

ENERGY SECURITY AND THE ASIA-PACIFIC

Course Reader

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Chapter 8

China's Coming Decade of Natural Gas?

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EXECUTIVE SUMMARY

This essay examines the outlook for China's gas market, the implications for the country's sense of energy security, and the possible global impacts of China's liquefied natural gas (LNG) policies.

MAIN ARGUMENT

Through 2020, China intends to undertake profound shifts in its energy profile. As part of this process, natural gas stands to benefit as the country seeks to move toward a cleaner energy mix and shift away from coal. Yet as the government continues to encourage the use of gas, the potential scale of China's demand may be beyond expectations. At the same time, it appears that domestic gas production will be insufficient and that the country's much-heralded unconventional gas development will not be easily achieved over the next five to ten years. These broad dynamics bode well for significant increases in gas imports in the interim, particularly of LNG. Given the scale of China's energy demand, the growing appetite for gas will have profound effects on both gas markets and geopolitics more generally.

POLICY IMPLICATIONS

- China's dependence on natural gas imports could easily reach 50% over the next five to ten years. To promote a greater sense of energy security, Beijing is likely to prioritize pursuing a diversified base of stable and credible international suppliers. Beijing currently has a number of options that meet this criterion. This will likely also make its gas geopolitics different from its oil bids, in which China relied more on suppliers in so-called frontier markets with heightened political risk.
- Although China generally favors overland pipelines for gas supplies, it may lean more toward LNG imports. Price considerations, the desire to promote LNG-related infrastructure to bolster the Chinese economy, and concerns about the outlook for Russian and Burmese pipeline supplies may all favor China increasing its reliance on LNG.
- While the economics of U.S. LNG exports to China make sense in the current low-price environment, the prospects for this trade remain doubtful. Even if exports to China were to be approved by the U.S. Department of Energy, Beijing may view buying these supplies as fostering an unacceptable level of energy dependence on the U.S.

China's Coming Decade of Natural Gas?

Damien Ma

Through 2020, China intends to make profound changes to its energy profile. This shift will necessarily entail a recalibration from a production-intensive economy to a more consumption-oriented one. The country's emphasis on production and rapid industrialization over the last decade has had significant knock-on effects on Chinese energy consumption, both in terms of scale and in the type of resources consumed. Industry in China continues to be responsible for the vast majority of energy consumption—primarily in the form of coal—and for most of the associated environmental degradation and emissions from consuming fossil fuels. In short, China's current growth model has an investment bias toward heavy industry and massive infrastructure, largely powered by coal, that worsens environmental degradation and puts undue pressure on limited resources. Moreover, such a growth model itself is unsustainable and will require a transition to a less energy-intensive and more consumption-driven economy. If this so-called rebalancing is to succeed, the transition to a more sustainable phase of growth will require China to begin reducing support for heavy industry and slowing the country's overall growth, which should have the concomitant benefit of reducing the overwhelming dominance of coal in its energy mix.

As part of this process, natural gas stands to gain an increasing share in China's energy mix. This resource is attractive to China for many of the same reasons that it is attractive to the United States. First, even though China has invested heavily in renewable and nuclear energy, by 2015 non-fossil fuels will still only constitute about 11% of its total primary energy consumption

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based on current targets.¹ This makes natural gas a “bridge fuel”—that is, a less carbon-intensive fuel than coal and oil—to facilitate the country’s transition toward cleaner sources of energy. Second, gas is cheap and abundant, at least for the time being. Third, there appear to be numerous willing suppliers, which reinforces China’s sense of supply security. Finally, China believes that over the long term it can replicate the U.S. model of domestic unconventional gas production to dramatically enhance its energy security and buttress its long-standing aversion to dependence on foreign suppliers.

Yet as the government continues to encourage the use of gas through policies and incentives, the potential scale of China’s gas demand may exceed the expectations of current government and some industry projections. At the same time, it appears that domestic gas production will be insufficient, particularly as the much-heralded unconventional gas–production explosion in China will not be easily achieved over the next five to ten years. These broad dynamics bode well for significant increases in gas imports in the interim, particularly of liquefied natural gas (LNG). Domestic drivers and policy incentives such as pricing reform are likely to reinforce the appeal of LNG in the medium term. In addition, pipeline gas alone is not likely to satiate anticipated Chinese demand. The enormity of China’s appetite for LNG will have profound effects on gas exporters, global prices, and even geopolitics.

Rebalancing the Chinese economy to promote sustainable development will necessitate a simultaneous rebalancing of the country’s energy profile. The Chinese government has sent clear signals that it wants to close the curtains on the “golden era” of coal, which could usher in a new period of growth in gas consumption. In the likely absence of a domestic gas boom in China, major gas exporters stand to benefit from growing Chinese demand. Indeed, there is little doubt that, as far as energy is concerned, whatever China does can no longer be contained within its borders. Natural gas will be no exception.

This essay will briefly examine the outlook for China’s gas market and how its development could affect the country’s sense of energy security both at home and beyond its borders. The first two sections consider the Chinese government’s efforts to realize a less coal-intensive economy and the broad context in which gas consumption will increase as a result. The third section then discusses the implications of rising gas consumption for

¹ State Council of the People’s Republic of China (PRC), “Guowuyuan guanyu yingfa nengyuan fazhan ‘shier wu’ guihua tongzhi” [Notice on State Council’s Twelfth Five-Year Plan on Energy], January 1, 2013, http://www.gov.cn/zwggk/2013-01/23/content_2318554.htm.

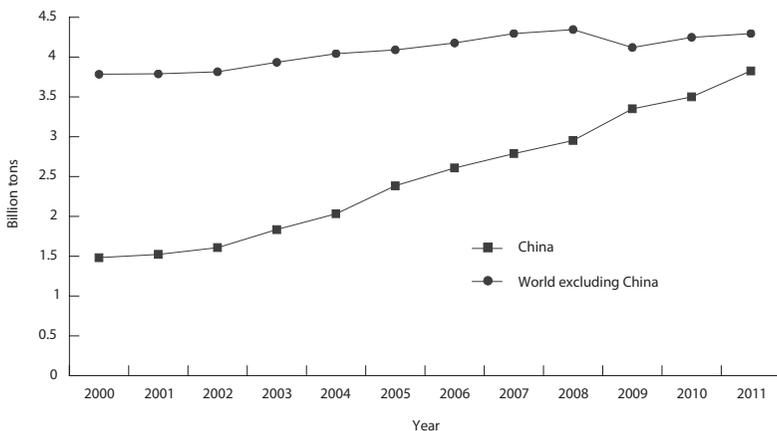
Chinese energy security, as well as the geopolitical dynamics that could play out as China takes actions to secure gas supplies. Finally, the essay offers some conclusions about China's energy conditions.

Less Coal, More Gas

It is worth reiterating that China's economic model has determined its energy consumption. Soon after the country entered the World Trade Organization in 2001, it began an unprecedented expansion of infrastructure and fixed-asset investments that also led to today's property sector boom. To meet these macroeconomic demands, China put in place a sprawling heavy industry (e.g., steel, aluminum, and cement) that is unrivaled in the world in terms of scale. The industry largely ran on coal and depended on imported commodities such as iron ore and coking coal to operate. By 2011, Chinese coal consumption had risen 250% since 2000, gobbling up nearly as much coal as the rest of the world combined (see **Figures 1** and **2**).²

Indeed, coal's presence in China's energy mix is formidable in large part because it is the only indigenous fuel resource that the country has

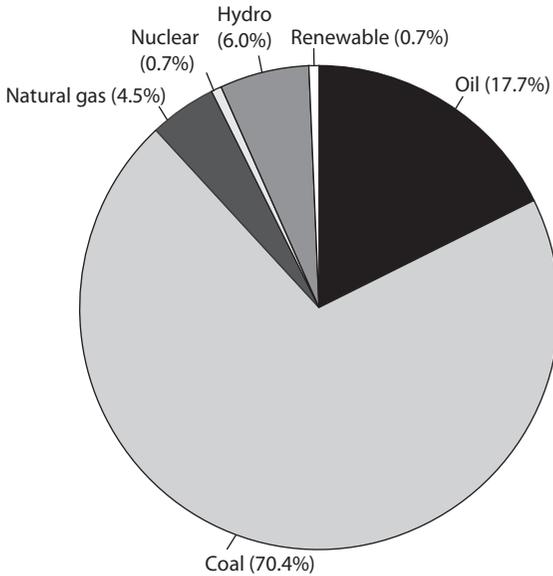
FIGURE 1 China's coal consumption



SOURCE: U.S. Energy Information Administration (EIA).

² "China Consumes Nearly as Much Coal as the Rest of the World Combined," U.S. Energy Information Administration (EIA), January 29, 2013, <http://www.eia.gov/todayinenergy/detail.cfm?id=9751>.

FIGURE 2 Chinese primary energy consumption, 2011



SOURCE: BP plc, “BP Statistical Review of World Energy 2012,” June 2012.

in abundance. That abundance of supply has meant relatively cheap coal prices compared with other fuels—though that is changing too—which is an important factor in a developing country where the vast majority of citizens have little tolerance for high energy costs. Yet abundance of supply is increasingly not the government’s only consideration in shaping its national energy policies. Coal’s complicity in severe environmental pollution, high carbon emissions, and significant health hazards has been amply documented.³ These negative externalities, as well as the government’s inability to meet its own targets for reducing carbon intensity if reliance on coal remains very high, are strong reasons for rapidly diversifying away from coal. In fact, a string of recent policies on coal, including production limitations, imminent resource taxes, and binding targets for reducing

³ See, for example, Bernhard Zand, “The Coal Monster: Pollution Forces Chinese Leaders to Act,” ABC News, March 9, 2013, <http://abcnews.go.com/International/coal-monster-pollution-forces-chinese-leaders-act/story?id=18677198>.

carbon intensity, all imply that the Chinese government intends to constrain the use of this resource.⁴

A sustained shift away from coal could well give rise to a golden era of natural gas for China, as gas consumption is expected to grow significantly. This is precisely what has been outlined in China's twelfth five-year plan on energy. At the macro level, China seeks to more than double its gas consumption from about 107.5 billion cubic meters (bcm) in 2010 to roughly 260 bcm in 2015, according to the National Development and Reform Commission (NDRC).⁵ This would result in natural gas rising from around 4% of primary energy consumption to roughly 8%.

Several demand drivers are expected to support this growth. The residential, power, and transportation sectors will support increased gas consumption as part of China's rapid urbanization and the expansion of an urban middle class that increasingly prefers cleaner fuel. For the power sector, in particular, gas-based power generation is expected to more than double in absolute terms, although it will still be miniscule relative to other fuels used in the power sector. Still, by 2015 China could potentially derive more electricity from gas than from nuclear power.

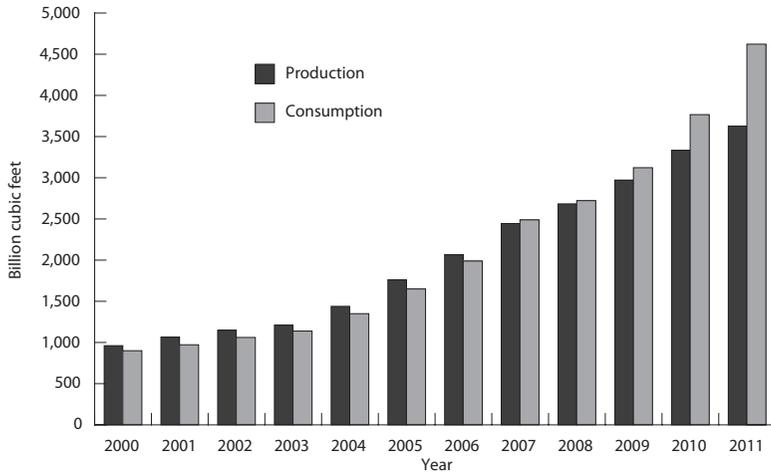
Domestic gas production, on the other hand, is expected to considerably lag behind the rise in demand, as has been the case over the last several years. Domestic demand spiked in the late 2000s, perhaps even catching the Chinese government off guard (see **Figure 3**). In recent years, consumption has been growing at roughly double the rate of domestic production. Preliminary estimates from the China National Petroleum Corporation (CNPC) state that China's 2012 gas consumption was 147.5 bcm (up 13% year-on-year), while production reached only 107.7 bcm (up 6.5% year-on-year).⁶ The mismatch between supply and demand has meant that China has increasingly relied on the global market for gas supplies—buying gas from countries ranging from Australia to Turkmenistan—to the point that it now relies on foreign countries to supply nearly 30% of its gas.

⁴ “Meitan ziyuanshui gaige jian zai xian shang, nian nei huo jiang tuichu congjia jizheng” [Resource Tax on Coal Imminent, Moving to a Value-based Tax within the Year], Xinhua, June 9, 2013, <http://energy.people.com.cn/n/2013/0609/c71890-21799802.html>. The latest mood within the coal industry seems to be one of resignation, with businesses openly lamenting the end of the “golden era” of coal in China. See Ji Beibei, “The Golden Era Over for Coal Mines and Traders, Analysts Say,” *Global Times*, June 6, 2012, <http://english.peopledaily.com.cn/90778/7837024.html>.

⁵ Other estimates from the National Development and Reform Commission put Chinese gas consumption at only 230 bcm by 2015, and future revisions to the target may be expected. See, for example, NDRC, “Tianranqi fazhan shier wu guihua” [Twelfth Five-Year Plan on Natural Gas], <http://zfxgk.nea.gov.cn/auto86/201212/W020121203312244945303.pdf>.

⁶ “Woguo tianranqi duiwai yicundu jiang da 32%, gongxu xingshi zongti pianjin” [China's Natural Gas Import Dependence to Reach 32%, Supply to Remain Relatively Tight], *Economic Observer*, February 4, 2013, http://www.ce.cn/cysc/ny/gdxw/201302/04/t20130204_21332608.shtml.

FIGURE 3 China's natural gas production and consumption, 2000–2011



SOURCE: EIA, “International Energy Statistics,” April 22, 2013.

Strategies and Policies for Ensuring Gas Security

Because being a net gas importer is a relatively new role for China, Beijing has scrambled to react to this development and ensure the country's energy security in a new realm. For instance, it has needed to build transnational pipelines and LNG terminals to receive exported gas and accommodate increasing import volumes. Recent history exhibited a similar dynamic when China became a net oil importer in the mid-1990s. The government's growing concern over the security of the oil supply led to a “going out” strategy that took many of China's state oil giants to Africa, the Middle East, and South America. With its rate of dependence on oil imports now approaching 60%, China has stakes in various regions throughout the world due to its energy interests. In some cases, these interests reside in places that the Chinese government would prefer to avoid or for which it receives condemnation from global public opinion. But central government policies guiding overseas investments over the last decade were largely reactive and tended to lag behind the economic reality of growing energy demand in China. The same judgment, in time, may apply to China's expanding gas interests. But for now, and because it started from a low base, the country has diversified its suppliers enough to avoid being entangled in gas politics to the extent that it has been on the oil front. Natural gas could easily reach

50% import dependence, especially over the next five to ten years when China's domestic production is expected to persistently lag behind demand. Although the Chinese government estimates that domestic production will be around 170 bcm by 2015, this goal seems overly ambitious given that production stood at just 108 bcm in 2012. To hit that target in three years will require growth rates—at least 15% a year—that are much higher than recent norms. Those who hope that Chinese unconventional gas production will come to the rescue will likely be disappointed over the next few years. Even as Beijing unambiguously backs the development of domestic resources such as coalbed methane and shale gas, their production is unlikely to make a material difference over the next three to five years.⁷ Both sectors are beset with problems that make it difficult to achieve production targets.⁸

As for shale, in particular, the bidding rounds for awarding exploration blocks continue to hit snags.⁹ Moreover, many Chinese state and private companies lack the technological expertise to properly conduct horizontal drilling and fracking and require partnerships with foreign entities or acquisition of foreign technology. Additionally, although China technically holds shale reserves that are estimated to be more than 1,000 trillion cubic feet, it is not clear that all these resources are economical to explore and develop.¹⁰ For instance, economists at China National Offshore Oil Corporation (CNOOC) estimate that it costs around \$15 million to develop a single well. To reach the production target of 60–100 bcm by 2020, twenty thousand wells would need to be drilled at a price tag of approximately \$350 billion. Furthermore, since the government still controls gas prices, CNPC estimates that it could lose about \$0.10 for every cubic meter of shale gas.¹¹ Given the large upfront capital investments required, uncertainty over adequate returns on investments would naturally give companies pause, even state-owned oil giants flush with cash.

⁷ For instance, the Chinese government has set a target for reaching 30 bcm of coalbed methane and 6.5 bcm of shale production at the end of the twelfth five-year period. See NDRC, “Tianranqi fazhan shier wu guihua”; and NDRC, “Meicengqi (meikuang wasi) kaifa liyong shier wu guihua” [Twelfth Five-Year Plan on Coalbed Methane], December 2011, http://www.nea.gov.cn/131337364_31n.pdf.

⁸ The coalbed methane sector continues to face entry barriers and bureaucratic turf battles that have stalled meaningful production over the last few years. However, the central government has been willing to provide more incentives for the sector, possibly galvanizing more investment.

⁹ See Mavin Duncan, “China’s Bid for Shale-Gas Riches in Doubt,” *Wall Street Journal*, January 23, 2013, <http://online.wsj.com/article/SB10001424127887323539804578259243934254484.html>.

¹⁰ A map of China’s shale reserves is available from EIA and Advanced Resources International, Inc. See EIA, “World Shale Gas and Shale Oil Resource Assessment,” May 17, 2013, http://www.eia.gov/analysis/studies/worldshalegas/pdf/chaptersxx_xxvi.pdf?zscb=27504323.

¹¹ Pu Jun and Huang Kaiqian, “China’s Lofty Goals for Shale Gas Development Just Pipe Dreams, Experts Say,” *Caixin*, August 26, 2013, <http://english.caixin.com/2013-08-26/100574015.html>.

Thus, the current excitement over Chinese shale has primarily focused on potential rather than reality. Even those companies that have begun exploration, such as Sinopec in Sichuan, still remain in the preliminary stages of development. While the Chinese government genuinely aspires to replicate the shale gale that has proved so successful in the United States, whether it will be able to accomplish this is unclear in large part due to the unique constraints that face China—chief among them being inadequate technology and scarcity of water and land. For now, that China will even be able to hit its proposed 2015 production target seems unlikely, calling into question the credibility of its projections on a longer time horizon. Indeed, CNPC, the oil giant that owns significant shale blocks and has the biggest financial muscle, has apparently said that it hopes to achieve just 1.5 bcm of production by 2015, which is not even a quarter of the target set in the shale gas plan.¹²

Imports: By Land and Sea

The continued challenges and delays in China's development of shale gas should prove a boon for gas imports in the medium term. Already a major player in global gas markets, China currently has numerous choices when it comes to gas suppliers, including several countries that are not considered highly volatile (e.g., Qatar, Australia, Papua New Guinea, and Turkmenistan). This is unlike China's oil bids, which tended to be concentrated in frontier markets where conditions are far less predictable. Therefore, in the case of gas, China's energy security is not necessarily compromised by reliance on imports if the gas suppliers are dependable and stable, both economically and politically.

Structurally, the country's options for importing gas are limited to either pipeline imports or LNG. Thus far, Beijing has been committed to both options. Because pipelines and LNG both require enormous upfront capital to develop infrastructure, investment decisions are determined by China's own calculations weighing the strategic and economic costs and benefits of pipelines versus LNG imports and which can better accommodate Chinese demand.

¹² Jun and Kaiqian, "China's Lofty Goals."

Pipelines

Gas is delivered to China through the Turkmenistan-China pipeline (also sometimes called the Central Asia–China pipeline), which then connects to the gargantuan west-east pipeline (WEP) that sends gas from Xinjiang to the coastal provinces where demand is high.¹³ The WEP has several phases, with the first phase delivering gas to the Yangtze River Delta and the second to the Pearl River Delta in southern China. Both phases are now operational. This energy linkage to Turkmenistan aligns with China's broader Central Asia strategy. Beijing has methodically worked to enhance the region's economic integration with Chinese markets, with some Chinese policymakers even musing about rebuilding the historical Silk Road trade route that extended to Europe. Fully cognizant of the security role that Russia still plays in the region, China has deliberately focused on strengthening economic ties with Central Asia.

The other major planned pipelines are from Myanmar and Russia.¹⁴ The \$2.5 billion China-Myanmar pipeline has reportedly begun operations in 2013 and, once at full capacity, could deliver up to 12 bcm of gas to southeastern Chinese provinces, particularly Guangxi. This pipeline is designed to receive gas from the Middle East and Africa in order to bypass the Strait of Malacca, which proponents in China argue can reduce shipping costs and enhance security.¹⁵ With the pipeline now online, Beijing will need to manage an already shaky relationship with Myanmar that has been made all the more difficult as the country undergoes economic and political transitions.

The long-planned Sino-Russian pipeline from Siberia continues to be slowed by disagreement over the price Gazprom wants to charge for the gas. However, the realization of the pipeline may be closer now that Chinese president Xi Jinping made it a priority on his first visit to Moscow.¹⁶ If an agreement can be finalized, the pipeline is expected to eventually deliver more than 30 bcm of gas to northern China. A more tight-knit energy relationship would likely draw Beijing and Moscow closer strategically, given

¹³ "China President Opens Turkmenistan Gas Pipeline," BBC News, December 14, 2009, <http://news.bbc.co.uk/2/hi/asia-pacific/8411204.stm>.

¹⁴ Pu Zhendong, "China-Myanmar Oil and Gas Pipelines to Lower Energy Costs," *China Daily*, June 6, 2013, http://www.chinadaily.com.cn/cndy/2013-06/06/content_16574102.htm.

¹⁵ The inability of the Chinese navy to protect its shipments passing through the Strait of Malacca has been a long-standing concern for the Chinese government, which is preoccupied with energy security.

¹⁶ Erica S. Downs, "Money Talks: China-Russia Energy Relations after Xi Jinping's Visit to Moscow," Brookings Institution, April 1, 2013, <http://www.brookings.edu/blogs/up-front/posts/2013/04/01-china-russia-energy-relations-downs>.

that friction between the two sides might put at risk a major source of gas supplies to China. Moreover, because China seems to be rather interested in access to the Arctic shipping route, it has a stronger interest in maintaining at least a stable, if not cordial, relationship with Russia, a country that Beijing has long distrusted.

LNG

Yet while China generally favors overland pipelines for gas supplies because it feels that pipelines are more secure, it may begin to lean more toward LNG imports for several reasons. First, given the recent political transformations in Myanmar, Beijing may judge that the political risk is too high to expand pipeline investment in a country that is undergoing change, especially when other options exist for importing gas. The continued delays with Russia likewise may lead China to rethink the security of linking to a pipeline from its northern neighbor. Because the existing pipelines with other suppliers have capacity limits, any incremental demand increase will have to be met by importing LNG, whether China wants to or not.

Second, China may expand its LNG imports to support related economic and industrial goals. Investing in LNG means that the country must also invest in LNG ships. As a matter of industrial policy, the domestic development of the Chinese shipping industry is being encouraged, especially for the sector to specialize in advanced and super-size tankers.¹⁷ Chinese companies are certainly interested in building LNG tankers as well as container ships that can rival the likes of Valemax-class iron-ore ships. Increasing reliance on LNG imports would also offer a strong incentive to the domestic shipbuilding industry to earn market share in these high-tech and high-value added transport vessels. China currently has five LNG carriers and intends to commission five more.¹⁸ Such moves could help rejuvenate a flagging domestic shipping industry.

Third, Beijing may lean more toward LNG imports in a number of cases because such imports are potentially cheaper than domestic LNG supplies. Although China does have small-scale LNG-production facilities, they are

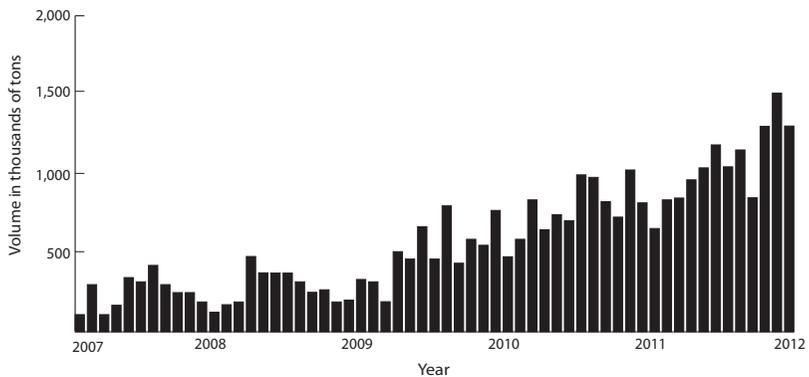
¹⁷ Gabriel B. Collins and Andrew S. Erickson, "LNG Carriers to Aircraft Carriers? Assessing the Potential for Crossover between Civilian and Military Shipbuilding in China," China SignPost, web log, December 19, 2010, <http://www.chinasignpost.com/2010/12/lng-carriers-to-aircraft-carriers-assessing-the-potential-for-crossover-between-civilian-and-military-shipbuilding-in-china>. See also Pu Jun and Wu Jing, "Will Valemax Ore Ships Sink or Swim in China?" *Caixin*, June 28, 2012, <http://english.caixin.com/2012-06-28/100405082.html>.

¹⁸ "Commercial and Strategic Opportunities for LNG in China," DNV Clean Technology Centre, October 2011, <http://www.norway.cn/Global/SiteFolders/webbeij/DNV%20-%20China%20LNG%20Final%20Report.pdf>.

located in western China and require long-distance transport, via truck or pipeline, to the eastern demand centers. Depending on the long-term contracts signed, it may be less costly to import LNG than to rely on transporting gas across the country.¹⁹ Furthermore, two of the drivers of gas demand—power generation and residential use—are likely to see the greatest growth potential in coastal China as the mega cities proceed with urbanization. According to one industry estimate, urban-residential gas demand will be more than six times commercial-sector gas consumption by 2030.²⁰ Relying on imported LNG in areas of population density and robust power demand makes more economic sense than depending on domestic supplies, especially if domestic prices are liberalized to converge with global prices.

Chinese companies have actually signed many more LNG contracts than they have built pipelines. As a result, Chinese oil companies have invested extensively in LNG terminals, with four currently in operation—along the coast in Fujian, Guangdong, Shanghai, and Jiangsu—and as many as fourteen planned terminals could become operational by 2015 (see **Figure 4**). According to CNPC estimates, LNG imports could reach

FIGURE 4 China's LNG imports



SOURCE: Reuters, based on General Administration of Customs data, February 21, 2012.

¹⁹ In fact, transport bottlenecks have been a major reason that China has been a net coal importer for the last several years. Coal imported into Guangdong from Australia has been cheaper than coal from Shanxi, for example.

²⁰ “Commercial and Strategic Opportunities for LNG in China” (presentation from Det Norske Veritas Pte Ltd., October 14, 2011), <http://www.norway.cn/Global/SiteFolders/webbeij/DNV%20-%20China%20LNG%20Final%20Report.pdf>.

16.5 million tons in 2013, an increase of nearly 15%.²¹ If the planned terminals all come online as expected, China should have an import capacity of 87 million tons, more than five times the current level of LNG imports.²²

The Politics of Gas

Just as dependence on oil imports has reshaped aspects of Chinese foreign policy—even if unwittingly—China’s increasing appetite for gas will potentially have similar spillover effects. Unlike its engagement with oil-producing countries, however, Beijing has been more tactical by striking supplier partnerships with numerous countries, including advanced and stable countries like Australia, rather than relying on just a few states. In fact, about 85% of China’s current LNG supplies come from five different countries: Australia, Indonesia, Malaysia, Qatar, and Yemen (see **Figure 5**). This diversification strategy should help limit China’s exposure to any specific disruption to supplies. Beijing has traditionally been wary of becoming overreliant on any particular country for its energy needs, believing that such dependence would allow other powers to exert leverage.

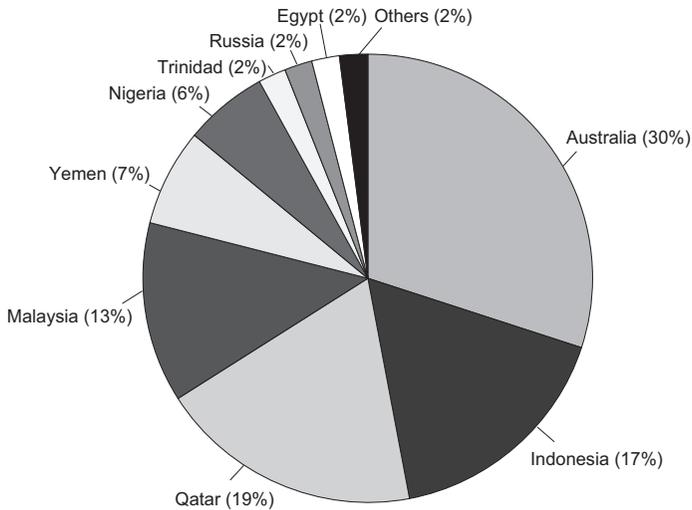
Such wariness may also figure strongly in Beijing’s attitude toward receiving gas exports from the United States, if they were approved. Even though the economics seem to make sense, given the relative abundance of cheap gas in the United States, as the “weaker” power in the relationship, China may feel that relying on the United States for gas supplies would further reduce its already limited leverage. In fact, virtually all the countries from which China receives gas are essentially resource states that would not be able to exert much political and economic leverage over China. At the same time, if China wants U.S. gas, it will need to compete with Japan, whose search for gas supplies has accelerated after the Fukushima nuclear tragedy. (In fact, Washington has already approved the Freeport LNG facility in Texas to export gas to Japan.)²³ An expanding energy relationship between Japan and the United States may deter China from competing for U.S. exports because within some quarters in Beijing such a move could be interpreted simply as an “energy Trans-Pacific Partnership” to benefit Japan at the

²¹ “Woguo tianranqi duiwai yicundu jiang da 32%.”

²² “Commercial and Strategic Opportunities for LNG in China.”

²³ See Keith Johnson and Ben Lefebvre, “U.S. Approves Expanded Gas Exports,” *Wall Street Journal*, May 18, 2013, <http://online.wsj.com/article/SB10001424127887324767004578489130300876450.html>.

FIGURE 5 China's LNG import sources, 2011



SOURCE: EIA based on FACTS Global Energy.

expense of China.²⁴ Consequently, in the North American market, Beijing is perhaps more likely to look toward Canada first for gas exports, viewing it as the “Australia of North America”—Australia being another resource-rich nation that does not inspire the kind of anxieties of strategic competition that the United States does. It is possible, however, that growing political and populist backlash in Canada from groups that view China as “buying up the country” may lead to more restrictive policies on Chinese investment.

Conversely, it is also possible that Beijing and Moscow will draw closer together should the gas pipeline deal finally be sealed. The volumes from that pipeline could be even more significant than the expected volumes from the Turkmenistan pipeline. To ensure that the supplies remain undisrupted, China will have to maintain a stable relationship with Russia. Beijing is well aware of Moscow’s practices of squeezing European countries on gas supplies and prices. Russia appears to be undertaking a shift of “looking toward the east” for future energy demand, particularly as the EU economies continue to experience a sluggish recovery. Moreover, certain better-performing

²⁴ The Trans-Pacific Partnership (TPP) has become a U.S.-led free-trade initiative intended to expand U.S. trade and economic engagement with the Asia-Pacific. Beijing tends to view the TPP as a way for the United States and Japan to strengthen their economic partnership while excluding China.

economies, such as Germany, are increasingly moving away from fossil fuels as a matter of general energy policy.

Beyond geopolitics, the politics of commodity prices will likely also rise to the forefront. As the last decade has amply demonstrated, Chinese demand effectively drove prices for resources ranging from iron ore to coal. Some have even blamed China for rising oil prices, an accusation that Beijing vehemently denies. This charge that China is responsible for the rise of global commodity prices has been a sensitive issue within the country, even though in reality it is difficult to see how China's impact on global oil prices was anything but negligible. Because China buys so much in the global market, price inflation eventually affects the domestic market, where Chinese consumers, who already pay more for a gallon of gasoline than their American counterparts, must foot the bill. Such a scenario could be repeated should Chinese demand for gas exceed current projections, and Beijing may once again find itself "blamed" for sustaining the rise of global gas prices. From an economic standpoint, this scenario may lead to slower adoption of gas in the power sector or, alternatively, to a more rapid transition from gas to less carbon-intensive fuels. Politically, this issue will likely continue to be a sensitive subject for Beijing. Incidentally, opposition to unfettered U.S. gas exports rests on similar arguments that gas prices will quickly become expensive as demand from Asia and other regions skyrockets.

Conclusion

China has embarked on a strategy to rebalance its energy resources for reasons ranging from promoting sustainable energy growth and addressing environmental and pollution concerns to aligning corporate and strategic interests. It is clear that China punches far below its weight in terms of gas consumption in its energy mix—about five times below the global average rate of roughly 24%. The government has thus made it a priority to boost gas use significantly, in large part to establish a healthier balance between coal, oil, and gas. Moreover, Chinese national oil companies are actively transforming themselves into major gas companies and are now champions of government policies to increase the role of gas in the Chinese economy. Similar to those in the United States, Chinese oil companies make the case for gas based on the need for greater security of supplies and cleaner fuel and the potential for enormous windfalls from domestic production.

In the foreseeable future, the effort to double gas consumption will require China to increasingly tap the global market, since domestic

production is unlikely to be sufficient. Many have pinned hopes for significantly boosting domestic production on China's ability to replicate the shale gas revolution in the United States. But it will likely be a slow-burning revolution that might take at least a decade to produce meaningful results. In the interim, the Chinese government will have little choice but to pursue additional options to meet the rising demand for natural gas and manage the associated politics of securing energy from abroad. Consequently, LNG imports are likely to climb dramatically, particularly if drivers of domestic demand, such as urbanization and shifts in the transportation sector to cleaner fuels, continue unabated.

Yet the unavoidable reality of China's size and scale means that, irrespective of how well the country manages its gas policy, the impact of its decisions will be felt globally. The upside is that China's experience with global oil markets should help it shape better policies, both at home and abroad, that enhance its energy security without being subject to the accusations of mercantilism that have been lodged against China's oil policy.

The uncertainty is not over whether Chinese demand will be significant but rather over how significant it will turn out to be. Decadal projections are perilous to undertake because of their usual inaccuracy when viewed in hindsight. Judging by the collective economic development objectives and policy incentives behind China's rebalancing of energy resources, current projections for Chinese gas consumption could very well fall short of actual future demand. Few could have predicted back in 2001 that merely ten years later China would be producing nearly 50% of the world's steel, consuming half of the world's coal, and importing close to 60% of the country's oil. That China is investing heavily in LNG terminals, potentially building ahead of full demand realization, suggests that policymakers are anticipating strong imports given that China has few other options in the medium term. Gas exporters hedging against the potential growth of domestic shale gas production in China can probably rest assured that any boom will likely take longer to transpire than previously thought.

The choices that China makes now about the structure of its economy and the resources used to support its economic transition will have significant implications for its energy security. Indeed, China's energy security has always been dictated by the way in which its economy has functioned. These choices are becoming much clearer now, suggesting that the next decade will be a particularly interesting and rich one for natural gas.