



China's energy demands: Are they reshaping the world?

by Gerald Stang

In 2012, China was the world's seventh biggest producer of natural gas, the fourth largest oil producer, and the biggest producer of hydroelectricity. It also produced almost as much coal as the rest of the world combined. Still, this is not enough. China's domestic energy bounty has long allowed the country to keep its overall import dependency relatively low but, as the country's economy continues to boom, its import dependency is growing quickly, particularly with regard to oil.

While the headlines for this week's visit to Europe by Chinese President Xi Jinping are dominated by crises – from Syria to Ukraine to Iran – discussions over investment protection and energy cooperation are also on the agenda. Both the EU and China are seeking to manage their dependency by diversifying suppliers, maximising domestic production and improving energy efficiency. As the world's largest energy consumer, however, China's efforts to meet its energy needs have a unique weight in both energy and climate change discussions. What impact do China's growing imports have on global energy markets and on suppliers in Africa, Asia and the Middle East? How has China's search abroad for resources changed the Chinese energy sector? Will competition or cooperation become the dominant theme for other importers (notably in Europe) in response to China's growing role in the energy world?

China's energy situation

China's energy mix is dominated by coal (69%), with oil (18%), hydroelectricity (6%), natural gas (4%), nuclear (1%) and other renewables (1%) making up the rest. Coal's share has been relatively steady for decades but is expected to drop in the years ahead as coal use is reduced for environmental reasons. Since becoming a net oil importer in the early 1990s, China's oil import dependency has climbed to more than 50% and continues to rise, making it the country's major energy security worry. No affordable alternative exists yet to replace oil in its dominant role in the transportation sector. While natural gas import dependence is also rising quickly, China has only been a net importer since 2007 – and gas used for power generation can be supplanted by coal, if necessary.

China's energy sector has evolved significantly over the last two decades. Soon after China became a net oil importer in 1994, its oil and gas sector was reorganised to create two giant vertically integrated national oil companies (NOCs) – the China National Petroleum Corporation (CNPC) and the China Petroleum and Chemical Corporation (Sinopec) – with enormous economies of scale for directing investment and development. Together, these two firms dominate the Chinese oil and gas landscape,

both domestically and internationally. While other smaller firms, primarily state-owned, also compete in the sector, the two giants have remained dominant onshore. In recent years, increasing exploration offshore has been led by the China National Offshore Oil Corporation (CNOOC). As China's onshore fields have aged, offshore resources have gained importance, raising the profile of CNOOC and bringing in international oil companies – generally excluded from onshore production – as joint venture partners.

This involvement of international partners in the Chinese market, combined with increasing engagement of Chinese NOCs abroad, has influenced the way in which the government and its state-run firms approach energy projects. While Chinese energy firms are still subject to direction from Beijing, requiring a focus on national energy security as much as on the corporate bottom line, the trend towards Western models of corporate organisation and project financing is prevailing.

This evolution is taking place at the same time as the government is pushing for more market-based pricing in its official energy policy. China's 2012 white paper on energy repeatedly emphasised the need for supporting 'the entry of private capital', gradually letting 'the market decide the prices of electricity', and recognising that the 'market mechanism is playing an increasingly important role in resource allocation.' The thrust of this formal policy document has been buttressed by high-level statements, including after the Third Plenary Session of the 18th Chinese Communist Party's Central Committee in November 2013 which called for a 'decisive' role for market forces as a principle for economic policy in the years ahead.

While these policy declarations are not without value, China is still far from allowing its national energy supply to be met by market actors, much less private ones. This is especially so as China still has significant energy security worries, particularly with regard to oil. These worries may partly explain China's aggressiveness in putting forward its claims to huge portions of the East China Sea and South China Sea. Oil and gas production have been taking place in the East China Sea since the 1980s, but the American Energy Information Administration (EIA) estimates that

it will not be a significant oil source in the medium term. Interestingly, early production in the region involved impressive cooperation between Japan and China, but as exploration has increasingly focused on the contested Xihu/Okinawa basin, such cooperation has disappeared. While estimates vary widely, the South China Sea may have significant amounts of undiscovered energy resources, a factor that is likely to complicate the resolution of the patchwork of conflicting claims across the region for years to come.

China goes international

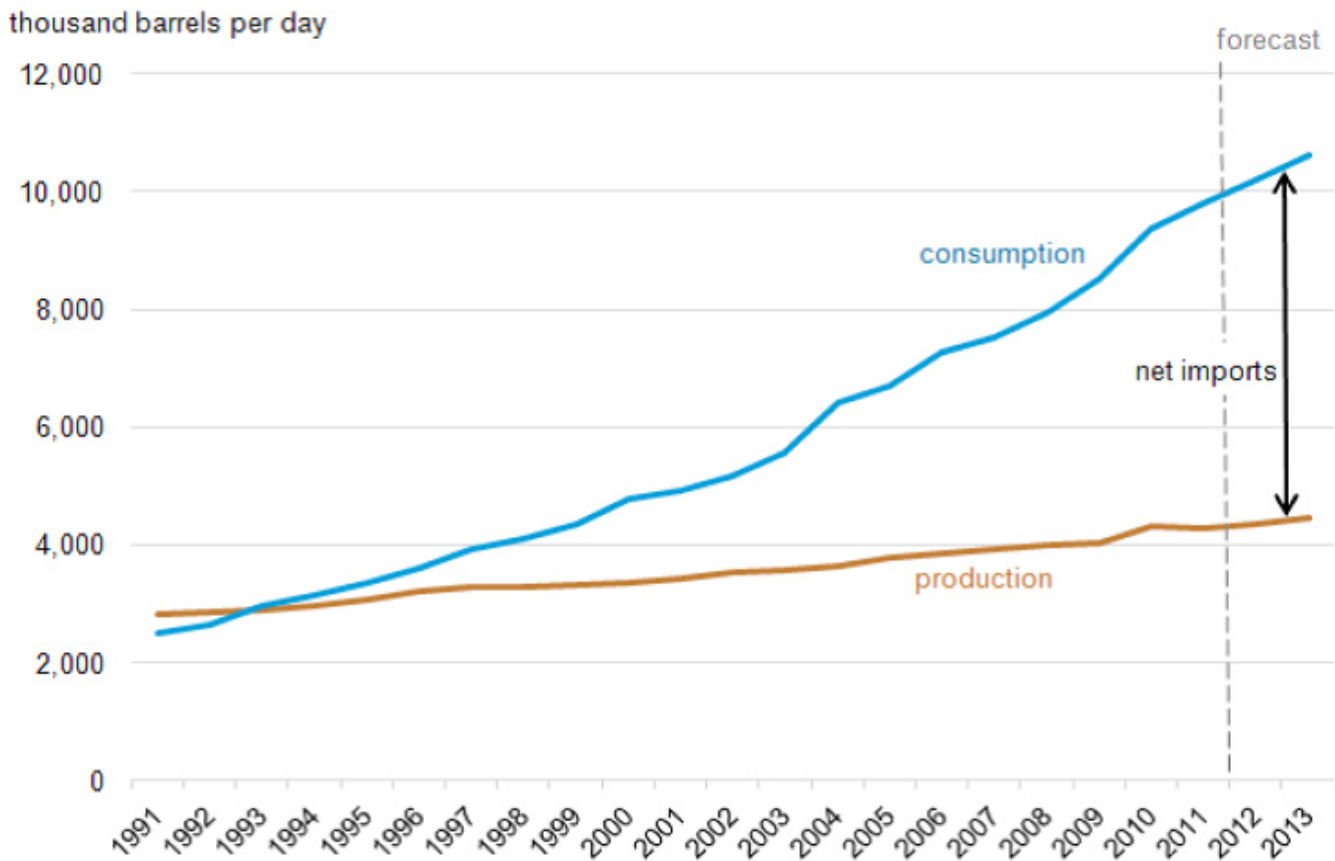
As with other characteristics of its rapid rise, China's demand for natural resources has variously been the cause of surprise, enthusiasm and worry in different corners of the world. China's oil and gas import efforts have been state-led and generally involved long-term bilateral deals to lock up supply. There has been a worry in recent years that this model could gain traction with other importers and change global markets. To date, however, it has not. China lacks the weight to reconfigure global oil markets and is instead adapting to the markets as they are.

As China strikes deals for resources in Asia, Africa and the Americas, alarm bells have been ringing over the way in which the new Chinese presence has upset the markets. For energy suppliers, Chinese demand pushes up prices and provides more opportunities to sell their resources. For energy importers, particularly in the West, the higher prices are an economic burden and Chinese influence on supplier states is viewed as disruptive. Beijing's willingness to make energy deals with any regime on a purely commercial basis has also ruffled feathers among defenders of transparency and human rights around the world.

To some extent, however, the differences between Chinese and Western methods for engaging with energy suppliers in the developing world have been overemphasised. In Angola, often held up as an example of a country where Chinese oil purchases have allowed the government to ignore calls to improve transparency, Western energy firms and banks have long been active despite their home government's declarations over the

'While Chinese energy firms are still subject to direction from Beijing, requiring a focus on national energy security as much as on the corporate bottom line, the trend towards Western models of corporate organisation and project financing is prevailing.'

China's oil production and consumption, 1990-2013



Source: U.S Energy Information Administration *International Energy Statistics and Short-Term Energy Outlook* (August 2012)

need for better governance. Corrupt and poverty-stricken Nigeria has been supplying oil to the US and Europe for decades, continuing its own independent development trajectory largely regardless of who its customers are.

But if the discussion of relationships with supplier countries moves beyond issues of corruption and transparency, the differences between China and Europe grow starker. China has relied on Iran for a large portion of its oil imports, for example, even after Western states reduced their imports over the nuclear standoff with Tehran. China has also bought oil from Sudan despite the various conflicts in Darfur and with South Sudan, and the fact that the country's president has been indicted by the International Criminal Court for genocide and crimes against humanity. These relationships with countries considered to be (diplomatically) outside polite company, however, are not without risks. While China may have been happy to make oil deals with Khartoum free of Western competition, the 2013 conflict-related disruption in energy exports from South Sudan (which inherited most of Sudan's oil fields when it seceded in 2011) highlighted the dangers of dealing with difficult regimes.

The pace of expansion of China's investment activities in Africa has created an impression that its role on the continent is bigger than it actually is. UNCTAD data for 2011 showed that China was only the 4th largest investor in Africa and that total Chinese foreign direct investment (FDI) stock in Africa was ranked only 6th in the world, far behind the front runners France, the US and the UK. Chinese engagement has largely been limited to the economic sphere (with political backing, but for commercial goals). African governments and enterprises have been adapting to Chinese involvement and are slowly beginning to negotiate better resource export deals involving well-chosen investment projects and opportunities for African workers. Chinese investment in Africa in the last decade can thus be seen as only one part of a larger trend during a commodities boom.

Closer to home, China has started importing Kazakh oil and Turkmen gas through pipelines that pass through Uzbekistan and Kazakhstan, with another planned to pass through Kyrgyzstan. This increasing Chinese engagement has become a counter-weight to Russia's historical dominance in the region, and is providing these states with ever-greater economic

and political opportunities. The continued involvement of America and Europe, which buys significant amounts of oil from Kazakhstan, in the post-Soviet sphere will be important to ensure that these countries have more options – for energy exports and political cooperation – than just the two giants on either side.

China and Russia, despite their apparent synergy as importer and supplier, have only had a limited energy relationship. While bilateral relations have recovered from the frostiness of the Mao era, mutual distrust and continued disagreement over pricing issues have long restrained the growth of Russian energy sales to China. If these barriers are overcome, might increased Chinese imports from Russia reduce Moscow's dependence on Europe, granting it extra bargaining power in dealings with its European customers? While any growth in its customer base will be a plus for Moscow, the sheer size of the Asian landmass means that significant growth in Russian exports to China will likely have to come from oil and gas fields in Russia's eastern regions. This limits how much China and Europe will be competing for the same energy sources. Any sales lost to either customer will therefore directly hit Moscow's coffers.

China's most important energy suppliers lie in the Middle East. Its preferred policy of non-interference with other regimes allows it to buy oil on a purely commercial basis from all of the suppliers in the region, notably Saudi Arabia, Iran and Iraq. The Chinese government worries about over-reliance on oil that comes through the Strait of Hormuz, but will be limited in its capacity for further diversification away from the region, particularly as the overseas activities of Chinese energy firms may be less centrally directed than might be expected.

Meeting tomorrow's needs

The need to cut pollution and develop more environmentally sustainable energy sources has slowly gained credence in China as the negative side effects of a 'growth at any cost' model of development become more evident. China's efforts at pollution reduction will need to focus on reducing coal use for electricity production. In turn, major increases in gas use, nuclear power production and renewable energy will be required.

For renewable energy production, progress is likely to be made at even slower rates than it has in Europe, which leads the world in renewable investment but has had major difficulties in

determining the best mechanisms for encouraging cost-effective renewables development. The collapse in solar panel prices during the global financial crisis prompted China's Premier Wen Jiabao to call for an end to 'blind expansion' of solar and wind investments and to focus instead on gas, nuclear and hydro-expansion.

For gas, China is estimated to have the world's largest shale gas reserves, but geological and environmental constraints abound. Depending on the country's pace of decarbonisation, and on the pace of technological advancement in the gas industry, China's shale gas may play an important role in its energy mix in the long term. For nuclear power, China has resumed construction of multiple facilities following a pause in the wake of the Fukushima disaster, but nuclear power remains a small part of the pie and it is unclear how affordable it will be, even with potentially huge economies of scale.

For China as for Europe, therefore, energy efficiency will be the mantra of the coming decades. China has actually cut back the energy intensity of its economy over the last decade but, with growth so high, emissions are still booming. There remains plenty of low-hanging fruit available for improvements in this area but China, even more than Europe, will struggle to find the right balance of price signals and regulatory requirements to make rapid progress on this front.

As the US moves slowly toward energy independence on the back of its boom in shale oil and gas production, the EU and China are becoming the world's two most important energy importers. Energy cooperation between the two is directed through the EU-China Energy Dialogue, and involves projects on issues ranging from energy conservation to carbon market modelling. China's most significant impact on the European energy scene has been its impact on global demand. Rather than redefining how markets work or completely rewiring energy geopolitics, China is gradually recognising the value of market-based pricing: the efficient allocation of limited capital. This recognition is influencing China's choice of energy deals abroad and the organisation of its energy sector at home. As discussion of the Chinese economy focuses on slowdowns vs. hard landings, prioritising the efficient use of resources has more than just economic consequences; it can influence the legitimacy and strength of the regime.

Gerald Stang is an Associate Analyst at the EUISS.

