

## EAST ASIAN ENERGY SECURITY AND BIDEN'S LNG PAUSE

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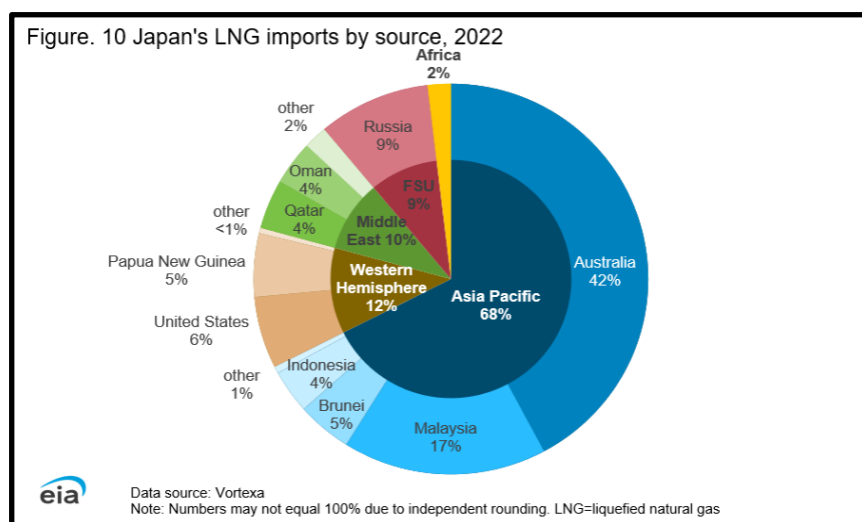
### INTRODUCTION

In 2016, the U.S. began exporting liquefied natural gas. Only eight years later, it has become the [world's largest exporter of LNG](#), shipping 86 million tons internationally in 2023. The growth of U.S. gas production facilitated the [retirement of coal plants](#) domestically, bolstered [U.S. exports](#), offered a powerful [foreign policy lever](#), and provided employment to more than [4 million](#) Americans. Furthermore, it allowed the U.S. to fill energy shortfalls in Europe following Russia's invasion of Ukraine, which compelled European nations to [reduce their usage](#) of Russian hydrocarbons and caused Moscow to shut down [Nord Stream 1](#) (which was then [destroyed](#) in suspected sabotage). As a result, Europe required new sources of natural gas, and the United States was perfectly positioned to mitigate these shortages. From 2021 to 2022, U.S. [LNG exports](#) to Europe increased a remarkable 119%. However, this came at the cost of U.S. LNG exports to Asia, which fell by nearly 50%.

Asia is the [largest importer](#) of liquefied natural gas and leads the world in [primary energy consumption](#). In 2022, the [top three](#) importers of LNG were comprised of two key allies and Washington's chief international competitor: Japan, South Korea, and the world's largest GHG emitter, China. All three of these countries consume vast amounts of [energy](#) and are highly reliant on fossil fuel energy imports. Although a growing capacity exists to fill these needs with renewable energy, such resources are [currently unable](#) to fully meet the requirements for balanced electricity grids and industrial applications. The U.S. is not the primary energy supplier in Asia, but U.S. LNG supply plays a critical role in reducing these nations' emissions, as U.S. natural gas emits less greenhouse gas than [coal, oil](#), and most other natural [gas](#) supply chains. In addition, U.S. natural gas provides energy security to allies, such as Japan and South Korea, in case of disruption or conflict. Ensuring access to sufficient supplies of low-emissions natural gas, accompanied by other innovative, low-carbon, and exportable energy technologies, is vital to American interests. Therefore, the uncertainty created by the Biden administration's LNG pause risks reducing energy security for U.S. allies in East Asia, weakening Washington's national security, and exacerbating global climate change.

## JAPAN

Japan plays a crucial role in Washington's Indo-Pacific security strategy, hosting the [largest U.S. airbase](#) in the Asia-Pacific, forward-deployed [carrier groups](#), and [tens of thousands](#) of service members. It is also the world's [largest importer](#) of liquefied natural gas and has an unrivaled regasification capacity. The country's electricity grid is largely [reliant](#) on fossil fuels, which were responsible for 72% of energy production in 2021; however, the share of hydrocarbons in electricity generation has declined drastically from 89% in 2012. As of 2021, natural gas plants [produce](#) about 39% of Japanese energy, while coal plants generate roughly 30%. Both coal and natural gas are falling out of use for energy production, but coal is slated to decline more slowly than natural gas.



Source: <https://www.eia.gov/international/analysis/country/JPN>

The country [imports](#) 97% of its hydrocarbons, largely from Australia, Malaysia, and Russia. U.S. LNG constitutes only 6% of Japan's [total LNG imports](#); in comparison, Australia supplies 42% of Japan's gas, Malaysia supplies 17%, and Russia 9%. Nevertheless, U.S. LNG imports have [grown](#) significantly over the past 10 years, despite an interruption in 2022 due to the war in Ukraine. Japan [joined](#) the G7's price cap on Russian oil in response to the invasion of Ukraine; however, it created an exemption for natural gas shipped through Russia's Sakhalin 2 pipeline, Japan's main source of Russian hydrocarbons. Japan and South Korea collaborated to launch the [CLEAN Initiative](#) last year; this project is led by Japan's largest power generation company and South Korea's state-owned natural gas company. The initiative is dedicated to reducing leakages and increasing efficiency in the LNG supply chain through [collaboration](#) with LNG exporters and government agencies.

Nuclear and renewable energy are currently the only growing sources of power in the Japanese grid. By 2030, nuclear energy is [slated](#) to constitute roughly 20% of generation, with renewables providing 37%. After the Fukushima disaster in 2011, Japan shuttered many of its nuclear plants and replaced them with natural gas electricity generation. As a result, LNG imports [peaked](#) in

2014, but have steadily declined over the past decade as the country reopens its nuclear facilities and increases its renewable capacity. As of 2023, 17 nuclear plants are [awaiting approval](#) to restart operations.

Japan's declining fossil fuel use and prioritization of renewable and nuclear energy is highly beneficial in the battle against climate change, especially considering the size of the Japanese economy and energy sector. However, Japan's transition strategy ([the Sixth Strategic Energy Plan](#)) [prioritizes](#) continued coal consumption as a key energy source while nuclear and renewable power supplies grow. In fact, the country opened new coal plants as recently as [2023](#). For Japanese policymakers, this [calculus](#) is informed by the affordability of coal and the volatility of the international LNG market — a problem that could be partially alleviated by an increase in reliable supply. Tokyo has also [expressed dissatisfaction](#) with the Biden administration's LNG pause, as the U.S. share of LNG imports was expected to grow substantially, despite the general decline in natural gas usage. Japan is especially concerned about a signed 20-year gas contract that was to be filled through a now-delayed export terminal.

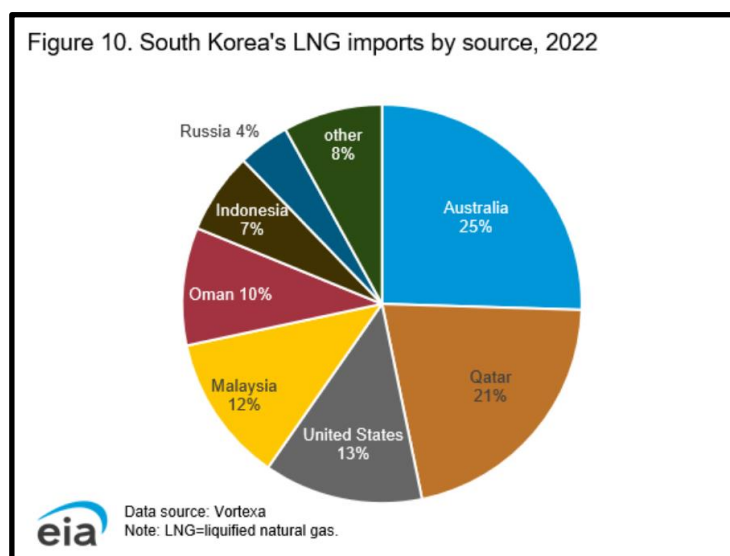
Although Japan's strategy recommends retiring the dirtiest coal plants relatively quickly, a plan that prioritizes natural gas in lieu of coal until cleaner options are available could yield lower emissions, especially if LNG were sourced from cleaner U.S. suppliers. With significant preexisting natural gas infrastructure, Japan could pursue new imports unburdened by the cost of major expansion. However, this is contingent on the availability of stable natural gas supplies, which the U.S. is well-positioned to provide.

U.S. policymakers should continue to promote LNG exports to Japan, also considering that Russia supplies a [larger proportion of](#) Japanese natural gas (which is dirtier and carries a higher risk of political coercion). When compared as an importer with Europe, Japan would face fewer challenges when divesting from Russian gas due to the country's immense regasification capacity and numerous import terminals. Washington should also lobby to reverse Japan's price exemption for Russian gas sourced from Sakhalin 2; if this is infeasible, the U.S. can rely on the low-emissions benefits of U.S. LNG, the growing share of U.S. shipments in overall Japanese imports, and the increase in U.S. natural gas production to make its supplies more viable in the Japanese market and displace Russian gas. Japan's growing share of nuclear and renewable energy also benefits its energy security and reduces its vulnerability to blockades or stoppages in foreign supplies.

## SOUTH KOREA

Natural gas constitutes 18.5% of South Korea's [primary](#) energy supply, compared to oil (36%), coal (25.8%), nuclear (16%), and small percentages of hydro and biofuels. Most of South Korea's domestic energy production is focused on nuclear energy ([~1,920,600 Terajoules](#)), and the country is a major net importer of both oil and coal. South Korea [imports](#) a majority of its crude oil and a plurality of its petroleum products from Middle Eastern countries such as Saudi Arabia, UAE, and Qatar. The majority of South Korea's coal [imports](#) are sourced from the Asia-

Pacific, with Australia supplying the largest share. South Korea is the world's third-largest importer of LNG, behind only China and Japan. As there are no gas pipelines to South Korea, its natural gas imports arrive exclusively as [LNG](#). In 2022, the U.S. supplied 13% of South Korea's LNG imports, even after total U.S. [LNG exports](#) to South Korea fell from the year before — a roughly 35% decrease from 453 billion cubic feet to 293 BCF.



Source: <https://www.eia.gov/international/analysis/country/KOR>

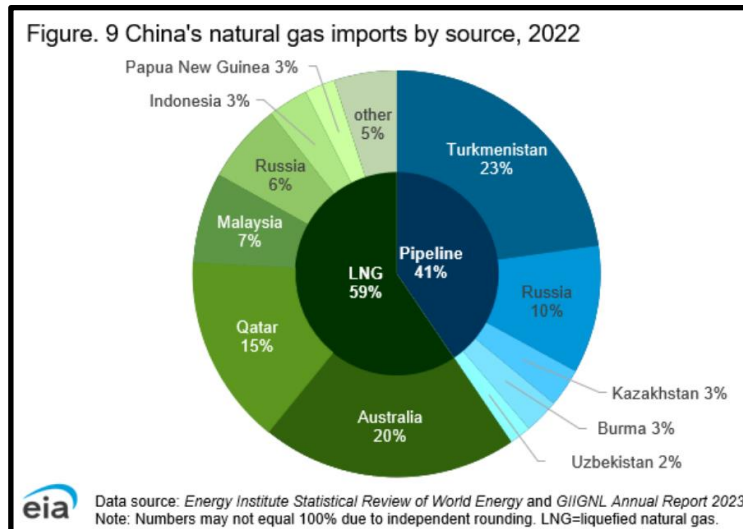
According to the South Korean government's [10th Basic Plan for Electricity Supply and Demand](#), LNG [volume](#) will drop by roughly 13% by 2030 and 63% by 2036. Renewable energy generation is projected to grow dramatically through this period, accompanied by a steady increase in nuclear energy while coal usage drastically decreases. In terms of implementation, South Korea has already made progress in [phasing out coal](#) as it decreased the fossil fuel's share of energy generation by 8% from 2018 to 2021 through a series of coal plant closures. However, on the LNG front, it seems that South Korea's private sector actions are different from its government's projected plans. A report in November 2023 found that South Korea's natural gas industry has invested [\\$8.7 billion dollars](#) into expanding the nation's LNG storage and import capacities. One of the key reasons cited for these investments is a need to strengthen South Korea's [energy security](#) due to the ongoing Russian invasion of Ukraine. If this increase in LNG capacity is filled by importing more LNG from allied nations, especially the United States, then South Korea will not have to rely on or be beholden to adversarial nations such as Russia. Additionally, in July of 2023, South Korean public natural gas company Kogas launched an initiative with Japan's JERA called [CLEAN](#): a plan to lower methane emissions in the LNG value chain. This initiative was implemented after the 10th Basic Plan, meaning that the South Korean government may be reconsidering its position on LNG and determining that it is a cleaner energy source than others and merits increased investment. The discrepancy between projected plans and implemented actions shows the multiple considerations, from climate

impact to energy security, that are being taken into account by South Korea's public and private sectors.

South Korea's energy outlook is critical for U.S. interests in global security, trade, and climate outcomes. The country is one of Washington's closest allies in Asia. A bilateral [mutual defense treaty](#) was signed in October of 1953 and as of 2023, there are [28,500 American troops](#) stationed in South Korea. The U.S. does not want Seoul or other allies to rely too heavily on suppliers in the Middle East (e.g., Qatar, Saudi Arabia, and the UAE) or other more adversarial nations (e.g., China and Russia) for energy. This increases these nations' influence and potential coercive power over South Korea and can put U.S. allies in a more [vulnerable](#) energy and economic situation. Not only that, but these regions of the world are also more volatile, as seen with the [Houthi attacks](#) on shipping in the Red Sea, which means the shipping lanes are more unstable and put our allies in more precarious situations. Furthermore, reducing LNG exports to South Korea may have negative effects on bilateral trade. In 2022, South Korea exported around [\\$85 billion](#) worth of machinery, transportation equipment, metals, and alloys to the U.S. South Korea used over [300,000 TeraJoules](#) of LNG in 2021 for its industrial sector; if the U.S. reduces its LNG exports to South Korea, the costs for these industrial goods will likely rise. Lastly, the availability of low-methane LNG is crucial to reducing the climate impact of South Korea's energy systems in the medium term. Otherwise, the South Korean industry will be forced to import dirtier fuels or leak production through the [carbon loophole](#) by losing out in competition to other countries with less scrupulous energy import policies.

## CHINA

China is the world's [largest energy consumer](#) and [source of emissions](#), imports significant volumes of U.S. LNG, and is Washington's primary international competitor. The country remains [highly dependent](#) on hydrocarbons; 64% of its energy was generated by fossil fuels in 2022, with coal power comprising 42% of total generation. Although renewable sources are the [fastest-growing source](#) of electricity in China, Beijing has authorized 218 GW of [new coal energy](#) in the past two years, enough to power the country of Brazil. [Natural gas](#) plants generated 11% of Chinese energy in 2022, as price fluctuations led to a declining share of the Chinese energy mix for the first time in decades. Despite this slowdown, natural gas remains a growing source of energy in China; 2022 broke a two-decade trend of growing natural gas usage. The country's consumption of natural gas [grew](#) from 8,426 billion cubic feet in 2017 to over 12,814 bcf in 2021, even accounting for the impacts of Chinese policies during the COVID-19 pandemic.



Source: <https://www.eia.gov/international/analysis/country/CHN>

China currently [ranks second](#) globally in LNG imports, trailing only behind Japan. Beijing relies on a [diverse network](#) of suppliers to fill its natural gas needs, with its largest trading partners being Australia (which ships LNG) and Turkmenistan (which supplies gas to China via pipeline). The U.S. was China's fourth largest [natural gas supplier](#) in 2021, but [lost market share](#) in 2022 due to the war in Ukraine. Roughly 60% of imports arrive as LNG while the rest come by pipeline. China's domestic gas fields are far from sufficient to meet current demand, with [reserves](#) of only 235 billion cubic feet in 2021.

The United States and China have had a tenuous relationship in energy, diplomacy, and trade. Beijing was once a [small source](#) for American hydrocarbon imports, with 58 thousand barrels of Chinese crude oil and petroleum products arriving daily in U.S. ports in 1994. However, the shale revolution reversed this trend and allowed the U.S. to become a major exporter of natural gas to China. The year 2021 marked a [high point](#) in Chinese LNG imports from the U.S., with over 450 billion cubic feet of gas delivered. The war in Ukraine precipitated a sharp drop in U.S. LNG deliveries, with less than 100,000 cubic feet delivered in 2022. Nevertheless, many Chinese firms have signed [long-term import contracts](#) with American LNG suppliers, and deals with U.S. companies accounted for 43% of China's gas agreements penned in 2021 and 2022.

There is significant debate within American policy circles about the relationship between LNG exports to China and U.S. security. [Some argue](#) that LNG exports to Beijing increase U.S. leverage and negotiating power, while [others contend](#) that Chinese energy companies use U.S. natural gas to further the nation's expansionist military objectives and fuel industries with questionable human rights records. Regardless of these opinions, the increase in U.S. LNG shipments to Europe in response to the war in Ukraine showcases the ability of U.S. natural gas companies to quickly reroute exports in times of conflict. On the other hand, China's diverse array of natural gas suppliers would more easily fill the gap if U.S. imports came to a halt, although many of these shipments pass through the Strait of Malacca, a choke point which would become [highly vulnerable](#) to disruption in case of a conflict. Therefore, U.S. LNG exports

to China are more consequential for Chinese energy security than America's, as Washington can more easily threaten to [blockade energy shipments](#) to China from other nations and find other customers in case of a Chinese ban on U.S. LNG imports.

The U.S. should offer its support to increased LNG exports to China, with the explicit purpose of reducing the country's usage of coal and dirtier natural gasses. These shipments have the potential to greatly reduce China's energy emissions, regardless of their security implications. Beijing is the world's largest producer of greenhouse gasses; the country creates [over a quarter](#) of global emissions and [more than twice](#) as much CO2 as the second-largest source, the U.S. The country continues to [construct](#) coal plants and other legacy power infrastructure while Turkmenistan, its largest source of natural gas, is [notorious](#) for methane leakage and high emissions in its gas production and transportation sectors. Given the continued expansion and overall scale of Chinese electricity generation, the climate dividends of replacing coal and leakier sources of natural gas with cleaner natural gas from the U.S. could be enormous.

## CONCLUSION

As Asia's energy requirements continue to increase with growing populations and economies, the U.S. stands at a critical juncture. It can either fill growing demand with low-emission natural gas or risk allowing other nations to address these energy needs with dirtier sources. The former option gives the U.S. the ability to bolster the energy security of allies such as Japan and South Korea, grants Washington a powerful policy tool to influence Beijing and reduce China's climate impact, and enhances U.S. agency over emissions in Asia. Beyond the three countries discussed here, massive uncertainty in the demand trajectory for Asian energy will also be influenced by South and Southeast Asian importers including India, Pakistan, Bangladesh, and Thailand. Therefore, the Biden administration should lift its pause on LNG exports and consider other solutions to reduce leakages in the natural gas supply chain, such as [third-party verification](#) for the methane emissions of natural gas shipments.

## ABOUT THE AUTHORS

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