Russia’s invasion of Ukraine lit a fire under China’s transition to green energy

Russia’s invasion of Ukraine offers China three important lessons about Beijing’s energy strategy in the short and long term.

The first lesson is that China needs to increase domestic energy production in order to reduce dependence on energy imports.

The second lesson is that China should diversify the countries from which it imports energy to ensure stability and mitigate the adverse effects of volatile fluctuations in availability of supply and in price.

The final lesson about energy China can take away from Russia’s invasion of Ukraine is that Beijing should not be over-reliant on any single source of energy and should move from hydrocarbons to green energy.

One: make it yourself

The first lesson — the need to increase domestic energy production — takes on added significance in light of the widespread power outages that hit China beginning in 2021, raising concern about energy security.

In February 2022, when the war broke out, cutting energy supplies and causing prices to fluctuate, Beijing’s concerns about energy security intensified. China began to increase its focus on improving domestic energy production.

China began a steady increase in domestic gas production, reaching 220.1 billion cubic

meters (bcm) in 2022, up 6%, or 10 bcm, from 2021. The surge in domestic gas production enabled China to meet 59% of its domestic demand and helped reduce its import dependency to 41% from 45%.

In addition to efforts to increase domestic gas production, China increased its domestic coal supply. Coal production rose 10.5% in 2022 and maintained 5.5% growth in the first quarter of 2023.

Despite a global push to cut dependence on the dirtiest of fossil fuels, Beijing in 2022 approved new coal-fired power projects with the ability to generate 97.37 GW of power — nearly a fivefold increase from 2021.

In the second quarter of 2023, local governments gave the green light to nearly 30 GW more of new coal power capacity, bringing the total approved in the first half of the year to 50.4 GW of coal-fired power.

Two: trade far and wide

When the Russia-Ukraine war began in early 2022, international sanctions against Moscow blocked the import of many Russian energy imports, sending prices into a tailspin. China quickly took advantage and increased its imports from Russia.

After Saudi Arabia, Russia is now China's second-largest source of crude oil, supplying 1.7 million barrels per day, on average, accounting for 17% of China's total imports, up slightly from 16% in 2021.

Russia has also become China's second-largest coal supplier, after Indonesia. Coal shipments from Russia reached 68.1 million tons in 2022, accounting for 23% of China's

imports, up from 18% in 2021.

Finally, Russia's importance as China's second-largest supplier of pipeline gas after Turkmenistan remains significant. Russia supplied 15.5 bcm of gas in 2022, accounting for 25% of China's imports, up from 24% in 2021.

Since the start of the war, Beijing also took additional strategic steps to diversify the sources of its energy imports, signing a deal with Qatar for a supply of liquified natural gas (LNG) for 27 years, a 20-year LNG deal with the United States, and a 4-year LNG deal with Oman.

Challenges to self reliance and diversification

Making one's own energy to become self-sufficient and diversifying one's list of trading partners is hard work. Despite Beijing's import of cheap Russian energy resources, growing sanctions against Russia create risk and uncertainty for Chinese companies for the future.

Since the beginning of the war, Chinese companies have not made any new investments in or executed transactions with Russia's hydrocarbon sector. Nor have any new Sino-Russian oil or gas pipelines, or long-term import contracts, been agreed.

China's energy insecurity has risen with the tightening of world supply resulting from sanctions against Russia adding on to earlier sanctions against energy-rich countries such as Iran and Venezuela.

Despite China's efforts to diversify its energy sources through agreements with Qatar, Oman, and the United States, recent developments in neighboring Central Asian states posed additional challenges to Beijing. Both Kazakhstan and Uzbekistan decided to stop

exporting gas to China due to rising domestic demand in winter. This unexpected development introduced a new element of uncertainty into China's energy diversification plan.

On the self-sufficiency front, China's expanding domestic coal production and the commencement of new coal-fired power projects hold the potential to mitigate the nation's energy vulnerability. However, expanding coal capacity could lead to more coal-powered energy generation, which could, in turn, lead to each coal-fired plant being used less often thus increasing financial risks and raising the chance that some plants would be stranded. All these factors pose a challenge to China's long-term plan to reduce dependence on coal.

Burning more coal spews more carbon emissions into China's already polluted skies. In the second quarter of 2023, China's carbon emissions surged 10% year-on-year, surpassing even the previous record levels observed in 2021 by 1%. The over-authorization of new coal capacity further complicates China's efforts to stay on course for peaking carbon emissions before 2030 and achieving carbon neutrality by 2060. This dual challenge of energy security and carbon emissions underscores the complexity of China's energy policy landscape.

Three: diversify toward green energy

In the short term, Russia's invasion of Ukraine forced Beijing to rely on conventional energy resources, primarily coal-fired power generation, and prompted the forging of new deals to diversify import suppliers. This strategy could be at odds with Beijing's overarching plan to achieve carbon neutrality.

Escalating challenges in Central Asia jeopardize China's energy diversification strategy and highlight the key role of lesson three: China must learn to use different energy resources. The war not only pushed China to rely on traditional energy resources but also to create

compelling incentives to expedite investments in green energy for the long term.

Beijing is committed to increasing the deployment of solar and wind power at the domestic level. China possesses a significant competitive advantage in the renewable energy supply chain, accounting for a staggering 72% of global solar panel production and 50% of global wind turbine manufacturing.

The scale at which China is manufacturing renewables helps it save money, cost savings it passes on to consumers in the form of the world's most affordable wind and solar equipment. For instance, the unit cost to make a solar panel in China—only $630 per kW of power—is notably lower than the $810 per kW in the European Union, or the $1090 per kW in the United States.

China reached a significant green energy milestone in the first half of 2023 despite a rise in newly approved coal-powered energy generation projects. China's cumulative installed capacity of renewable energy sources reached 1.32 billion kW, surpassing the nation's coal power capacity for the first time.

During the first eight months of 2023, wind power capacity has experienced remarkable growth, expanding by 14.8% year-on-year to reach 400 million kW. Solar power capacity reached 510 million kW, a year-on-year rise of 44.4%.

In addition to the vigorous expansion of solar and wind power, the Russia-Ukraine conflict is likely to boost sales of electric vehicles (EVs), furthering China's transition to green energy over the long term. As the world's largest EV market, China currently accounts for more than 75% of global EV battery production, and exerts dominant influence over the entire downstream EV battery supply chain, from raw material extraction to processing and manufacturing.

China is the epicenter of more than half of the world's processing and refining capacity for critical EV battery materials such as lithium, cobalt, and graphite. China claims 70% of the world's manufacturing capacity of cathodes and 85% for anodes, the negative and positive points that direct the flow of electrical current in the electrodes key to the construction of a battery.

China effectively leverages its inherent supply chain advantages to reduce costs in logistics, labor, and land management, boasting a 20% cost advantage in EV battery manufacturing over the United States and Europe.

EV ownership in China reached 13.1 million vehicles by the end of 2022, up 67.13% percent year-on-year, or 5.26 million vehicles more than 2021. EV sales also grew 29% in the first quarter of 2023. Furthermore, the market share of EVs in China grew to 38% of all new passenger car sales, higher than the 25% that EVs make up of all new European sales, and the 7% of U.S. sales.

The expansion of renewable energy and EVs enables Beijing to increase China's energy production in a cost-effective and environmentally friendly manner that reduces China's dependence on imported energy and enhances energy stability.

China's increasing adoption of EVs in the domestic car market helps Beijing curb gasoline consumption and reduce its dependence on oil imports, important as tensions boil between China and the U.S. and energy market turmoil simmers as a result of the Russia-Ukraine conflict.

Increased use of renewables and EVs mitigates Beijing's energy vulnerabilities and ultimately enhances its long-term energy security.

In conclusion, the Russia-Ukraine war has had a mixed impact on China's energy strategy. In the short term, the war may appear to have slowed China's transition to green energy.

Over the long-term, however, the war created a strong incentive for Beijing to invest more in renewable energy and support the EV market. This shift will help China increase its reliance on domestic energy production and reduce its dependence on traditional energy resources in the future.

Sources: The China Project