dangerous threats to energy infrastructure are deliberate sabotage or terrorist attacks. However, Canadian authorities have to date identified no credible criminal or man-made threats to extracting, producing, and exporting oil from Canada. Canada’s current shortage of pipelines to export from its Pacific coast ports will be redressed when pipeline capacity increases by 1.4 million barrels daily by 2017.

Sea transportation of Canadian oil also involves less risk to China than do most of its current oil suppliers. Canada’s Pacific coast ports are closer to China than virtually all other ports currently exporting oil to China. Canadian oil being transported across the Pacific Ocean, which China already uses to transport 25 per cent of its exports to North American markets, would travel through more secure waters than the Strait of Hormuz and the Strait of Malacca, and the sea lanes through the Indian Ocean and the East and South China Seas, which transport 90 per cent of China’s current oil imports.

The energy security benefits China would derive from consuming Canadian oil may also enhance China’s domestic security. The oil would likely cost China less diplomatically, militarily, and in energy infrastructure development than would commensurate imports from less secure countries. It would also enable China’s government to reinvest the difference in other areas of national priority, such as the domestic social and security services necessary to enhance China’s development and the living standards of Chinese citizens, which are fundamental to the Chinese Communist Party’s legitimacy.

At the same time, selling oil to China would improve Canada’s energy security and economy, thereby enhancing its domestic security. Canadian government analysts estimate the oil sector may contribute more than C$3.5 trillion to its economy over the next 25 years, provided the oil can get to profitable markets. The revenue could be used to meet government priorities, such as reducing taxes, reducing the deficit, supporting infrastructure projects, and delivering a variety of programs and services to the public. Some could also be used to invest in the infrastructure and security services required to ensure the security of its oil infrastructure, control access to resources within Canada’s territory and exclusive economic zone, and enhance safe navigation in those sea lanes needed to support Canada’s international trade.

In summary, China’s and Canada’s domestic security would both stand to be enhanced by the energy security resulting from...
the selling of Canadian oil to China. China needs a reliable oil supplier to reduce its dependence on security-challenged countries and lengthy shipping routes through constrained and contested waters. An assured and reliable supply of oil from Canada would enable China to better invest in the services required to further develop the nation, while Canada may choose to use its enhanced energy security to further develop the capabilities it needs to sustain its domestic security.

**Conclusion**

Selling Canadian oil to China has the potential to improve both countries’ energy security. China’s energy security would benefit by the addition of a secure supplier, able to satisfy its demand, while decreasing the proportion of oil supplies imported from weak countries across long, contestable lines of communication. Canada’s energy security would be improved by profitable access to China’s growing oil market. Canada’s traditional oil export market in the US is mature and will likely decline as the US attempts to become self-sufficient, thus China’s growing oil markets would provide Canada with better economic opportunities.

Canadian oil sales could be expected to enhance both nations’ domestic security. Canadian oil could facilitate Chinese energy security with the least burden to China, complying with Wolfers’ theory that “…nations will be inclined to minimize these [security] efforts, keeping them at the lowest level which will provide them with what they consider adequate protection.” Holistically, oil from Canada may also be cheaper than other sources, allowing China’s government to reinvest the difference in other areas of state priority, necessary to enhance development and domestic security.

For its part, Canada would clearly benefit by being able to use revenue from oil sales to China to meet broad government priorities, and set the conditions for Canada to secure its Pacific, Arctic, and Atlantic Ocean air, land, sea, and sub-surface territories and exclusive economic zones, thereby enhancing Canada’s energy and domestic security. Not being a ‘great power,’ Canada should pragmatically temper its ideals of international influence with a Hamiltonian approach of doing what needs to be done, using its oil resources to enhance its energy security and to sustain and grow its economic power.

Further studies could consider issues relating to the prospective energy interdependence between the two countries, and particularly, the extent to which China’s part dependence upon a country so closely integrated with China’s greatest competitor may also be useful in potentially mitigating any future Sino-Western security tensions.

The downtown core of Vancouver, ‘Gateway to the East,’ and the Lion’s Gate Bridge rise above a morning fog.
1. This is an edited version of a paper, entitled “Oil’s Contribution to Chinese and Canada’s Energy Security,” submitted by the author while attending the Defence and Strategic Studies Course at the Centre for Defence and Strategic Studies at the Australian Defence College in 2014.


4. Having considered the need to transition to a low-carbon energy economy to reduce the negative effects of inefficiency and pollution, academics have recently defined energy security ‘as the availability of energy at all times in various forms, in sufficient quantities and at affordable prices, without unacceptable or irreversible impact on the economy and the environment.’ The impact upon the environment is an important global issue with respect to energy security. States should also consider Aboriginal land ownership when authorizing energy resource extraction and land-based transportation routes from remote locations. See, for example, Vlado Vivoda, Energy Security in Japan: challenges after Fukushima, (Farnham UK: Ashgate, 2014), p. 5.


7. Analysis of the Chinese and US economies indicates that their dependence upon non-renewable resources for energy production will not significantly decrease. In 2011, China generated 93 per cent of its power from non-renewable sources. In 2012, the US generated 91 per cent of its power from non-renewable sources. Although technological advancements will slightly increase the proportion of power China generates from renewable resources, its real demand for non-renewable resources is expected to increase until at least 2040. EIA forecasts total US energy consumption to increase only at a rate of 0.4 per cent from 2012 to 2040. EIA forecasts that concurrent US oil production increases will shrink the US oil import market. US EIA, “US Total Energy Supply, Disposition and Price Summary,” available at <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=0-AEO2014&table=1-AEO2014&region=0-0&cases=full2013full-d102312a,ref2014-d102413a>, accessed 1 May 2014; also, US EIA, ‘China.’


11. From 2013 to 2040, China’s oil consumption will increase from 10.7 to 20 million barrels daily. By 2040, its overall energy consumption will represent one-quarter of the world’s annual energy consumption and be twice that of the next highest country. US EIA, “World Total Primary Energy Consumption by Region 2013,” available at <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=IEO2013&subject=0-IEO2013&table=1-IEO2013&region=0-0&cases=Reference-d041117>, accessed 30 March 2014. The following International Energy Agency (IEA) report drew on an Organisation for Economic Co-operation and Development (OECD) forecast showing China’s GDP per capita experiencing a compound average annual growth rate of 5.5 per cent from 2011 to 2035. This is the highest of all the selected countries and almost four times the 1.6 per cent growth rate forecasted for OECD countries. The growth in GDP per capita will increase demand for goods that require energy to use and to produce. IEA, “Southeast Asia Energy Outlook: world energy outlook special report,” Figure 1.6, p. 35.

12. This real demand increase also represents an increase from 58 to 72 per cent of oil demand being imported. US EIA, “China.”

13. For example, in 2013, the China National Offshore Oil Corporation spent $15.1 billion to purchase the Canadian oil company, Nexen. Xu, “Chinese Responses to Good Energy Governance,” p. 161.


15. The 52 per cent of China’s oil imported from the Middle East included 19 per cent from Saudi Arabia, 9 per cent from Oman, 8 per cent from Iran, 8 per cent from Iraq, 4 per cent from UAE, and 3 per cent from Kuwait. US EIA, “China.”

16. These included 14 per cent from Angola, 2 per cent from Congo, and intermittent imports from Sudan, South Sudan, and Libya. US EIA, “China.”

17. In 2013, 10 per cent of China’s oil imports were from the Americas, including 6 per cent from Venezuela and 2 per cent from Brazil. US EIA, “China.” The longest trade route for very large crude carriers (VLCCs) is between Venezuela and China, followed by vessels sailing between the Middle East and the United States. VLCCs usually combine the two trips to reduce empty travel but decreasing US imports from the Middle East will increase the cost of shipping oil from Venezuela to China. Issac Arnsdorf and Rob Sheridan, “Tankers Worst Since 1997 in Africa Oil Slowdown to China,” in Bloomberg website, 4 September 2013, available at <http://www.bloomberg.com/news/2013-09-02/tankers-worst-since-1997-as-africa-oil-to-china-slow-s-fight.html>, accessed 27 April 2014.


21. Once open in 2015, this pipeline’s capacity will be 400,000 barrels daily. Considering that 4.5 million barrels of China-bound oil transited the Malacca Strait daily in 2013, at capacity, this pipeline will only divert a maximum of 8 per cent of Malacca-bound oil. Sarma and Reinert state, “China sees this project as one of huge importance to its energy security,” but the resulting improvements to China’s energy security will be minor and proportionally decrease as their oil imports increase. The pipeline will not improve security because ships bound for its terminal will still move through waters controlled by the US and Indian navies, and the pipeline will give Myanmar leverage and make the oil vulnerable to attack by state or non-state actors. Sarma and Reinert, “The Malacca Dilemma.”

22. China imported approximately 504,000 and 224,000 barrels daily from Russia and Kazakhstan, respectively, in 2013, via relatively secure pipelines. US EIA, “China.”


27. US EIA, “Canada.”


30. US EIA, “Canada.”

31. US EIA, “Canada.”


34. Michael Black, quoted in Handley, “In Canada, China Sees Greater Opportunities to Secure Oil Reserves.”

35. Handley, “In Canada, China Sees Greater Opportunities to Secure Oil Reserves.”


38. Distance and time scenarios show that Canadian Pacific ports are closer to China than almost all ports currently used to export oil to China. For example, China’s southern South China Sea oil port of Guangzhou is 10,158 kilometres and 16 days away from Kitimat, Canada; 9,926 kilometres and 16 days away Doha, Kuwait; 9,638 kilometres and 15 days away from Damman, Saudi Arabia; and is further from all other ports (Iraq, Angola, Sudan, South Sudan, Congo, Libya, Venezuela and Brazil) currently used to import oil to China. The Zhenhai Oil Port mid-way along China’s coast is closer to Kitimat than all of the ports currently used to export oil to China. SeaRates.com, “Distances and Time,” available at <http://www.searates.com/reference/portdistance/>, accessed 2 May 2014.


40. From 2006 to 2010, the oil sector paid an average of $22 billion per year to Canadian governments. The Government of Canada, Natural Resources Canada, “North America Tight Light Oil.”


42. Alexander Hamilton (1755-1804) was a “…founding father of the United States” and highly-reputed political theorist: see <http://en.wikipedia.org/wiki/Alexander_Hamilton>, accessed 24 June 2014.