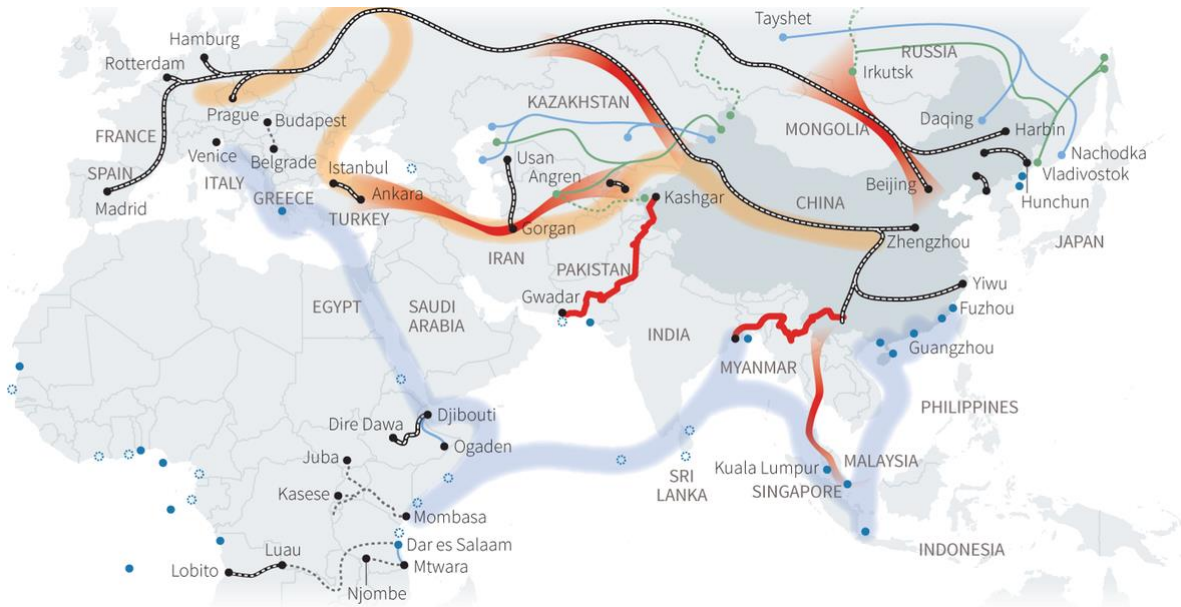




## China's Belt and Road Initiative: What Does It Mean for Energy Security? Mehmet Ögütçü<sup>1</sup>



### Overview

China's choices and policies matter a great deal for the world given its dominant position not only in energy, but also in investment, trade, technology, and climate change. The magnitudes are impressive. The decisions and policies by China's energy leaders are set to have a significant bearing on all of us.

Despite the global crisis and disturbances, the "Middle Kingdom" has conquered a prominent place on almost all of the world's playing fields<sup>2</sup>. Beijing

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has positioned itself to challenge the dollar as the global reserve currency and extend its economic and geopolitical influence via the Belt and Road Initiative (BRI), a brainchild of President Xi Jinping.

China, emerging as the world's largest economy<sup>3</sup>, based on the World Bank's purchasing power parity calculations, has become an undisputed leader in world energy.

Decades of rapid economic growth have dramatically expanded China's energy needs. It is now the world's largest consumer of energy, the largest producer and consumer of coal, and the largest emitter of carbon dioxide. It is also the world's largest producer, exporter and installer of solar panels, wind turbines, batteries and electric vehicles. China is a world leader in electric vehicles, renewables investment and technology and nuclear energy (47GW capacity in 2018).

As of 2020 there will be no Chinese citizen without access to commercial energy, while 900 million people will still suffer from energy poverty in the rest of the world. China's power sector is, however, faced with a severe overcapacity problem. Slowing demand for electricity due to the economic downturn and the slashing of energy-intensive industries has caused widespread underutilization of existing power generation capacities, which have seen their lowest utilization hours since 1978.

However, the reality is that China still depends heavily on the external world for its energy shortfalls. Despite its large production and reserves in energy, China relies on foreign imports of crude oil (70 percent) and natural gas (43 percent), most of which come from politically unstable regions through strategic chokepoints.

The Chinese government has now clearly signaled its intention to assume a more prominent global leadership role through the BRI<sup>4</sup>, an attempt to develop new markets for China across Eurasia — with infrastructure links across central and south Asia towards Europe and Africa. The BRI is also about energy and infrastructure (pipeline, grids and tankers) connectivity with Russia,

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<sup>2</sup> China's state-led innovation has generated impressive results that compete with the more-market-driven system in the West. This standing has led to the prediction of a new bipolarity—in former National Security Advisor late Zbigniew Brzezinski's words, a "G-2 World", the United States and China.

<sup>3</sup> By 2035, China's GDP (in terms of purchasing power parity) will grow to \$43.7 trillion, about 1.6 times larger than the \$26.7 trillion projected for the United States or \$27.8 trillion estimated for the European Union (EU).

<sup>4</sup> It is a project of unprecedented geographical and financial scope.

BRI has two primary components: the overland Silk Road Economic Belt (SREB), and the sea-based 21st-century Maritime Silk Road (MSR). Together, they form the "belt" and "road".

Central Asia and ASEAN and the Gulf nations, which are sources of China's energy imports. The BRI not only serves as a platform for exporting products and services, but is also an opportunity for Chinese companies to share their advanced technology and experiences with their counterparts along this geography.

### **Critical import dependency**

China's thirst for energy has fuelled its incredible economic development over the past two decades, but it has come at a hidden risk, the growing dependence of the country on energy imports, be that coal, oil or natural gas. Dependency on foreign resources — such as energy — restricts policy options, thereby reducing the avenues through which a country can cultivate its national power. Sudden shifts in the energy market and overseas political instability may also diminish access to foreign energy sources or dramatically increase the cost of energy imports, further compromising the ability of import-dependent countries to pursue their national objectives<sup>5</sup>. Therefore, energy security is not a simple supply—demand imbalance matter — it is a national security priority.

China's energy security strategy prioritizes maximum self-sufficiency. But the country's primary energy self-sufficiency rate has been going down since the early 1990s, partly thwarting this ambition. In 2016, the self-sufficiency rate stood at 79 percent and since then it has not improved<sup>6</sup>. China's coal is the primary source of the country's energy security and it remains the mainstay of China's primary energy consumption. Oil is the second largest energy source, 70 percent of which has to be imported. Even more, it is expected that approximately 85 percent of China's oil (9.7 million b/d) will have to be imported in 2035, amounting to around 15 percent of global oil consumption and 62 percent of its total oil consumption<sup>7</sup>.

While not as stark as its dependency on imported oil, China's reliance on imported natural gas is also significant. It has become the world's largest natural gas importer. China's demand for natural gas is forecasted to reach 250 and 400 bcm by 2020, and 2030, respectively, but natural gas output is only expected to hit 150 and 250 bcm over the same period. This means China's dependence on imports to meet domestic gas demand is expected to rise to 75 percent in 2020 from 57 percent in 2017<sup>8</sup> —a considerable jump<sup>9</sup>. The EIA

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<sup>5</sup> <https://chinapower.csis.org/energy-footprint/>

<sup>6</sup> <https://theasiadialogue.com/2018/05/22/chinas-energy-security-and-the-transition-towards-a-green-energy-system-no-quick-fix-but-quicker-than-planned/>

<sup>7</sup> <https://www.argusmedia.com/en/news/1967517-chinas-oil-demand-to-peak-by-2030-cnpc>

<sup>8</sup> [http://www.china.org.cn/business/2019-07/15/content\\_74992820.htm](http://www.china.org.cn/business/2019-07/15/content_74992820.htm)

forecast on China's energy imports implies a rather modest annual growth rate of around 2 percent for oil imports, and a more robust 7.5 percent annual growth rate for gas imports<sup>10</sup>.

Even in coal, China is a major importer. China produced 3.77 billion tons of standard coal in 2018, up 5 percent year-on-year, a seven-year high. In 2017, its coal imports primarily came from Australia (79.9 million tons), Indonesia (35.2 million tons), Mongolia (33.5 million tons), and Russia (25.3 million tons)<sup>11</sup>. Prior to 2017, North Korea was China's fourth largest coal supplier, ahead of Indonesia and Mongolia. The country is still seeing an increase in coal-fired power capacity as a result of inertia (many projects were approved in the heyday of the economic boom), and incentives (dropping coal prices and a government fixed electricity tariff is increasing the profit margin for coal power). This situation has prompted regulators to consider putting a "freeze period" for any new coal-fired power projects.

The system of prices and subsidies does not reflect the real cost of fossils to the economy. Environmental costs and the cost of support mechanisms for fossils tend to skew the consumer price, and wind and solar are not yet fully competitive on existing conditions. In order to accelerate the reduction of the use of coal in the long term, construction of new coal power plants must be brought under control, and the existing ones should be subject to a more rigid regime of flexibility in power supply to allow for full integration of renewable energy at any time.

## **Renewable revolution to power China's future**

In recent years, no country has put itself in a better position to become the world's renewable energy superpower than China. China has installed more renewable capacity than any other country in the world. China is increasingly looking toward securing its future energy needs with sustainable alternatives. In accordance with the 2016 Paris Agreement, China has committed to make non-fossil fuel energy 20 percent of its energy supply by 2030.

China is on the way to becoming the world's renewable energy superpower. The renewables revolution is reducing the influence of fossil fuel exporters and bringing energy independence to countries around the world. This transformation also brings about big power shifts, which might reduce energy-related geopolitical tensions, and foster greater co-operation between states.

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<sup>9</sup> China's natural gas imports, which amounted to 1.4 trillion cubic feet (Tcf) in 2015 (about 24 percent of consumption), are expected to rise to 6 Tcf (about 26 percent of consumption) in 2035.

<sup>10</sup> [https://www.eia.gov/outlooks/ieo/pdf/nat\\_gas.pdf](https://www.eia.gov/outlooks/ieo/pdf/nat_gas.pdf)

<sup>11</sup> <http://www.chinadaily.com.cn/a/201904/28/WS5cc59903a3104842260b8ed7.html>

Renewable energy offers a viable home-grown alternative to polluting fossil fuels. It is a double fix for China: climate change mitigation and improved energy security. This prospect has prompted the Chinese leadership to promote a green transition of the country's energy system. A basket of pro-renewable energy policies has already been put in place. China is now the world's biggest investor in renewable energy. However, all "clean" energies (including nuclear power) still only made up for 14 percent of total primary energy consumption.

China is leading the way. In 2017, almost half of global renewable energy investment came from China, totaling \$125.9 billion. This is more than double the \$53.3 billion that China invested in renewables in 2013. China-led renewable energy investment worldwide contributed to almost a third of the global renewables investment in 2018 at \$91.2 billion. The country is also aiming even higher for renewables: installed capacity of wind energy and solar energy should reach 210GW and 110GW, respectively, by 2020; higher than what was declared at the end of 2014<sup>12</sup>.

China is now home to two-thirds of the world's solar-production capacity. The future development of China's solar industry, however, has been called into question. Due to an over-saturated domestic market, Beijing halted all new solar projects and lowered tariffs on imported clean energy in June 2018. Additionally, the ongoing trade dispute between the US and China could further disrupt China's solar panel industry.

It is estimated that 1 in every 4 gigawatts of global renewable energy will be generated by China through 2040<sup>13</sup>.

Overall, clean energy consumption — including natural gas, hydropower, nuclear power and wind power — increased to 22.1 percent in 2018. China has recently adopted policies aimed at speeding up the development of its natural gas sector. A new element is a strong focus on shale gas development over the next few years<sup>14</sup>. China plans to increase its shale gas production capacity to between 15 and 30 bcm by 2020, at which point it will likely account for between 8 and 12 percent of the total natural gas output<sup>15</sup>. Thus, a successful exploration and development shale gas campaign would help China reduce its reliance on natural gas imports.

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<sup>12</sup> <https://www.chinadialogue.net/blog/9113-China-outdid-itself-again-in-setting-2-2-low-carbon-targets-/en>

<sup>13</sup> <https://chinapower.csis.org/energy-footprint/>

<sup>14</sup> Although it has three trillion cubic meters of shale gas re-sources, China currently lacks both the key technologies and an extensive pipeline net-work necessary to promote the sector's healthy development.

<sup>15</sup> To reach these targets, the central government plans to give shale gas companies subsidies of no less than RMB 0.33 (\_0.049) per cubic meter, the current rate given to seam gas producers.

One should not overlook the role of hydroelectric power, which remains China's main source of renewable energy production. The Three Gorges Dam, completed in 2012 at a cost of over \$37 billion, is the largest hydroelectric dam in the world, and boasts a generation capacity of 22,500 MW. The dam generates 60 percent more electricity than the second-largest hydropower dam, the Itaipu dam in Brazil and Paraguay. As a result of the Three Gorges Dam and other projects, China became the world leader in hydropower in 2014.

China has also pursued electrification at an eye-watering pace. It now has almost half the world's electric vehicles, half the world's charging infrastructure, and 99 percent of the world's electric buses. It has brought the cost of electric vehicle batteries down by two-thirds in just five years, to the point where electric vehicles can become cost-competitive with internal combustion engine cars.

### **Leadership in climate change**

China has come a long way in moving from a climate resister to a strong supporter of the Paris agreement and global climate governance. What is not realized is how fast the situation has changed. China's cumulative carbon emissions are the largest in the world. But, China's growing renewable energy supply and dominance in renewable energy technology — including being the world's leader in the production and sale of electric vehicles - could arguably make China “a global green leader”<sup>16</sup>.

Often considered the problem child of global climate diplomacy, China is making greater and faster strides than expected away from fossil fuels — becoming the world's largest investor in solar and wind technology and boasting more jobs in solar energy than in coal-mining. It is all part of a long-term economic strategy to dominate in critical technologies.

China remains the world's leading emitter of greenhouse gases, accounting for roughly 30 percent of global carbon dioxide pollution. But the moves are giving China a growing leadership role on the world stage — precisely at a time when Washington's voice is becoming less relevant thanks to President Donald Trump's announced plan to withdraw the U.S. from the Paris climate agreement<sup>17</sup>. China was slow to catch up with the Industrial Revolution and lagged

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<sup>16</sup><https://www.abc.net.au/news/2019-07-01/china-leader-in-renewable-energy-wages-war-on-pollution/11249162>

<sup>17</sup> <https://www.politico.com/story/2019/08/15/climate-china-global-translations-1662345>

behind, perhaps until recently, in the dot-com revolution, but it saw the potential to lead the clean energy revolution from the start —and it is determined to lead. Of course, ambitious targets do not necessarily translate into results. To achieve these goals in less than five years, China would have to overcome some chronic problems in its energy sector.

In this vein, China has significantly revised its previous energy plans by decreasing investment and plans in light of a much lower increase in its energy demand as the result of a lower annually projected GDP growth of 6-7 percent (declining by some 40 percent), an overall economic restructuring from a once low-tech factory of the world into a global high-tech power, and an impressive decline in energy intensity<sup>18</sup>. The country has moved from "high growth rates" to "high-quality development". But, it has to do better in improving vast energy inefficiencies. Although China's economic transformation is far from complete, the progress made is impressive.

### **BRI's energy security dimension**

Overall, China's infrastructure plans for building railways; highways and ports are clearly interlinked with China's energy and raw materials requirements abroad and its domestic energy policies. The BRI imagines a \$1.3 trillion Chinese-led investment program creating a web of infrastructure, including roads, railways, telecommunications, energy pipelines, and ports<sup>19</sup>. This would serve to enhance economic interconnectivity and facilitate development across Eurasia, East Africa and more than 80 partner countries<sup>20</sup>.

It demands massive investments in energy projects such as the development of onshore and offshore oil and gas fields, coalmines and coal-fired power plants, grid networks, other energy infrastructure and the expansion of renewable energy sources. Since 2009, China has invested \$27.1bn in natural gas and LNG projects in BRI countries. Chinese companies have also announced investments of the order of some \$102bn in building or acquiring power transmission infrastructure in 84 BRI countries around the world. In addition, another \$21bn of loans has been granted for overseas power grid investments.

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<sup>18</sup> <https://www.rsis.edu.sg/wp-content/uploads/2019/01/WP320.pdf>

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[https://assets.publishing.service.gov.uk/media/5be9560ced915d6a166edb35/K4D\\_Helpdesk\\_BRI\\_REPORT\\_2018\\_final.pdf](https://assets.publishing.service.gov.uk/media/5be9560ced915d6a166edb35/K4D_Helpdesk_BRI_REPORT_2018_final.pdf)

<sup>20</sup> Twenty Chinese cities are now connected to Europe by direct rail links and the amount of freight sent this way has quintupled since 2013, as routes such as Chengdu to Prague and Wuhan to Lyon establish themselves. China's developing interest in Eurasia has significant strategic consequences. The ultimate ambition is to turn the Eurasian landmass into an economic and strategic region that will rival — and finally surpass — the Euro-Atlantic region.

Through the BRI, China is also well placed to be the dominant player in facilitating the transition and rollout of renewable energy infrastructure across Eurasia<sup>21</sup>. Leadership on international climate action is one area in which China can develop significant soft power cachet, particularly with developing countries of the global south<sup>22</sup>.

Somewhat paradoxically, given the investment focus on hydrocarbon pipelines, the BRI is the vehicle through which China is likely to shape the contours of the emerging international post-carbon economy. The Paris Agreement in the UN Framework Convention on Climate Change is a keystone document in this respect. A combination of the climate emergency and market behaviours are making fossil fuel energy production increasingly uneconomic. This has spurred an accelerating transition away from fossil fuels and towards renewable energy generation.

### *Overcoming the Malacca Dilemma*

Beijing's highest strategic priority is to ensure energy security by connecting friendly major oil and gas producers to China via pipelines transiting through land routes (from Pakistan, Myanmar, Central Asia and Russia) beyond the effective military reach of the United States. If successful, within a generation, China's new "Silk Roads" – land pipelines, together with roads and railways – will transport sufficient oil and gas to meet the country's import requirements<sup>23</sup>.

Currently, China is highly dependent upon oil and gas imports, principally from the Persian Gulf and Africa, which are carried mainly by tankers over sea lines of communication and through maritime choke points controlled by the U.S. Navy. An energy imports cut-off enforced by a potential naval blockade would negatively affect China's economy and military forces.

Given China's growing energy demand, it is fair to argue that new land-based pipelines will alleviate only a small part of China's maritime dependency. The sheer volume of oil and liquefied natural gas that is imported will make strategic chokepoints increasingly more important to China.

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<sup>21</sup> [http://www.china.org.cn/business/2019-04/28/content\\_74730701.htm](http://www.china.org.cn/business/2019-04/28/content_74730701.htm)

<sup>22</sup> BRI's overland infrastructure network encompasses the New Eurasia Land Bridge and five economic corridors: China-Mongolia-Russia; China-Central Asia-West Asia; China-Pakistan; the China-Indochina peninsula; and Bangladesh-China-India-Myanmar.

<sup>23</sup> <https://thediplomat.com/2017/01/deconstructing-chinas-energy-security-strategy/>



## *Russia: Key to China's energy security*

Russia and Iran are the only two major energy exporters that have significant enough oil and gas reserves to potentially satisfy all of China's oil and gas import requirements on a sustainable basis. Beijing's energy security strategy is designed around a simple and straightforward bargain: economic security for Russia and Iran (based on assured Chinese demand) in return for energy security for China (based on reliable and secure supply via land-based pipelines from Russia and Iran). In this case, interdependence is perceived to be mutually beneficial.

According to EIA's base case projection, in 2035 Russia could potentially satisfy about 85 percent of China's oil import requirements (8.1 of 9.7 million b/d) and all of China's needs for natural gas imports (6 Tcf)<sup>24</sup>. It is reasonable to assume that Russia could increase oil production by around 1 percent per annum over the next two decades to completely satisfy all of China's oil import requirements in 2035. As China shares a 4,179 kilometers land border with Russia, there is no way that pipelines connecting Russian oil and gas fields to northeastern China would be disrupted by another power.

Russia's view of China has shifted significantly over the past five years. Moscow has abandoned any hope that the Chinese economy is an example it might emulate. Instead, foreign policy experts now talk of how Russia can use China to further its geopolitical goals<sup>25</sup>. Russia's elite — always so ready to resist any sign of Western hegemony — have no problem admitting China's economic superiority.

In the energy collaboration between the two powers, there is clearly a mutuality of interests or a "marriage of convenience". From an energy security perspective, Russia would also have to pivot from Europe to China because it is highly dependent upon energy exports to the European Union for its economic security<sup>26</sup>.

The China—Russia East-Route Natural Gas Pipeline, which is still under construction, is expected to begin gas supplies by December 2019. Serious negotiations about gas exports have been underway since 2004 but were energised

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<sup>24</sup> <https://thediplomat.com/2017/01/deconstructing-chinas-energy-security-strategy/>

<sup>25</sup> <https://www.politico.eu/blogs/the-coming-wars/2019/02/russia-china-alliance-rule-the-world/>

<sup>26</sup> Russia's pivot to Asia has provided more talk than action to date, especially in the gas sector. Small amounts of LNG have been delivered from the Sakhalin 2 project, and a few cargoes have travelled east from Yamal LNG, but the vast majority of Russia's gas exports have remained oriented towards the west and Gazprom's traditional European market. Indeed, despite the introduction of sanctions and calls from European and United States politicians to reverse the continent's dependence on Russian gas, export volumes continue to expand,

by political and commercial forces in 2014. The Ukraine crisis and the imposition of sanctions on Russia by the US and EU encouraged the Kremlin to turn towards friendlier neighbours, while the surge in Chinese gas demand and a desire for a diversity of import options encouraged the authorities in Beijing to become more enthusiastic about Russian gas. The result was a 38Bcm per annum contract signed in May 2014 for gas to flow from East Siberia via the Power of Siberia pipeline to North-East China, with Gazprom and China National Petroleum Corporation as the key protagonists.

But such a major investment is not without risk. Any cooling of the new-found warmth in the traditionally fickle Beijing-Moscow alliance could hurt demand for Russian gas. With depleting gas reserves and pressure to reduce coal use, China sees a dedicated Russian pipeline as a useful part of its future energy security. Yet Beijing is not short of willing suppliers, including pipelines from Central Asia and Myanmar. As the only potential major customer for the gas — the pipeline is too far east for Gazprom to profitably send gas to western customers — the Chinese took a hard line during the decade-long negotiations. Gazprom gave in to Beijing's demand that the gas would be pumped to eastern — not western — China.

The Yamal liquefied natural gas project in the Arctic region of Russia, a joint venture of PetroChina and Novatek, Russia's independent natural gas producer, also foresees much of its output being supplied to China after its completion by the end of 2019<sup>27</sup>. Being the world's first integrated project for polar natural gas exploration, development, liquefaction and transportation, Yamal produces 16.5 million tons of LNG each year. What is shipped to China now accounts for 10 to 15 percent of the country's annual LNG imports. It has substantially diversified the country's gas import channels and increased the percentage of LNG in the country's gas imports.

The other Sino—Russian energy project is the nascent East Siberia—Pacific Ocean (ESPO) pipeline connecting Russian oil fields in eastern Siberia to northeastern China (current planned capacity of 2.6 million b/d by 2020). In order to satisfy all of China's energy import requirements by 2035, the capacity of the ESPO oil pipeline network would have to be quadrupled to 10.4 million b/d<sup>28</sup>.

Strategic prudence suggests that both Moscow and Beijing would seek to hedge their mutual interdependence over the next decade. Accordingly, Russia

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<sup>27</sup> A second line for the China-Russia oil pipeline began commercial operation in January 2019, raising China's annual imports of crude oil from Russia through the pipeline from 15 million metric tons to 30 million tons.

<sup>28</sup> <https://ig.ft.com/gazprom-pipeline-power-of-siberia/>

will strive to maintain its energy ties to Europe while increasing its energy partnership with China.

### *Iran link via Pakistan*

From China's energy security perspective, Iran represents an ideal hedge, as it is outside the control of both the United States and Russia. And Iran, which has endured the crippling effects of U.S.-led energy sanctions (targeted primarily against Tehran's nuclear power program), clearly needs an alternative to energy exports to Europe<sup>29</sup>. Iran shares a common border with southwestern Pakistan, while China shares a common border with northwestern Pakistan, so land-based oil and gas pipelines connecting Iran to China via Pakistan would make sense.

By investing in pipelines from Gwadar, on the coast of Pakistan, to Xinjiang, and from coastal Myanmar to Yunnan, China also can diversify its transportation routes for maritime energy supplies. This reduces its vulnerability to energy supply disruption at maritime choke-points in the Strait of Malacca and the South China Sea.

The initial Iran-to-Pakistan energy pipeline has been built (although it would need to be significantly expanded), but the critical Pakistan-to-China portion is likely to take a generation to become reality. Beijing has invested \$46 billion for the China—Pakistan Economic Corridor, linking Pakistan's deep-sea port of Gwadar on the Arabian Sea to Kashgar in Xinjiang province of western China.

The establishment of port facilities in the Indian Ocean will also be advantageous to the emerging blue-water capability of the People's Liberation Army Navy. This would assist in keeping vulnerable critical sea lines of communications open for maritime energy supplies from the Middle East<sup>30</sup>.

### *Central Asia connections*

To ensure adequate gas supply for the biggest gas-consuming nation worldwide, China has been diversifying its channels to import more gas from abroad, including conventional gas, shale gas, tight gas and coal bed gas. Central Asia, in particular Turkmenistan, provides a convenient source for additional gas to the Chinese energy economy.

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<sup>29</sup> <https://www.politico.eu/blogs/the-coming-wars/2019/02/russia-china-alliance-rule-the-world/>

<sup>30</sup> <https://theconversation.com/the-belt-and-road-initiative-chinas-vision-for-globalisation-beijing-style-77705>

The China—Central Asia natural gas pipeline, the country's first trans-border energy channel that brings gas from abroad over land, represents more than 15 percent of China's annual national gas consumption. It runs from the border between Turkmenistan and Uzbekistan, passes through Uzbekistan and Kazakhstan and links up with China's West-to-East gas pipeline in Korgos, Xinjiang Uygur Autonomous Region. It has been in operation for nine years, has delivered a total of 277.4 bcm of natural gas to China by 30 June 2019, and has benefited over 500 million people in 27 provinces and regions in China<sup>31</sup>.

Securing supply (not only oil, but natural gas, hydro and uranium) over land from Central Asia is a high strategic priority for China. The region is not only a pathway to reach high-value European markets via Caspian and Turkey by land and railroads, but also a critical neighbor to curtail ethnical nationalism and Islamic fundamentalism. Through BRI, China is, and will certainly remain, the largest investor in Central Asia. It is the only country that can mobilize huge investment in the region, far beyond what Western countries and Russia can offer.

However, the success of this connectivity is yet to be assessed. In addition—and this is a critical issue — it seems that the Chinese projects have not yet achieved the kind of higher economic impact that could translate into more local jobs and transfer of knowledge. Yet, whatever its outcomes, China's growing involvement in Central Asia is a long-term phenomenon and a turning point in Central Asia's post-Soviet history and economic development.

### **Key messages**

Clearly, a new China has emerged over the past decade with a strong reorientation in energy, climate change, investment and geopolitics that will inevitably affect us all. China's ability to achieve energy security under the new circumstances will happen within the next two decades. The renewables revolution and the BRI strategy will contribute to change the dynamics on China's energy security<sup>32</sup>, but given the critical role fossil fuels plays in the current energy mix, it cannot secure full energy self-sufficiency for China. Hence, it is important to keep a balanced energy basket of renewables, oil, gas, hydro, nuclear and coal, while at the same time efficiency improvements and technology innovation will remain a top priority.

Since investments in energy infrastructure have a long pay-back time, decisions taken now will shape China's energy system for the next 20-40 years.

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<sup>31</sup> [http://www.xinhuanet.com/english/2019-08/04/c\\_138282054.htm](http://www.xinhuanet.com/english/2019-08/04/c_138282054.htm)

<sup>32</sup> <https://thediplomat.com/2017/01/deconstructing-chinas-energy-security-strategy/>

The Chinese government must therefore re-consider its energy strategies, policies, plans, and targets bearing in mind what is to come. It must speed up existing reforms and change the incentives for investments in the energy sector in a more accentuated pro-renewable energy direction. It must also design smarter subsidies to ensure integration of renewables into the grids.

China wishes to own its energy supply chain and related technologies and has already produced a whole host of global leaders such as Trina Solar and LONGi in solar, Goldwind in wind turbines, Shanghai Electric and Dongfang Electric in power generation, Huawei and Sungrow in power electronics, and BYD and CATL in batteries. China's energy and investment corporations will soon profoundly affect the world energy system.

Beyond creating bluer skies, that are achieved with renewables, nuclear power and imported Central Asian and Russian gas, China's key energy policy is to ensure that it is not strategically vulnerable, noting that nearly all of those energy imports must pass in front of the US Navy's 7th fleet, based in Singapore.

Geopolitics will therefore not sit easily in the back seat. Once the new overland pipelines and grids are fully operational to link China to Iran, Russia, Central Asia and South Asia, the United States no longer will have the ability to sever Beijing's energy lifeline. This will ease the Malacca dilemma. China's core interests on Taiwan reunification, the Diaoyu/Senkaku islands, and maritime boundary in the South China Sea will not go away. They, together with the BRI challenges, will most likely affect the future of China's energy outreach for greater stability and security.

Last, but not least: Whilst China must improve its central and local energy governance structures and policies to effectively implement its new strategy, there is a burning need for the current international energy governance to open greater space for China to step into.