

# **Energy Outlook in Japan and Implications for Saudi Arabia**



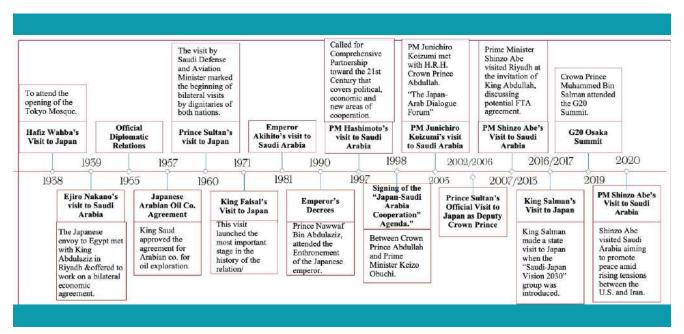
## **Energy Outlook in Japan and Implications for Saudi Arabia**

Saudi Arabia and Japan enjoy a strong relationship and have supported each other through many tumultuous developments since they established diplomatic relations in 1955. The first section of this paper touches on the current status of Saudi-Japan diplomatic, economic, and energy relations. The second section describes and analyzes Japan's changing energy policy (renewable, fossil fuel, and nuclear) in the wake of the Fukushima nuclear disaster and, more recently, the Ukraine War. The paper also assesses the impact of each incident on Saudi Arabia, Japan's biggest oil importer. Lastly, the report concludes with future perspectives and policy recommendations.

#### **Japan-Saudi Relations**

Diplomatic relations between Saudi Arabia and Japan were established in 1955. Saudi Arabia was the first country in the Gulf Cooperation Council (GCC) to formalize ties with Japan, realizing its potential future importance. At the diplomatic level, both countries have consistently engaged in reciprocal visits, aiming to develop closer and more strategic ties. Even before 1955, Saudi officials made numerous visits to Japan, which constituted a cornerstone of the development of the relationship. Most important was the visit of the then Saudi Ambassador to the United Kingdom, Hafiz Wahba, to Japan in 1938, whom the late King Abdulaziz ordered to attend the grand opening of the Tokyo Mosque. A year later, the Japanese government's envoy to Egypt visited Riyadh and met with King Abdulaziz. Equally important was the remarkable visit of King Faisal in 1971 who made an Asian tour to Taiwan and Japan, as part of the anti-communist campaign. Both governments have since continued visits at all levels and at regular intervals. Table 1 shows the visits between the two countries from 1938 to 2020.

Table 1 Saudi Arabia – Japan Official Visits 1938 to 2020



Economically speaking, Japan is one of Saudi Arabia's most important partners. As of 2021, Japan's imports from Saudi Arabia amounted to \$27.51 billion, while its exports were \$4.45 billion. About 70% of exports from Japan to Saudi Arabia are transportation equipment, mainly automobiles, while crude oil accounts for most of Japan's major import items from the Kingdom. Similarly, Saudi Arabia imported around \$6.06 billion and exported \$2.08 billion to Japan (Japan External Trade Organization 2022).

Recent decades have witnessed an increase in trade volume between the two countries, both in oil and non-oil products. The economic relationship between the two countries was reaffirmed with the establishment of the Saudi-Japan Vision 2030 group (SJV 2030) in 2017, which opened the door for renewed cooperation and mutuality between Japan and Saudi Arabia. The Saudi-Japan Vision 2030 group (Saudi-Japan Vision 2030 2017) aims to facilitate public and private sector involvement between the two sides by aligning and reporting on strategic initiatives that contribute to the objectives of each country's national growth and development strategies. This step has broadened the scope of cooperation to include a wide range of fields that were not considered in the past, such as renewable energy, climate change, infrastructure, entertainment, maritime security, and international cooperation. A key example of this is Japan's eagerness to invest in Saudi Arabia's proposed 2030 giga-projects. Companies like Japanese conglomerate Softbank announced that it plans to invest as much as \$25 billion in Vision 2030 projects in the Kingdom (Hamilton 2019). In 2021, SoftBank made its first investment of \$125 million in Saudi based customer communication platform, Unifonic (Martin 2022). The Unifonic deal is funded through SoftBank's Vision Fund 2, and the company plans to start a listing on a global exchange within the next three years. This points towards a steady and continued increase in

trade relations in various sectors between the two countries.

Regarding energy cooperation, Saudi Arabia has long been Japan's primary energy source. As of July 2022, Japan imported an annual total of 27.39 million oil barrels, of which Saudi Arabia provided the largest percentage at 40% (Arab News 2022; Klein 2022). Table 2 shows Japan's 2021 oil imports from the GCC, with Saudi Arabia accounting for 39.1% of oil imports. Table 3 shows Japan's Middle East oil imports from 1965 to 2015, highlighting that Saudi Arabia has maintained its position as the biggest importer over that period, while at the same time underscoring Japan's continued dependence on Saudi oil. Additionally, the two countries recently renewed a joint crude oil storage scheme in Okinawa, providing quick and easy access to other critical customers of Saudi Arabia across the Far East. Tokyo has been paying for storing Saudi Arabian oil at leased storage tanks in Okinawa under the "Joint Crude Storage by Producing Countries" (Agency for Natural Resources and Energy 2017) agreement with Saudi Aramco. In return, Japan prioritizes the crude oil stored at Okinawa for commercial purposes, which can reach 8.18 million barrels, in the event of an emergency.

Table 2 Japan's oil import from the GCC in 2021 (Ministry of Economy, Trade, and Industry 2022)

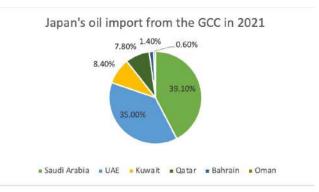
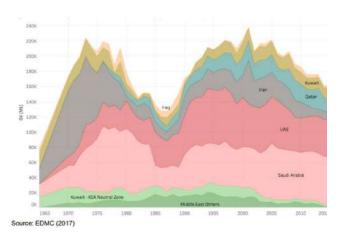


Table 3 Japan's Oil Imports from the Middle East (million liters) - 1965-2015 (Ministry of **Economy, Trade, and Industry 2017)** 



In addition to fossil fuels, the two countries have cooperated in renewable energy. Talks began when Saudi Arabia announced its Vision 2030, mainly aiming to diversify its economy and reduce economic dependence on oil. One of the most significant projects the two countries have been working on is the production of blue ammonia. Aramco and the Institute of Energy Economics, Japan (IEEJ), in partnership with SABIC, have successfully demonstrated the production and shipment of blue ammonia from Saudi Arabia to Japan with support from the Japanese Ministry of Economy, Trade, and Industry (Ratcliffe 2020). Jane Nakano, a senior fellow at the Center for Strategic and International Studies, stated that this project "reaffirmed Aramco's view that existing technology solutions (i.e., the extraction, processing, and conversion of natural gas into hydrogen and ammonia) can help provide costeffective and scalable low-emission solutions" (Nakano 2022). This demonstrates that projects of this kind will continue to take place in the long run, demanding new, but needed, areas for cooperation.

Similarly, Japan plays a vital role in the newly developed Rabigh Solar PV project. The Japan Bank for International Cooperation (JBIC) signed on March 2021 an extended agreement with South Rabigh Renewable Energy Company (SRREC) of Saudi Arabia in which JBIC will provide project financing amounting to approximately \$78 million. The loan is co-financed with Mizuho Bank, Ltd and Al Rajhi Banking & Investment Corporation of Saudi Arabia, and the total cofinancing amount is approximately \$157 million. This project became the first to draw on financing from an export credit agency, and it is the first loan by JBIC for an Independent Power Producer (IPP) (Japan Bank for International Cooperation 2021). The aim of this project is to build and operate a 300MW (Kiyasseh 2022) solar PV plant in Rabigh, in which the electricity produced will be sold to Saudi Power Procurement Company over 25 years. Overall, this level of cooperation shows Saudi Arabia's readiness to pursue various renewable energy options as part of its goal to generate 50% of its electricity from clean sources by 2030.

Cooperation between Saudi Arabia and Japan is not limited to the oil sector. Instead, it is expanding to include areas like renewable energy, infrastructure, and trade. Based on current trajectories, the two countries will likely continue exploring new opportunities to strengthen their economic ties.

### Japan's Energy Policy

While the third largest economy in the world, Japan is also a resource-poor country. This means that the government will always depend on energy imports for its economy to grow. Japan is dependent on imports for 94% of its primary energy supply, which makes its energy supply structure extremely vulnerable. Japan meets less than 10% of its primary energy use from domestic sources. adding to this challenge, Japan is particularly prone to natural disasters. Japan experiences extreme climatic variations, such as typhoons, seasonal rain fronts, and heavy snowfall along the coast of the Sea of Japan. Japan is also vulnerable to tsunamis, owing to the fact that it experiences countless earthquakes year-round.

The large-scale negative implications of Japan's harsh geography and climate on energy security were made shockingly clear in the aftermath of the 2011 Fukushima nuclear disaster, where flooded nuclear reactors led to deadly explosions and nuclear meltdowns. Subsequently, Japan's Ministry of Economy, Trade, and Industry (METI) developed a Strategic Energy Plan that is updated annually to outline Japan's energy policies by 2030. The main principles of Japan's energy policy are "Safety," "Energy Security," "Economic Efficiency," and "Environmental Protection," also known as (S+ 3E) (Japan 2050 Low Carbon Navigator 2014). Under this policy, Japan aims to reach carbon neutrality by 2050 and nationally determined contributions under the Paris Agreement (NDCs) by 2030. Japan has stressed its commitment despite some viewing the stated goals as ambitious, especially in reducing its greenhouse gas emissions compared to Japan's continued growing energy need.

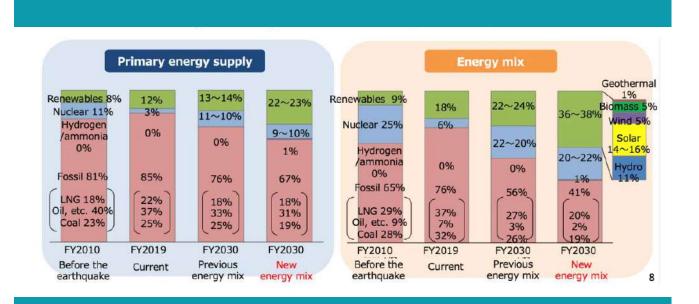
To achieve its climate goals, Japan intends to do the following:

Raise the reduction rate of the 2030 energy

- efficiency target by 20% and accelerate energy efficiency nationwide with the amendment of the Act on the Rational Use of Energy.
- Utilize renewable energy as a top priority on the premise of S+3E. This includes doubling the ratio of renewable power generation by 2030 compared to 2019.
- Hydrogen and ammonia will achieve a 1% share in the power generation mix in 2030.
- Inefficient coal-fired power will be faded out in 2030. In addition, the thermal power ratio in the power generation mix will be lowered as much as possible.
- The necessary amount of nuclear power will be utilized continuously on the premise of safety while public trust is being ensured (International Energy Agency 2021).

Table 4 shows the energy mix in numbers:





The Japanese government believes integrating renewable energy into the energy mix is the key to energy security and easing dependence on imports from overseas, such as Russia or the Middle East. However, renewable energy such as PV and Wind tends to increase generation costs, which results in a heavy burden for energy consumers to pay more tax or utility fees. Therefore, the continuation of such a policy depends on procuring low-cost equipment and construction in the future. According to the sixth strategic energy plan released in October of 2021 and based on the assumption that PV panels costs will go down in terms of the world standard price, PV will be a more cost-competitive resource than fossil fuel by 2030. The table above shows the 2030 fossil fuel target at 41%, a 45% drop from 2019. This shows the government's keenness to decrease the percentage of fossil fuel in the energy mix over time.

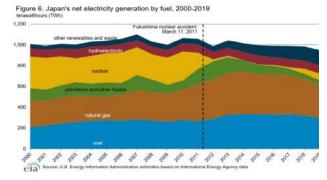
#### The Fukushima Nuclear Disaster in 2011

Before the devastating Fukushima nuclear accident in 2011, nuclear power accounted for about 30% of Japan's total electricity generation. However, this percentage has steadily reduced to 3% by 2019 due to the closure of all nuclear power plants for safety inspections and substantial public pressure. (Halm, 2022). Table 5 shows how Japan's energy mix has shifted after the accident. As a result of nuclear energy being almost completely cut off, there was increased usage of coal, natural gas, and oil which Japan saw as a necessary and reasonable resource for electricity generation. As a result, oil imports from overseas, especially from the Middle East, increased. This resulted in an immediate shift in Japan's energy mix toward oil and natural gas. In 2012, Japan ranked as the world's second-largest net importer of fossil fuels and the world's largest importer of liquefied natural gas to accommodate shortages and save a declining economy (US Energy Information Administration 2019).

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Table 5 Japan's Electricity Generation by Fuel 2000 to 2019



As of 2022, and after bringing 10 out of the 33 operable nuclear reactors back online, the share of electricity generated by nuclear power has risen to 7.2% (Klein 2022; World Nuclear Association 2022). Yet, the amount of human and material loss due to the incident has pressured the government to adjust its nuclear energy plans.

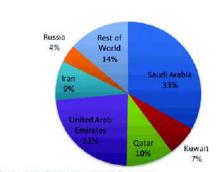
Ten years after Fukushima, and with other climate issues rising, the Japanese government sees the importance of bringing nuclear energy back to the table. According to the new industry minister Mr. Nishimura Yasutoshi, all nuclear power plants are safe, operable, and ready to restart. He claims using nuclear power plants is vital to meet the 2030 target of a 46% cut in greenhouse emissions and achieve the country's pledge of reaching carbon neutrality by 2050 (Yamaguchi 2021). Still, the fact that Japan continues to be prone to natural disasters means it will need to keep nuclear energy in check and require the government to make continuous adjustments to its energy policy now and in the future.

#### **Implications for Saudi Arabia**

Despite its objective to reduce dependency on Middle East oil, Japan is still highly dependent on oil imports from the region. Concerns are ongoing about instability in the Middle East and how it might impact Japan's energy supply as well as its own domestic energy diversification goals. Incidents like the Fukushima disaster in 2011 or COVID-19, however, complicate Japan's efforts to have sufficient room for diversification. One result has been increased cooperation between Saudi Arabia and Japan in traditional and alternative energy over the past ten years. Since Fukushima, Japan has produced six energy plans, in which capitalizing on energy supply from the Middle East has been vital. In the 2022 Diplomatic Bluebook that Japan's Ministry of Foreign Affairs produces annually, Japan indicated how important it is to work toward the stability of the Middle East as Japan depends on the region for about 90% of their crude oil imports (Japanese Ministry of Foreign Affairs 2021). Japan realizes that in the long run, this dependency may not be in the interest of the country's stable energy mix, especially with fluctuating oil prices, but for the time being, it is their only reliable option for powering old thermal power stations. With the loss of 30% of its electricity capacity due to Fukushima and the fact that renewable energy technology has remained expensive, there is simply no alternative for oil imports and the Middle East remains the most ideal partner in this regard.

A key component of the stable Saudi-Japan energy relationship is that Saudi Aramco has stored oil in Okinawa in Japan since 2011. This has enabled Aramco to reduce freight costs and increase shipping flexibility to compete for an increasing share of the Asia-Pacific markets. The decision was also taken to prioritize the supply to Japan in an emergency, an extremely important consideration for Japan's energy security. The capacity of the stored oil has increased respectively over the years and, as of 2022, stood at 9 million barrels (Kumagai 2019). Table 6 shows Japan's crude oil import by source in 2011, right after the Fukushima disaster (Zulkifli, 2016). Japan's Ministry of Economy and Trade (METI) said that Japan witnessed an increase of 33% in petroleum and other imports from the Middle East after the Fukushima nuclear crisis leading to a significant trade deficit (Tabuchi 2012). Japan has had to compromise on aspects of its economy to maintain secure access to energy. It is noteworthy that Japan is the 3<sup>rd</sup> largest energy consumer behind China and India in the Asia-Pacific. Considering population differences, one can see that Japan's consumption is very high.

Table 6 Japan's Crude oil Imports by Source



Japan's Crude Oil Imports by Source, 2011

As Saudi Arabia and Japan launch their ambitious environmental initiatives, experts say the two countries have much to learn from one another,

given that both the Kingdom and Japan remain heavily reliant on fossil fuels. By 2030, Japan aims to have 800,000 fuel cell vehicles and more than 5 million residential fuel cells, and to establish an international hydrogen supply chain, according to the IEA (Malek and Edwards 2022). Japan's transitional experience could prove instructive for Saudi Arabia and other developing economies in the region, eager to cut their emissions. Japan hopes to reach the de-carbonization of its coalfired plants using clean ammonia as a fuel additive. Therefore, hydrogen is expected to play a central role in their clean energy transition.

Saudi Arabia is well positioned to play a role in serving these new demands. As mentioned, Saudi Aramco has already shipped 40 metric tons of blue ammonia to Japan in a widely commended demonstration of clean energy cooperation. JERA, a program under Japan's biggest electricity company TEPCO announced that it would seek 500,000 tons of fuel ammonia a year, and Saudi Arabia is viewed as one of the countries to provide these new resources (JERA 2022). At the same time, Japan, by 2030, Japan will still have a need for oil mainly from Saudi Arabia, fuel auto vehicles, heavy machinery and petrochemical products.

#### Impacts of the Ukraine War on **Energy Sources in Japan**

Japan was one of the first countries to join Western sanctions against Russia for attacking Ukraine in February 2022. Sanctions were targeting oligarchs and officials in the Putin administration, freezing the assets of Russian banks, and imposing export restrictions on semiconductors and other hightech products. Japan has yet to pull the plug on energy projects, and if it decides to proceed, the short-term impact of such curbs will be minimal. However, there could be long-term repercussions on Japan's LNG supply-demand situation. In addition, Asian countries that joined the U.S. efforts to increase economic pressure on Moscow will be forced to forgo cooperation with Russia in other areas of national interest. This tradeoff "

Despite its objective to reduce dependency on Middle East oil, Japan is still highly dependent on oil imports from the region



is likely most pronounced for Japan, where Tokyo's recent sanctions on Russia have already compromised the World War II peace treaty negotiations and Prime Minister Kishida's efforts to improve ties with Moscow.

On the one hand, Japan wants to maintain its energy diversity by importing oil and gas from Russia, especially given their geographic proximity, which makes energy transport safer, easier, and much cheaper. On the other hand, Japan understands the necessity of maintaining its position in the global order, siding with its security ally, the US, to whom they are deeply dependent for national security. Regardless of the strategic ambiguity the US has shown regarding Taiwan, Japan would stand to take a great risk by maintaining positions that conflict with American political interests.

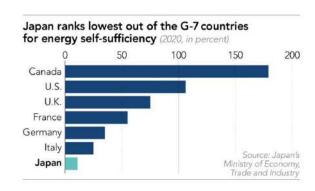
Other points of contention exist for Japan and Russia as well. Territory disputes over the Kuril Islands are an ongoing obstacle that will need to remain a top priority for Japan in order to improve the relationship between the two countries. The same can be said for Russia, whose recent actions in Ukraine only isolate them further from the global community. Ideally, Japan would like to find the right balance between supporting US sanctions on Russia and upholding its foreign policy agenda toward Russia. Realistically however, Japan's other security concerns, such as China invading Taiwan - only 70 miles away from Japan's Yonaguni Island - outweigh any amends with the Russians

Regarding energy implications, the relationship between Russia and Japan improved slightly before the Ukraine War, given the realization by both sides of the importance of diversifying their respective energy policies. By 2022, Japan's imports of Russian LNG amounted to around 9% while total crude oil imports stood at about 4%, according to the latest Ministry of Finance data (Kumagai and Gordon 2022). Although these numbers may not indicate a heavy dependence

on Russia, it still highlights the need for Japan to diversify its energy resources. If Japan were to stop oil imports from Russia, it would mean that the 9% indicated above would have to be replaced by either the United States or, most likely, the Middle East, which would compromise all efforts by the Japanese government over the years to reduce dependence on Middle Eastern oil.

Additionally, Japan has decided, along with other G7 nations, to begin to phase out coal imports from Russia Prime Minister Kishida stated at a press conference: "Japan will ban Russian coal imports. We will gradually cut (coal) imports by securing alternative sources swiftly." This decision reinforces Japan's resolve to be aligned with other G7 nations to punish Moscow, though this will be a gradual process rather than an immediate, all-out ban. There is also no change to the plan for Japan to retain its interests in the Sakhalin 1 and 2 Russian oil and natural gas projects. This is mainly because Japan ranks lowest of the G7 countries for energy sufficiency (Japan's Ministry of Economy, Trade, and Industry 2022) and a decision to phase out all energy cooperation with Russia would threaten to add to surging gasoline costs that have stoked inflationary fears.

Table 7



Overall, the current Ukraine crisis has underscored its negative implications on the global energy map, which naturally have similar negative consequences for Japan. The efforts and resources the Japanese are putting into place to limit the

impacts of the Ukraine War could be more useful if invested in China and Taiwan. Hence, Japan needs to do more to mitigate the fallouts of its sanctions by balancing security relations with the US and its national security agenda.

#### **Implications for Saudi Arabia**

Japan's position on the Ukraine war did not come as a surprise to Saudi Arabia as Japan tends to follow suit with the policies pursued by the United States. This is something the Saudi government understands and do not see as a challenge. In fact, Saudi Arabia and the United States have always enjoyed a strong relationship, which was a positive component to the Saudi- Japanese relationship. Here, it is essential to emphasize that the difficult period that US-Saudi relations are currently experiencing is not impacting the strategic relationship that Saudi Arabia and Japan have enjoyed for so long. There is an interdependent relationship between the two countries based on shared interests, regardless of external factors. What helps is that the leadership in Saudi Arabia and Japan prefer not to mix political differences with other vital areas such as the economy. As the United States and other Western countries were pressuring Saudi Arabia, a key member of OPEC, to increase oil production for global prices to go down, Japan sent its Middle East envoy to Saudi Arabia, urging big energy exporters to maintain sustainable energy flow. In fact, Japan has always played an active role in resolving regional conflicts as its security matters a great deal to the Japanese economy. For instance, the late Prime Minister Shinzo Abe visited Iran in 2019 to mediate between Iran and the GCC countries. Japan has done the same now with the Ukraine crisis. Saudi Arabia has shown appreciation to Japan for trying to resolve differences. It has notably vowed to work with Japan for a stable international oil market.

Overall, the Ukraine War has not affected the relationship between Saudi Arabia and Japan. Saudi Arabia made it clear that they will not take

sides, and Japan has shown the utmost respect. If anything, both countries could capitalize on the good relations Saudi Arabia enjoys with Russia and Japan's unbreakable ties with the US to work out their differences.

# Japan-Iran Relations: Between Riyadh and Washington

It is not an exaggeration to say that Japan's relations with Iran depend to a large extent on the US. Iran used to be Japan's third most crucial oil supplier after Saudi Arabia and the United Arab Emirates. However, this reality changed after introducing more sanctions following the withdrawal from the Joint Comprehensive Plan of Action in 2018. Japan's low-key approach towards the JCPOA deal has been shaped primarily by its security alliance with the US and its constant dependence on imported oil (Harold 2018). During the lead-up to the JCPOA's signing in 2015, Japan substantially reduced its oil imports from Iran to enhance pressure on the regime to enter negotiations over ending its nuclear weapons program (Harold 2018). Japan needs to align its position with the US, but they also have other concerns to consider. Knowing that Iran could be an option for crude oil procurement, Japan cannot afford but to keep an open-door policy with Iran. As stated by RAND researcher Scott W. Harold, "Japan does not want the JCPOA to fail, but it won't speak up forcefully to preserve it" (Harold 2018). This stems from Japan's realization that Iran, once sanctions are lifted, will be an excellent option for crude oil procurement.

Nonetheless, Japan will only be able to make such a move if it consults Washington. Japan used to import around 6% of its oil from Iran before the imposed US sanctions on November 2018 (Harold 2018). This decision had a significant impact on Iranian oil sales to Japan. Japan's imports of Iranian crude decreased by 33% between September 2018 and March 2019. In March 2019, Japanese refineries eventually halted all Iranian oil imports.

At the beginning of 2022, and with a new democratic administration in office, there were talks for Japan to resume oil imports from Iran after progress on the nuclear deal. Tsutomu Sugimori, Chairman of Japan's largest refinery (ENEOS), said they would be ready to resume oil import within two to three months of any 2015 Iran nuclear deal revival (Iran International 2022). This would have allowed Japan to import oil from Iran at a lower price, especially given that the easing of US maximum pressure sanctions would bring an extra 2 million barrels of oil daily onto the world market (S&P Global Commodity Insights 2022). This hope, however, did not materialize. Instead, the Biden administration imposed new sanctions on Iranian oil and petrochemicals entities. With the current crackdown on Iranian protests, the relationship with Iran is only worsening. Saying this, Japan will continue to have a complex relationship with Iran until Washington decides to take another route.

**Conclusion** 

Saudi Arabia and Japan enjoy a unique relationship around energy that binds them through various global crises. The future holds the potential for cooperation between the two Asian countries regarding traditional, renewable, and alternative energy. According to an assessment from Japan's Tokyo Electric Power Company (TEPCO), despite arguments that oil will not be in the picture, Japan will still depend on Saudi Arabia for oil by 2030. While the dependence on oil will eventually decline, it will not do so steeply, given the pace at which alternative energy is developing. In addition, the Fukushima nuclear disaster, followed by COVID-19 and now the Ukraine War, has influenced the global energy market differently and showed the persistent need for adjustments to global climate and energy transition goals. A year ago, Western countries asked big energy producers to lower their oil production for climate purposes. The same countries are now keen to see energy producers increase oil production as many of them, including the US, have entered a recession due to the Ukraine War. If anything, this indicates an apparent uncertainty about the global energy direction.

As a result, there is a need, now more than ever, for countries to work together to achieve global good while also looking at each country's individual needs and interests. Japan, the third largest economy in the world and one of the biggest importers of fossil fuels, and Saudi Arabia, the largest oil exporter, have a responsibility to work together to address the implication of fossil fuels on the climate and work towards achieving their respective climate goals. This can be done by introducing energy policies that go hand in hand with global needs and address global problems. In this context, both countries are heading in the right direction and aspire to be an engine of positive change toward the environment.

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Japan has always played an active role in resolving regional conflicts as its security matters a great deal to the Japanese economy

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#### **Bibliography**

- Agency for Natural Resources and Energy, "Strengthening response to oil supply crises from overseas," 2017. https://www.enecho.meti.go.jp/about/whitepaper/2017html/3-7-1.html
- Arab News, "Saudi Arabia and UAE supplied 90% of Japan's crude oil needs in June," Arab News, July 31, 2022. <a href="https://www.arabnews.jp/en/business/article\_77293/">https://www.arabnews.jp/en/business/article\_77293/</a> Caline Malek and Robert Edwards, "Climate Change mitigation: What Saudi Arabia and Japan can learn from one another," Arab News, April 15, 2022. <a href="https://www.arabnews.jp/en/saudi-arabia/article\_43720/">https://www.arabnews.jp/en/saudi-arabia/article\_43720/</a>
- Catharina Klein, "Import Volume of crude oil Japan FY 2021, by country," Statista, July 26, 2022. <a href="https://www.statista.com/statistics/761568/japan-crude-oil-import-by-country/#:~:text=In%20fiscal%20year%202021%2C%20Japan's,What%20is%20fueling%20the%20nation%3F">https://www.statista.com/statistics/761568/japan-crude-oil-import-by-country/#:~:text=In%20fiscal%20year%202021%2C%20Japan's,What%20is%20fueling%20the%20nation%3F</a>
- Global Commodity Insight, October 23, 2019. Japan, Saudi Arabia to renew crude oil storage deal in Okinawa | S&P Global Commodity Insights (spglobal.com)
- Hiroko Tabuchi, "Rise in Oil Imports Drives a Rare Trade Deficit in Japan," The New York
  Times, January 24, 2012. <a href="https://www.nytimes.com/2012/01/25/business/global/rise-in-oil-imports-drives-a-rare-trade-deficit-in-japan.html">https://www.nytimes.com/2012/01/25/business/global/rise-in-oil-imports-drives-a-rare-trade-deficit-in-japan.html</a>
- International Energy Agency, "Japan's Energy Policy Review," November 4, 2021.

  <a href="https://iea.blob.core.windows.net/assets/3470b395-cfdd-44a9-9184-0537cf069c3d/Japan2021\_EnergyPolicyReview.pdf">https://iea.blob.core.windows.net/assets/3470b395-cfdd-44a9-9184-0537cf069c3d/Japan2021\_EnergyPolicyReview.pdf</a>
- Iran International, "Japanese Refiner Prepares to Resume Iranian Oil Imports," IranIntil, February 17. <a href="https://www.iranintl.com/en/202202175037">https://www.iranintl.com/en/202202175037</a>
- Isobel Asher Hamilton, "Saudi Arabia is reportedly talking to Softbank about pouring billions into its second Vision Fund," Insider, October 28, 2019. <a href="https://www.businessinsider.com/saudi-arabia-reportedly-considers-investing-in-softbank-vision-fund-2-2019-10">https://www.businessinsider.com/saudi-arabia-reportedly-considers-investing-in-softbank-vision-fund-2-2019-10</a>
- Isabeau van Halm, "Japan eyes return to nuclear power," Energy Monitor, October 3, 2022. <a href="https://www.energymonitor.ai/sectors/power/weekly-data-japan-eyes-return-to-nuclear-power#:~:text=Before%20the%20accident%20in%202011,of%20power%20in%20the%20country.">https://www.energymonitor.ai/sectors/power/weekly-data-japan-eyes-return-to-nuclear-power#:~:text=Before%20the%20accident%20in%202011,of%20power%20in%20the%20country.</a>

- Jane Nakano, "Saudi Arabia's Hydrogen Industrial Strategy, Saudi Arabia's Hydrogen Industrial Strategy," Center for Strategic and International Studies, January 7, 2022. https://www.csis.org/analysis/saudi-arabias-hydrogen-industrial-strategy
- Japan 2050 Low Carbon Navigator, "Japan's "3E+S" Energy Policy Objectives," 2014. http://www.en-2050-low-carbon-navi.jp/assets/onepage/3epluss.pdf
- Japan Bank for International Cooperation, "Project Financing for Solar PV Project for Kingdom of Saudi Arabia," JBIC, March 22, 2021. https://www.jbic.go.jp/en/information/press/ press-2020/0322-014436.html
- Japan External Trade Organization, "Overview and basic statistics," JETRO, October 24, 2022. https://www.jetro.go.jp/world/middle\_east/sa/basic\_01.html
- Japan's Ministry of Economy, Trade, and Industry, "Japan's government decides to retain a stake in new Sakhalin-1 operator," Nikkei, November 4, 2022. https://www.nikkei.com/article/ DGXZQOUA0450G0U2A101C2000000/
- Japanese Ministry of Foreign Affairs, "Overview of the International Situation and Outlook for Japan's Diplomacy," 2021. https://www.mofa.go.jp/files/100387219.pdf
- JERA, "Group Corporate Communication Book," TEPCO, February 2022. https://www.jera.co.jp/static/files/english/corporate/CCB/JERA2021 EN Web 20211201.pdf
- Lama Kiyasseh, "Strong momentum in Saudi Arabia's drive toward renewables and infrastructure," Middle East Institute, January 4, 2022, <a href="https://www.mei.edu/publications/">https://www.mei.edu/publications/</a> strong-momentum-saudi-arabias-drive-toward-renewables-and-infrastructure
- Mari Yamaguchi, "Japan OKs plan to push clean energy nuclear to cut carbon," AP, October 22, 2021. https://apnews.com/article/climate-business-environment-and-nature-nuclear-powerenergy-policy-6e5f8d7572f5d2fbab1ef200e7f70737
- Mathew Martin, "SoftBank's First Saudi Deal Follows UAE, Turkey Investments," Bloomberg, September 15, 2022. https://www.bloomberg.com/news/articles/2021-09-15/ softbank-makes-first-saudi-deal-together-with-wealth-fund-s-unit
- Ministry of Economy, Trade, and Industry, "Japan's oil imports from the Middle East," METI, 2017. https://www.resilience.org/stories/2015-07-01/asia-depends-on-middle-east-for-66-of-its-oil-imports/
- Ministry of Economy, Trade, and Industry, "Japan's source of crude oil imports," METI, July 25, 2022. http://www.garbagenews.net/archives/2087658.html

- Ministry of Economy, Trade, and Industry, "Strategic Energy Plan towards Carbon Neutrality by 2050," METI, September 2, 2022. https://www.enecho.meti.go.jp/en/category/special/article/detail\_168.html
- Noraini Zulkifli, "Japan and the South China Sea," Andalas Journal of International Studies,

  May 2016, <a href="https://www.researchgate.net/publication/324689302\_Japan\_and\_the\_South\_China\_Sea">https://www.researchgate.net/publication/324689302\_Japan\_and\_the\_South\_China\_Sea</a>
- S&P Global Commodity Insights, "Japan's ENEOS Could Resume Iran oil Imports 2-3 months After Nuclear-Deal," S&P Global, February 17, 2022. <a href="https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/021722-japans-eneos-could-resume-iran-oil-imports-2-3-months-after-nuclear-deal-chairman">https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/021722-japans-eneos-could-resume-iran-oil-imports-2-3-months-after-nuclear-deal-chairman</a>
- Saudi-Japan Vision 2030, "Compass of New Partnership," METI, March 2017.https://www.mofa.go.jp/files/000237093.pdf
- Scott Harold, "What does Japan Think of the Iran Nuclear Deal?" RAND, March 26, 2018. https://www.rand.org/blog/2018/03/what-does-japan-think-of-the-iran-nuclear-deal.html
- Takeo Kumagai and Meghan Gordon, "Japan does not see sanctions on Russia causing major energy supply disruption," S&P Global, February 24, 2022. <a href="https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/022422-japan-does-not-see-sanctions-on-russia-causing-major-disruption-to-energy-supply">https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/022422-japan-does-not-see-sanctions-on-russia-causing-major-disruption-to-energy-supply</a>
- Takeo Kumagai, "Japan, Saudi Arabia to renew crude oil storage deal in Okinawa," S&P Global Commodity Insights, October 23, 2019. <a href="https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/102319-japan-saudi-arabia-to-renew-crude-oil-storage-deal-in-okinawa#:~:text=Tokyo%20%E2%80%94%20Japan%20and%20Saudi%20Arabia,Tokyo%20 amid%20mounting%20geopolitical%20woes.
- Verity Ratcliffe, "Saudi Arabia Sends Blue Ammonia to Japan in World-First Shipment," Bloomberg, September 27, 2020.
- US Energy Information Administration, "Rankings about energy in the World," 2019. https://www.eia.gov/international/overview/world?fips=JA
- World Nuclear Association, "Nuclear Power in Japan," World Nuclear Association, October 2022. <a href="https://world-nuclear.org/information-library/country-profiles/countries-g-n/japan-nuclear-">https://world-nuclear.org/information-library/country-profiles/countries-g-n/japan-nuclear-</a>

