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How the Ukraine war has affected Asia's race to net zero

As climate change delivers more extreme weather across Asia and the rest of the world, we are likely to see energy security challenged and pressure to backslide increasing

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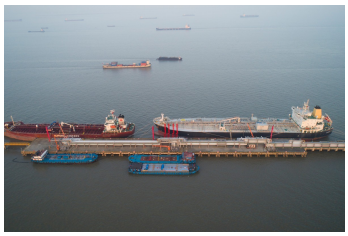
By Warren Patterson



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Asia's energy security trumps green push

Russia's invasion of Ukraine has rattled energy markets and led to governments in Asia fretting about energy security. The importance placed on energy security has meant that the green push from governments could be derailed, at least in the short term

Emission allowance prices fell in February to the lowest level since July 2021

Russia-Ukraine war pushes fossil fuel prices higher

The Russia-Ukraine war has upended global energy markets, and the impact of this has been felt most by Europe, which is heavily dependent on Russian natural gas, oil and coal. However, given the nature of energy markets, the impact is being felt across the globe, including in Asia. Reduced Russian pipeline gas flows to Europe have meant that Europe is having to rely more on liquefied natural gas (LNG) supplies, and in doing so is competing against Asia for this supply. This has tightened LNG supply and pushed up LNG prices in Asia. In addition, the sanctioning of Russian oil and coal by Europe has meant that European buyers are looking elsewhere for supply. While some Asian buyers, such as China and India, may be willing to take advantage of the large discounts available for Russian fossil fuels, this is not true for all Asian countries. For example, Japan and South Korea appear to be moving away from Russian fossil fuels.

What has made matters worse for a number of key importers is that not only are we seeing higher fossil fuel prices, but the strength in the US dollar has meant that the pain from higher prices is even more acute.

One would expect that the high fossil fuel price environment would speed up the green push from governments across Asia, particularly given that a number of these economies are large net importers of energy. However, clearly, the deployment of renewables takes time and will not ease security concerns in the short term. Therefore, we are likely to see more of a push to boost the supply of fossil fuels and therefore the reliance on these dirtier fuels.

More coal please

Admittedly, we were seeing growth in coal output prior to Russia's invasion of Ukraine. China boosted domestic coal output in the second half of 2021 due to its own domestic energy crisis, which saw electricity rationing. China's coal output in 2021 hit a record 4.07bn tonnes, up almost 6% year-on-year. This growth has continued this year, with output over the first six months of the year up 12.6% year-on-year. In addition, there are suggestions that China is potentially looking to end its unofficial ban on Australian coal imports.

India has also had to deal with its own power crisis, not helped by hotter than usual weather boosting power demand. India has also tried to increase domestic coal output. According to numbers from the Ministry of Coal, output over the first three months of the fiscal year starting in April totalled almost 205mt, up around 31% year-on-year. India initially wanted to grow domestic production in order to be less reliant on imports. However, given the tightness in the domestic coal market, the government is now pushing for a boost in imports, along with higher domestic output.

The other factor which will be supporting coal demand in Asia is the strength of the LNG market. Tighter LNG supplies and higher prices mean that some countries will have to rely on relatively cheaper and dirtier fuels, so turning increasingly to coal and even oil for power generation needs. Looking at relative prices for LNG, thermal coal and fuel oil, the cheapest fuels are fuel oil and coal. Given that European demand for LNG is likely to remain robust for the foreseeable future in what is already a tight market, LNG prices will remain elevated.

Furthermore, inflation concerns have seen a number of countries increasing subsidies or cutting taxes on fossil fuels, although this move is not isolated to Asia and we are seeing a number of governments around the world going down this route. However, this goes against pledges made at COP26 in Glasgow to work towards phasing out fossil fuel subsidies. While not a great image for the energy transition, it also does little to help solve tightness in these markets, given it delays the demand destruction that some of these markets need to see.

It is not all bad news, however. While a number of countries will be looking to fossil fuels to shore up their energy supply, there are some that are looking for other alternatives. Japan recently announced that it wants nine of its nuclear plants up and running by this winter, up from the five which are currently operating. This would help with energy security concerns during these uncertain times. And while this is a low emission alternative, there will be some concern when it comes to safety, given the Fukushima incident is still in the back of people's minds. There are also other countries in the region that are looking more favourably at nuclear power. South Korea is restarting the construction of two reactors, the Philippines is looking to include nuclear power in its energy mix, and Singapore is exploring the potential for nuclear as well.

Short term pain, long term gain?

It is concerning the degree to which we have seen governments going back on pledges to phase out fossil fuel subsidies and reduce coal output. This action will do little to help reduce carbon emissions in the short term. However, the longer elevated fossil fuel prices remain, the more pressure there will be on governments to tackle the issue and look for alternatives, including renewables, nuclear and other low emission solutions. This suggests that we could see a quicker deployment of renewables capacity, at least for those Asian nations which are heavily dependent on energy imports. China stands out on this point, with yet another record deployment of solar and wind capacity expected this year. In fact, estimates of solar and wind deployments in China over 2022 are equivalent to around 54% of total installed wind and solar capacity at the end of 2021 in Asia (ex-China).

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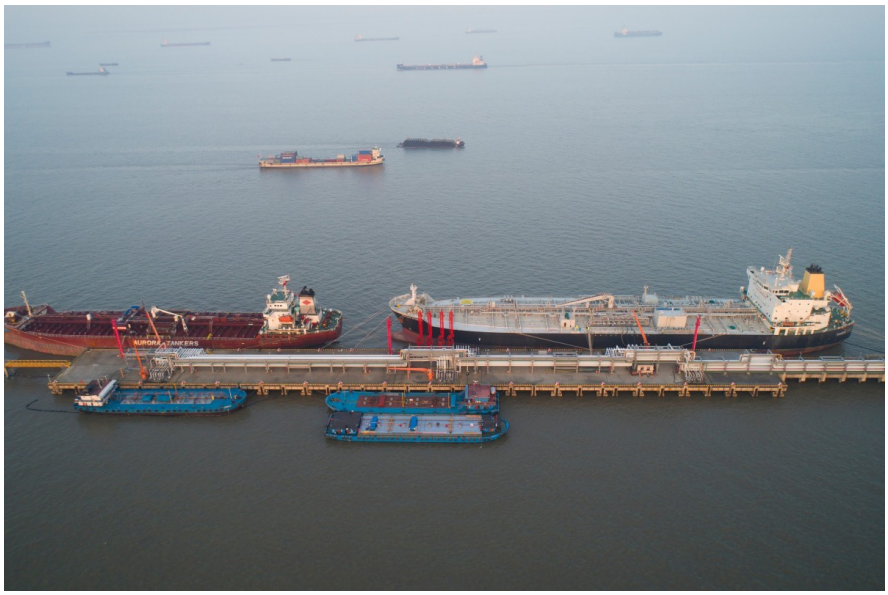
Gas and coal imports from Russia key to China's economic recovery

Since the start of the Russia-Ukraine war, China has started to import more coal, crude petroleum oil and natural gas from Russia. This is not only a result of international politics; China also needs stable energy imports for its economic recovery



Source: Shutterstock

Aerial view of oil tankers moored at a oil storage terminal, Taicang, China

Where does China want to be?

China, the world's biggest emitter of carbon dioxide in 2020, pledged in September 2020 at the 75th session of the United Nations General Assembly to strive for peak CO2 emissions by 2030 and work towards carbon neutrality by 2060.

What it's been doing to get there:

China has been updating the details on how it aims to achieve net-zero carbon emissions by 2060:

- Limited emissions will be implemented for new pollutants by 2025, according to the Action

Plan for the Treatment of New Pollutants.

- Pledges to stop financing new coal plants overseas in March 2022.

- The State Council issued the Responding to Climate Change: China's Policies and Actions in October 2021 confirming the targets of peak carbon dioxide emissions before 2030 and achieving carbon neutrality before 2060, and further sets targets to:

    - Lower its carbon intensity by more than 65% (previously 60-65%) by 2030 from the 2005 level.

    - Increase the share of non-fossil fuels in primary energy consumption to around 25% (up from around 20%) by 2030.

    - Increase the forest stock volume by six billion cubic meters (up from 4.5 billion) by 2030 from the 2005 level.

    - Bring its total installed capacity of wind and solar power to more than 1.2 billion kW by 2030, which is additional to previous announcements. Investments in solar power were USD4.3 billion (CNY29 billion) from January to April 2022, up by 204% from the same period in 2021.

    - Raise the target for new energy vehicle share from 20% to 25% by 2025.

But, as stated in the Climate Action Tracker, these policies are not enough to bring the temperature down to 1.5 degrees Celsius above pre-industrial levels. More green policies are expected from China. The China Council for the Promotion of International Trade (CCPIT) estimated that to achieve net zero carbon emission by 2060, China needs to invest $21.3tr.

So far, China has put policy objectives into action with the following:

- Issued $57bn (CNY382 billion) green bonds in the first half of 2022, an increase of 202% year-on-year.

- Added another $14.9bn (CNY100bn) loan to support the clean and efficient mining, processing and utilisation of coal-powered energy by China's central bank, the People's Bank of China.

- Increased sales of electric vehicles by 122.5% year-on-year to 2.3 million in the first half of 2022.

What's happened since the Ukraine war

Since the start of the Russian-Ukrainian conflict, China has increased its imports of coal, crude oil and natural gas from Russia.

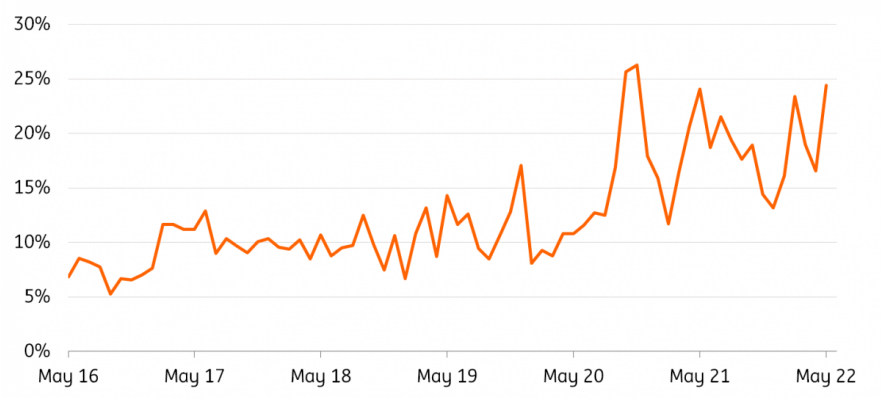
Although one-third of China's coal imports come from Russia, Russian coal accounts for less than 1% of total China coal supply, which includes a big portion of domestic supply.

We believe that China will at least maintain this level of coal imports from Russia in 2022, as it looks to have an adequate power supply standby for economic recovery this year.

In addition, China is going to cut import tariffs for coal to zero from 1 May 2022 to 31 March 2023, which could lead to more imports of coal from Russia.

These two measures are in line with the compromise approach of moving slowly from coal to renewable energy so that the power rationing seen in 2021 will not reoccur.

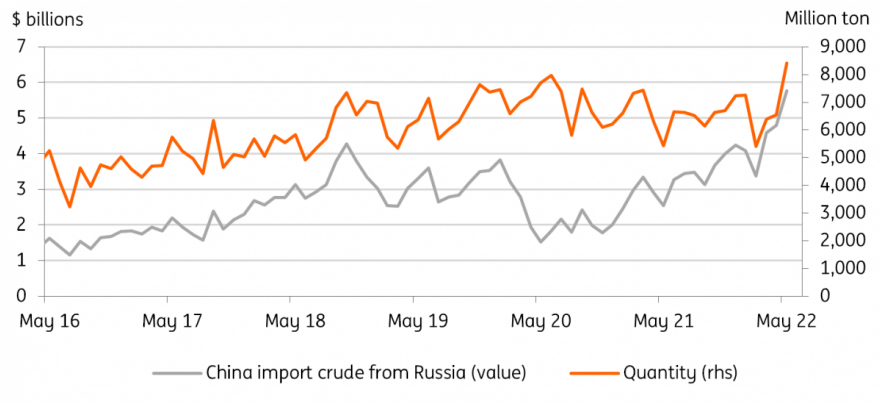
China coal imports from Russia as % of total coal imports



Source: CEIC, ING

According to Chinese customs data, crude oil imports from Russia rose to more than 18% of total crude oil imports in May from 15% in April. This increase has already exceeded the previous high of 17.6% in October 2021.

China imports of crude petroleum oil from Russia

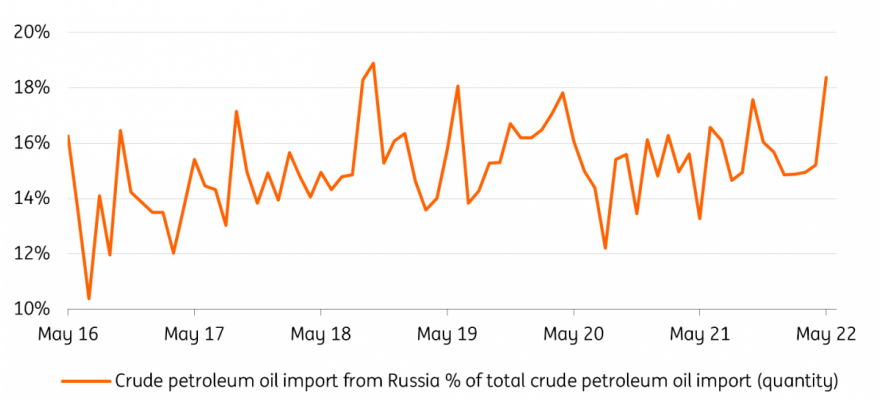


Source: CEIC, ING

This comes as Russia signs an agreement with China to supply 100 million tonnes of oil over 10 years – which extends the existing agreement – worth $80bn.

We expect Russia's contribution to China's crude oil imports will increase to more than 20% in 2022. This increase started in May as China imported 28% (month-on-month) more Russian crude petroleum, with the monthly import value growing at a slower pace at 20% MoM. This indicates that China bought Russian oil at a cheaper price in May. Imports from Russia should have added to strategic reserves, like imports from other economies, with total crude petroleum oil imports edging up 2.93% MoM in May. For China, Russian oil has so far not replaced oil imports from other economies.

China crude petroleum oil imports from Russia as percentage of total crude petroleum oil imports

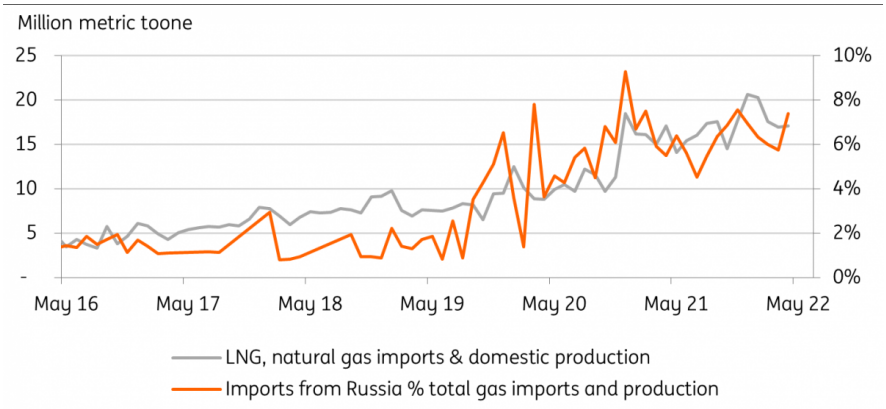


Source: CEIC, ING

In 2021, China overtook Japan to become the world's largest importer of liquefied natural gas (LNG). Russia is the third-largest supplier of LNG to China, contributing more than 9% of China's LNG and natural gas import value in May 2022, from 12% in April, above the 5% average in 2021.

There will be even more imports of natural gas from Russia in the coming years. In February 2022, China agreed to buy 10 billion cubic meters of LNG from Russia via pipeline for 30 years. In the previous deal, Russia supplied 38 billion cubic metres of gas via pipeline until 2025, according to Reuters.

China LNG and natural gas imports from Russia



Source: CEIC, ING

However, this does not necessarily mean that China will import less LNG from Australia and the US, which are the number one and two suppliers of LNG to China. LNG is less polluting. When China's economic growth stabilises as lockdown measures ease, the policy-driven stimulus will fade, and by that time, coal power sources will gradually be replaced by LNG and renewable energies. China's demand for LNG and natural gas will continue to rise.

Fast track to reducing carbon emissions didn't work

China experimented with the pace of reducing carbon emissions, which could provide a valuable lesson to other economies that there is no fast track for reducing CO2. In 2021, some cities cut back on coal production significantly to achieve a reduction in carbon emitted from coal power. The result was electricity shortages. That incident was not caused by a lack of coal supply but rather a bid to cut carbon emissions, which ended up in power rationing.

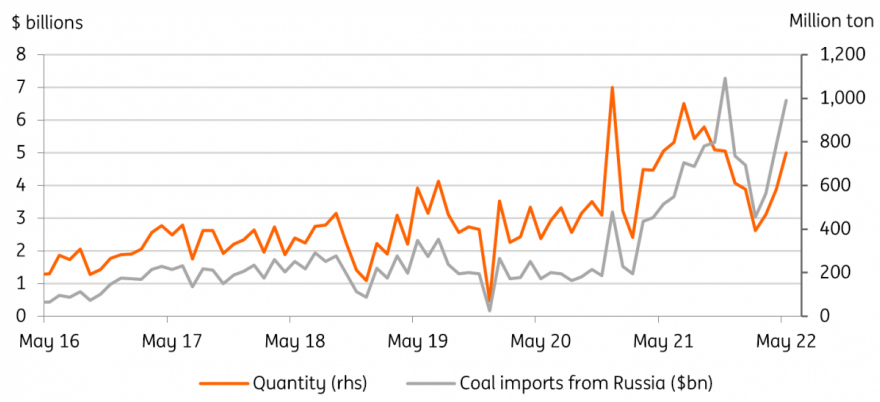
This highlights power security as a risk when China reduces carbon emissions after 2030. To mitigate this risk, the government increased more than 350 Mt per year of coal mining capacity in the second half of last year. Although China has pledged to stop building coal-fired plants abroad, it increased coal power within China with more than 15 GW approved so far in the first half of 2022.

In 2022, domestic coal production saw a jump in February, while coal imports were also on the rise. The government wants to ensure that electricity supplies are sufficient to support the economy's recovery after the economic damage caused by Covid lockdowns.

It seems that the progress towards meeting its carbon emission commitments is being compromised despite announcing that it will "control coal consumption rigorously" in its 14th five-year plan from 2021 to 2025. But China believes that building a clean coal power plant is a transition phase between traditional coal-powered electricity and electricity from solar and wind.

Rather than just giving up coal power, the government announced in May 2022 that it aims to move seamlessly from coal to renewable energy by upgrading 600 GW of coal power plants to increase the standby time and enable them to ensure power supplies when wind and solar are insufficient due to unfavourable weather conditions.

China coal imports from Russia



Source: CEIC, ING

Summary

In short, since the start of the Russia-Ukraine war, China has started to import more coal, crude petroleum oil and natural gas from Russia. This is not only a result of international politics; China also needs stable energy imports for its economic recovery. The failure to speed up CO2 reduction in 2021 has resulted in even more reliance on coal fire power to ensure the stability of the power supply. Lockdowns during March-May have cut carbon emissions, and therefore China may be able to achieve flat CO2 emissions in 2022. China is building more green infrastructure, which on the one hand helps to support economic growth, and on the other, helps it to stick to its progress of peak carbon emissions by 2030.

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Article | 1 August 2022

Carbon neutrality a long way off for Japan despite reopening nuclear reactors

From 2023, despite some opposition, nuclear power generation is expected to increase substantially – giving Japan room to breathe when it comes to reducing gas emissions and reaching its net-zero 2050 target

The recent spark in commodity prices has fuelled discussions about restarting nuclear power sooner than expected

Japan's climate goals

In October 2020, Japan, the fifth-highest emitter of carbon emissions in the world, committed to achieving net-zero emissions by 2050. Former prime minister Yoshihide Suga declared at the Leaders' Summit on Climate in April 2021 that Japan aims to reduce its greenhouse gas emissions by 46% by 2030 from 2013 levels and to "continue the strenuous effort in its challenge" to achieving a 50% reduction. Previously, Japan had targeted an 80% reduction in greenhouse gas emissions by 2050, and carbon neutrality would come "as soon as possible" in the second half of the century.

Where it's at so far

As part of its latest pledge, the government presented its new "Green Growth Strategy in line with Carbon Neutrality in 2050" in December 2020 and approved a new Basic Energy Plan in October 2021. The plan included a revised 2030 electricity energy mix target of 36-38% from renewables (vs 22-24% in the previous version), 20-22% from nuclear (unchanged), 22% from gas (vs 27% previous), and 19% from coal (vs 26% previous).

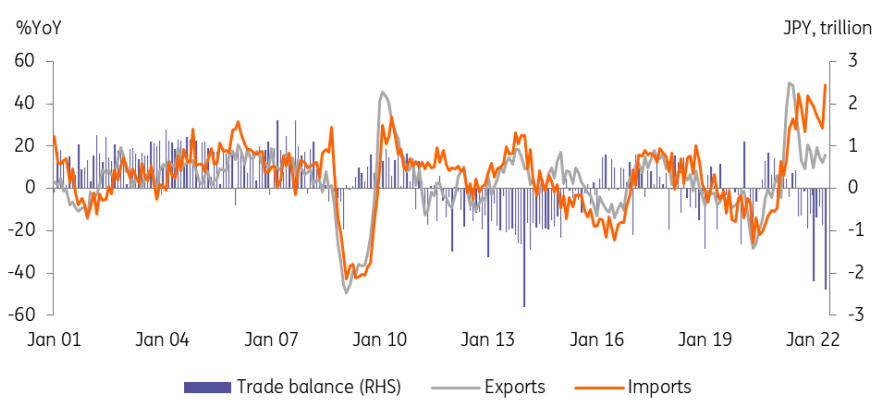
Financing coal plants overseas is likely to decline in the future, as the publicly-funded Japan Bank for International Cooperation (JBIC) will only fund coal power plants under strict conditions such as carbon capture and storage equipped plants.

Indeed, while the newly-revised Basic Energy Plan showed a clear roadmap for meeting the net-zero 2050 target and reducing significant amounts from fossil fuels, keeping coal resources at 19% will not be possible if Japan is to achieve the pledged goal. The relatively high reliance on nuclear power has also been criticised given the strong local opposition to reopening nuclear reactors and the accompanying legal issues.

What's happened since the Ukraine war

The 2011 Fukushima plant accident has had a significant impact on Japan's energy system and trade structure. Nuclear power was suspended entirely, and although recently partially restarted, the country has become even more dependent on fossil fuels to close the gap in power generation, which has negatively affected its trade balance. Since the Ukraine war, Japan's trade deficit has widened sharply again mainly due to higher commodity prices.

Since 2011, energy has become a swing factor for trade



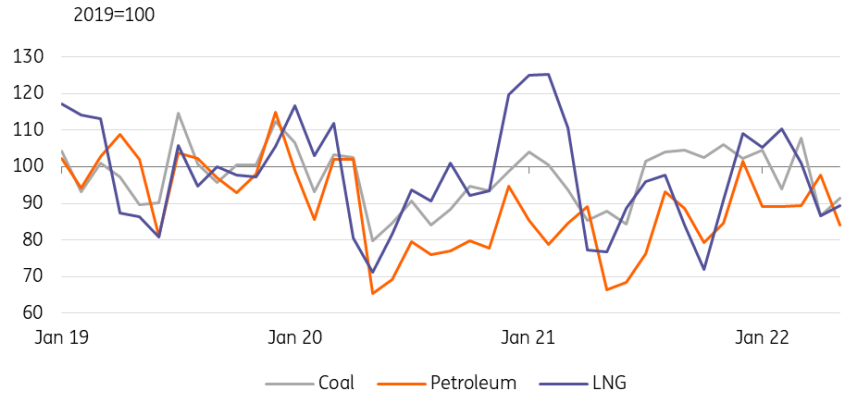
Source: CEIC

However, overall fossil fuel imports such as coal, petroleum, and liquefied natural gas (LNG) in volume terms have not yet returned to pre-pandemic levels, except for a temporary increase in LNG imports during the winter 2020/21 season, largely due to the critical shortage of electricity.

Following the start of the Russia-Ukraine conflict, Japan quickly condemned Russia's invasion of Ukraine and aligned with the Western sanctions regime on a number of issues. Yet, in terms of

energy, Japan initially decided not to comply – although it has recently announced its intention to phase out Russian coal and oil imports. Nevertheless, Japan is continuing to support ongoing joint LNG projects in Sakhalin.

Commodity import volume still below pre-pandemic levels



Source: CEIC

LNG

Russian President Vladimir Putin recently signed a decree to seize full control of the Sakhalin-2 gas and oil project, which could force out Shell and Japanese investors, who hold just under 50% of its shares. Sakhalin-2 is one of the largest LNG projects with an output of 9-12 million tonnes per year, which mainly head to Japan, South Korea, China, India and other Asian countries. So far, Russia's Gazprom is expected to keep in place key contracts to deliver LNG to Japan, but uncertainty over the contracts has been growing, and this could have a significant impact not only on Japan but also on Asian countries in general. Japan imports about 10% of LNG from Russia, mainly under 10- to 20-year long-term contracts from this site. But, as of 19 July, the Japanese government said no further action was taken by the Russian government on setting up a new Russian operator.

Nuclear

Prior to the 2011 Tōhoku earthquake, there were 54 nuclear reactors in operation in Japan, supplying about 30% of the country's electricity. In 2013, the Nuclear Regulation Authority (NRA) established new regulatory requirements, and since 2015 the government has restarted idle nuclear reactors which meet the enhanced safety standards. Since the Ukraine war, record high temperatures and an imminent power crisis have prompted Japan to accelerate its review of idle nuclear reactors.

Prime Minister Fumio Kishida has asked for up to nine reactors to be operational this winter to avoid an electricity crisis. However, the central government has little power to order the reopening of nuclear plants because of strict regulatory procedures. Thus, it will probably take longer than the government anticipates, and meanwhile, dependence on fossil fuels is likely to remain high. As of June 2022, 10 of the 33 operable nuclear reactors have received clearance from the NRA for restart, and only four reactors are currently in operation. Although local governments have agreed to restart the reactors, six are still offline for maintenance. Another 15 operational reactors are at

various stages of the restart approval process and two new reactors under construction have also applied.

Summary

Heavy reliance on imported energy sources has been a long-standing problem for Japan, and the recent spike in commodity prices from the Ukraine war appears to have fuelled discussions about restarting nuclear power sooner than expected. In the short term, it is highly likely that Japan will increase its fossil fuel supply, mostly to LNG, to fill the power shortage, yet geopolitical issues with Russia threaten stable LNG supply. From next year, despite some local opposition, nuclear power generation is expected to increase substantially compared to this year, so it seems that there will be room to breathe when it comes to raw material imports and reducing gas emissions. In terms of the macro economy, this will contribute to moderate cost-push inflation currently being witnessed and work in favour of the trade balance.

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South Korea plans to expand renewable energy sources with nuclear

South Korea's efforts to achieve its net-zero 2050 target will continue with an increase in nuclear power generation and other renewable energies. Russian raw material imports have declined significantly since March despite the absence of direct sanctions

Source: Shutterstock

Container ship powered by Liquefied Natural Gas - Busan, South Korea

Where does it want to be?

South Korea has become the 14th country in the world to legislate a carbon target, aiming for a 40% reduction in emissions from 2018 levels by 2030 to achieve carbon neutrality by 2050.

What it's been doing to get there

Since its formation in May 2021, the 2050 Carbon Neutrality and Green Growth Commission has implemented several measures in an effort to gradually move towards total carbon neutrality.

The Carbon Neutrality Act, for example, became effective in March 2022 and aims to facilitate the transition to a carbon-neutral society and increased green growth. Alongside legislative changes,

the government has also increased its 2022 carbon neutrality budget to KRW 12 trillion from the previous year's KRW 7.3 trillion, with a newly established KRW 2.5 trillion climate fund.

Coal power currently accounts for around 40% of the total energy mix, and with seven new coal plants under construction, reaching the net-zero goal is expected to be difficult. However, the government has now announced its Green New Deal, which includes KRW 8 trillion for green projects, the planned introduction of a carbon tax, an end to the financing of overseas coal plants, and charging stations for both electric and hydrogen vehicles.

Following a change of government in early 2022, progress on energy policy has come to a stop. Although the previous administration has been criticised for setting overly ambitious goals and disregarding corporate voices, the new government has confirmed that it intends to stick to the original plans, with details set to be reviewed more closely moving forward.

New energy policies have yet to be disclosed, but it is clear that the government will rely on nuclear power to meet its climate change goals.

The Ministry of Trade, Industry and Energy (MTIE) announced on 5 July that the government will resume the construction of Shin Hanul Units 3 and 4 nuclear reactors and maintain the current level of reactor capacity if safety is ensured. As a result, nuclear will be responsible for 30% of power by 2030, up from 27.4% last year. In addition, the Korean government plans to create a new law for disposing of high-level radioactive waste in order to reduce potential hazards, organising a team exclusively for nuclear waste management. The revised outline, including the target for renewables, will be detailed in the 10th Basic Plan on Electricity Demand and Supply due in the fourth quarter of 2022.

At the same time, the government will continue to push for the phase-out of coal-fired power plants at a "reasonable pace" in line with power supply conditions and will expand the use of carbon-free energy sources. Power grids will also be upgraded to adopt renewable energy sources with new designs for increased efficiency. In addition, the government will seek to enact a special law to reflect the increases in energy costs in electricity bills.

In addition, the Ministry of Environment has established a new national green taxonomy, the "K-Taxonomy". While nuclear is excluded from the current classification and LNG remains conditional, the inclusion of both elements in the EU taxonomy could potentially influence future revisions and updates.

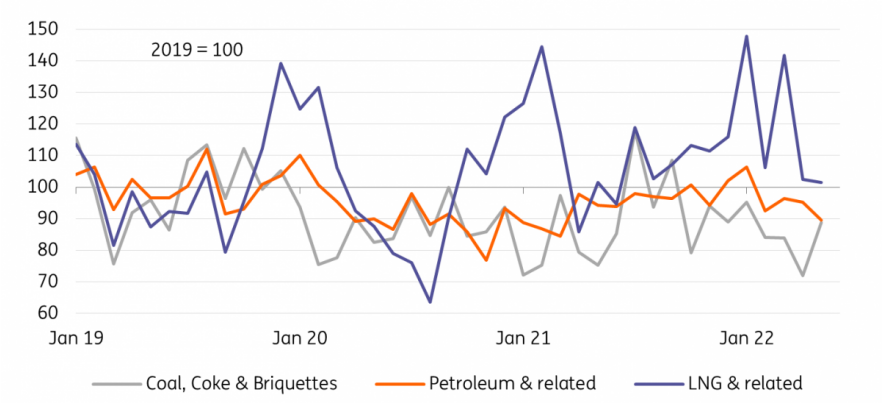
What's happened since the Ukraine war

South Korea is one of the major net energy importers in the region as the economy is more than 92% dependent on imported energy sources for power. The recent rise in commodity prices is affecting the country's trade, as demonstrated by the deficit in the first half of 2022. In value terms, South Korea's imports of oil, coal and LNG have already far surpassed the pre-pandemic levels mostly due to price effects. In volume terms, LNG has successfully returned to pre-pandemic levels while oil and coal are still yet to make a similar recovery.

Since the beginning of the Russian-Ukrainian conflict, South Korea has joined its strategic allies by imposing a series of sanctions on Russia. However, it has decided not to impose sanctions on Russian commodities, including agricultural and marine products. Nevertheless, South Korea has

reduced its imports of coal, crude oil, and natural gas from Russia since March.

LNG imports have recovered to pre-pandemic levels



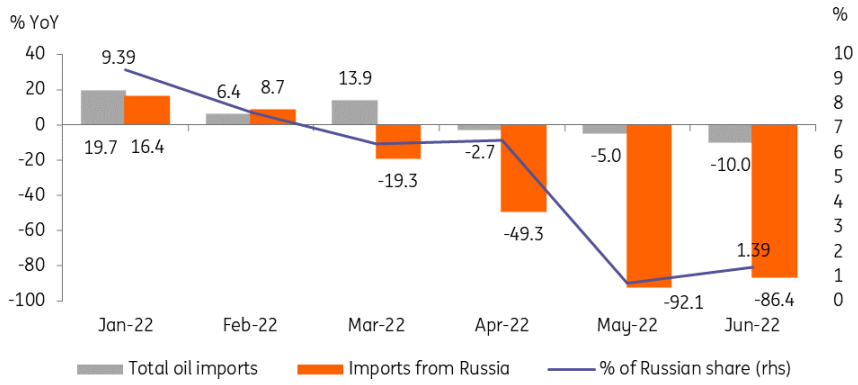
Source: CEIC

Oil

In 2021, Russia accounted for 9.1% of total oil imports, ranking fifth overall. During the first half of 2022, Russian oil imports declined by 39.8%, while total oil imports increased by 3.3%. Looking at the trend of monthly imports, the downward trend became more evident after the outbreak of the war. As of June 2022, the share of Russian oil has fallen to a mere 1.4% (vs 9.4% in January 2022).

The global oil market is mostly driven by OPEC, but the relatively wide range of oil suppliers in the market has allowed South Korean importers to substitute Russian oil with alternative sources. A key feature of South Korean oil imports is that a significant amount of oil imported into South Korea is processed for re-export rather than domestic consumption. Refineries and petroleum companies probably halted imports of Russian oil quickly in order to avoid payment-related issues with Russia, as well as any possible sanctions on Russian-originated products. We expect oil imports from Russia to remain at a low level for a while as payment-related risks are expected to persist with the SWIFT ban. Oil imports overall are also expected to decline further, having been on a downward path since early in the second quarter – a sign that global oil consumption is gradually weakening due to higher energy prices and soft demand.

Russian oil imports have declined sharply since March

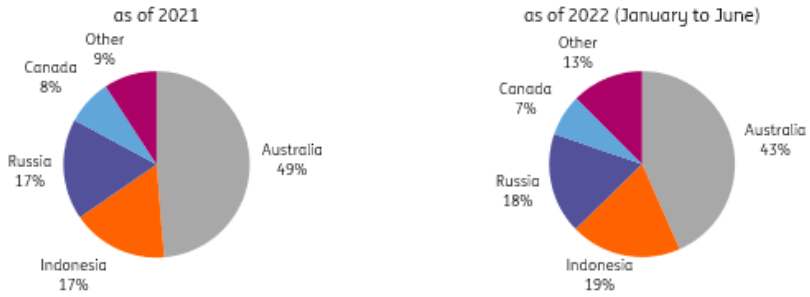


Source: KITA

Coal

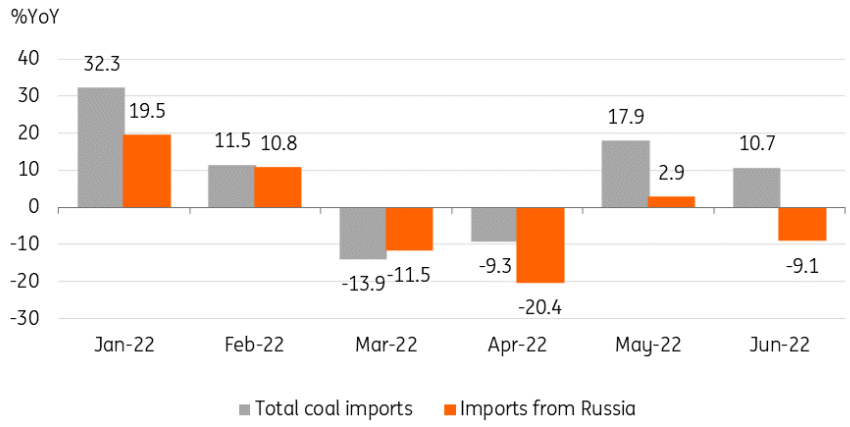
Korea's dependence on Russian coal is higher than on other commodities. In 2021, about 17% of South Korea's coal imports were from Russia, ranking as the third-largest coal provider. In 2022 (January to June), total coal imports increased by 6.9%, while Russian imports decreased by 3.3%. A decline in Russian coal imports began in March, similar to the import trend seen in oil. However, due to insufficient substitutes in other coal-producing countries and fierce competition among importing countries, the share of Russian imports has been around 18%, slightly higher than the annual average of 17% in 2021. Given the less diversified coal import portfolio, we do not expect South Korea's dependence on Russian coal to decline significantly anytime soon. In addition, the government plans to reopen old coal-fired power plants this summer to prevent power shortages, so overall energy dependence on coal in the short term is expected to increase. It will take time for alternative resources such as renewable energy and nuclear power to fill the gap.

Dependence on Russian coal remains high



Source: KITA

Coal imports from Russia declined by 3.3% in 1H

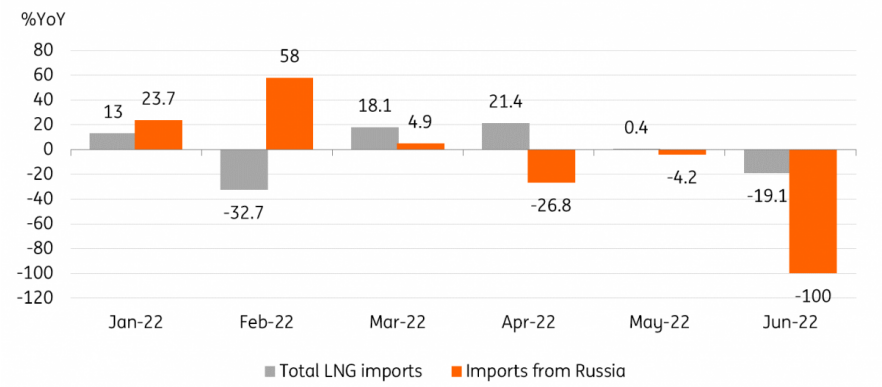


Source: KITA

LNG

Russia became the sixth largest supplier of liquefied natural gas (LNG) to South Korea in 2021, contributing 6.2% of total LNG imports. From January to June 2022, Russian LNG imports accounted for 5.5% of total imports. LNG imports from Russia declined by 7.0% in the first half, a much sharper drop than the total LNG imports of 1.5% over the same period. Monthly data showed some fluctuations (possibly related to the progression of the war) with strong imports mainly concentrated in the pre-war period. Imports in January and February soared by 23.7% and 58%, respectively, but have fallen significantly since March, with no recorded Russian oil imports at all in June. Going forward, South Korea's LNG dependence on energy is likely to increase in the medium term as this is considered clean energy compared to other conventional energy sources like coal and oil.

No LNG imports recorded from Russia in June



Source: KITA

Summary

Similar to other energy importers, South Korea is suffering from the ongoing war due to high inflation and worsening trade conditions. However, as a major refining/petrochemical exporter, South Korea has significantly reduced its oil imports from Russia and this trend is likely to continue. Meanwhile, LNG and coal imports have fallen but at a slower pace due to the high dependence on power generated by fossil fuels. South Korea plans to expand its renewable energy sources, with the anticipated gap likely to be filled by nuclear power. Given its value as a reliable and affordable renewable energy source, nuclear power is expected to become an increasingly critical point of focus for the government moving forward.

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Article | 1 August 2022

Australia: From saviour to victim

After the Russian invasion of Ukraine, Australia was viewed as a possible solution for energy shortages in the Asia Pacific region – instead, it has suffered its own energy crisis

Source: Shutterstock

Where does Australia want to be?

Australia has given a weak, non-legislated pledge to achieve net-zero carbon by 2050.

What it's been doing to get there: New 2030 goal announced

In October 2021, just prior to the COP26 climate round, Australia set out an intention to achieve net carbon zero by 2050. This was a weak commitment, however, not backed up by legislation and instead reliant upon AUD$80bn of technological expenditure by the government with the aim of creating a cost environment conducive to the adoption of clean energy. There was no change to the target for CO2 reduction by 2030 – making Australia one of only four economies making no reduction at COP26. The Australian government at the time said it would exceed existing targets (though by less than the 45% scientists believe is necessary to hit COP targets). Australia also said that it will continue to provide the rest of the world with the energy it demands, so there are no plans to phase out coal or gas extraction. Since then, the incoming Australian Labour government has pledged to reduce Australia's emissions by 43% by 2030 (almost 45%), which would become its new target under the Paris agreement.

What's happened since the Ukraine war

The first point to note is the change in government at the Australian General Election on 21 May. The former Liberal / National coalition was beaten at the polls by Australia's Labour Party, with the Green Party also picking up four total seats (three more than it had) on a 10.4% share of the vote.

With an overall majority, Labour will not need to lean on the Greens to pass policy changes, but as the position paper "Powering Australia" indicates, renewables have been pushed up the political agenda with this change in leadership and there is a new, more ambitious target for emissions reduction by 2030.

The key points of the new policy are:

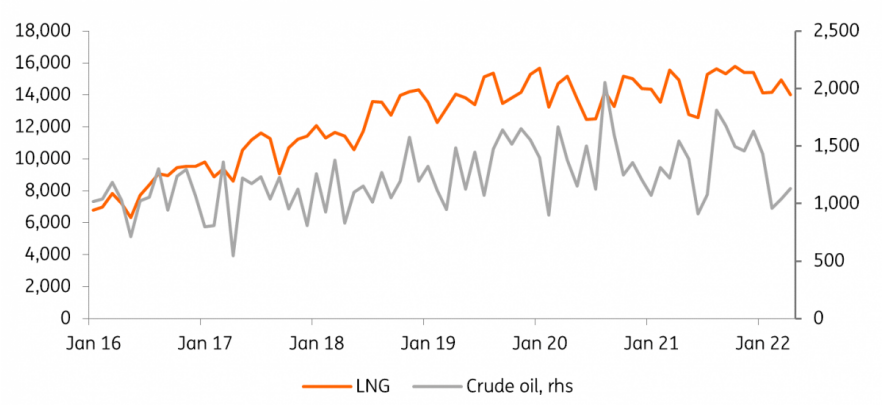
- Upgrade the electricity grid to fix energy transmission and drive down power prices.
- Make electric vehicles cheaper with an electric car discount and Australia's first National Electric Vehicle Strategy.
- Adopt the Business Council of Australia's recommendation for facilities already covered by the Government's Safeguard Mechanism that emissions be reduced gradually and predictably over time, to support international competitiveness and economic growth – consistent with industry's own commitment to net-zero by 2050.
- Protect the competitiveness of Emissions Intensive Trade Exposed industries by ensuring they will not face a greater constraint than their competitors.
- Allocate up to $3bn from Labour's National Reconstruction Fund to invest in green metals (steel, alumina and aluminium), clean energy component manufacturing, hydrogen electrolysers and fuel switching, agricultural methane reduction, and waste reduction.
- Provide direct financial support for measures that improve energy efficiency within existing industries and develop new industries in regional Australia through a new Powering the Regions Fund.
- Roll out 85 solar banks around Australia to ensure more households can benefit from rooftop solar.
- Install 400 community batteries across the country.
- Demonstrate Commonwealth leadership by reducing the Australian Public Service's own emissions to net-zero by 2030.
- Invest in 10,000 New Energy Apprentices and a New Energy Skills Program.
- Establish a real-world vehicle fuel testing programme to inform consumer choice.
- Work with large businesses to provide greater transparency on their climate-related risks and opportunities.
- Re-establish leadership by restoring the role of the Climate Change Authority, while keeping decision-making and accountability with the government and introducing new annual parliamentary reporting by the minister.

Australia is one of the few clear net energy surplus economies in the Asia-Pacific region. And it has benefited from a positive terms-of-trade shock to its energy exports, in particular natural gas, but also coal following Russia's invasion of Ukraine. Australia is also a major net exporter of agricultural products, including those directly disrupted by the war in Ukraine (wheat, corn), and also of metals.

There has been some talk of Australia providing more natural gas to Asia, thus freeing up other suppliers, such as Qatar, the US, and Algeria, to supply Europe with gas, displacing their reliance on Russian gas.

The reality is that the Australian gas export market was already operating virtually at capacity. New trains required for liquefaction of gas to enable LNG transport are not on the table. New gas fields, the Beetaloo Basin in the Northern Territory, the Barossa gas field off the coast of the NT, and the Scarborough field, north-west of Exmouth, will not start to deliver gas until 2025/26.

Australia's energy exports (million litres)



Source: CEIC, ING

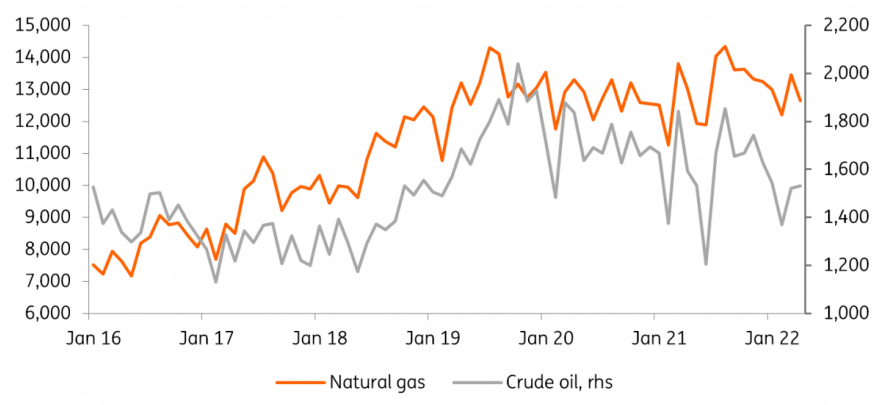
Australia's own energy crisis

Load swaps might have been another possibility, where Australia fills a gas order so another producer in the Northern Hemisphere can supply Europe.

However, all talk of Australia providing an answer to commodity supply shocks in Asia has evaporated, as, despite its substantial energy riches, Australia has been suffering its own energy crisis.

The crisis has been described as a "perfect storm", combining an early Australian cold snap, floods affecting coal production (65% of Australian electricity generation is from coal), and old unreliable coal-fired power generating capacity being offline. LNG exporters have been exporting as much gas as possible overseas, taking advantage of high global prices in the aftermath of supply disruptions to Europe of Russian gas.

Australian energy production (million litres)



Source: CEIC, ING

The plan to fix the energy market

The crisis resulted in the suspension of the wholesale energy market for the East coast of Australia (including five of the six states). Capped electricity prices fell below what generators were having to pay to produce electricity – as expensive imports of coal and gas were required to make up for domestic shortfalls. The result led to some capacity being temporarily withdrawn raising the prospect of blackouts.

The response to the crisis has been an 11-point plan from energy ministers that includes the following:

- To develop a capacity mechanism, which would pay generating units to be available even if they are not used. This doesn't explicitly rule out coal, but it is hoped will facilitate more renewables.
- Procure and store gas for situations of supply shortage.
- Move forward with a National Transition plan for growth in renewables, hydrogen and transmission.

Summary

Australia's energy crisis is indirectly related to the spikes in energy commodity prices resulting from the Russia-Ukraine war. That, and an incoming government that appears to regard Australia's energy transition as a more pressing concern than the outgoing government, could hasten the adoption of renewables, including green hydrogen, pumped hydro, and storage mechanisms including batteries, as well as their more efficient inclusion into the distribution grid.

However, the short-term may see more gas being diverted from exports to domestic use. It may also delay the phasing out of coal-powered generation while reliable alternatives are being developed.

The recent crisis, if nothing else, has highlighted the risks to Australia (and others) of energy supply disruption in an inadequately planned transition in the face of external shocks like that generated by the Russia-Ukraine war. The road ahead may look a little clearer, but a more deliberate

approach to transition may mean that less progress is made in the short term even as targets for emissions reduction are strengthened.

Article | 1 August 2022

India is sticking with coal

India's adoption of a 'strategically neutral' position with respect to the Russian invasion of Ukraine has seen it buying more cheap Russian oil, gas, and coal. In the face of energy shortages, India is also investing more in coal, even as it expands its renewables capacity

Source: Shutterstock

A man waits for a train carrying coal rakes to pass at a crossing, Dadri - May 2022

Where does it want to be?

India, the world's third-largest emitter of carbon dioxide, pledged at the COP26 summit in November 2021 to achieve net-zero carbon by 2070, 20 years later than scientists agree is necessary to meet climate change targets

What it has been doing to get there:

At the last climate summit in Glasgow, Prime Minister Narendra Modi announced enhanced climate targets for India:

- India will reach its non-fossil energy capacity of 500 GW by 2030.
- India will meet 50% of its energy requirements from renewable energy by 2030.
- India will reduce the total projected carbon emissions by one billion tonnes from now until

2030.

- By 2030, India will reduce the carbon intensity of its economy by less than 45%.
- By the year 2070, India will achieve the target of net zero.

But despite these pledges, observers believe that India is already falling well behind on its delivery of renewables capacity. India has an ambitious 2022 renewable energy capacity target of 175 GW. As of July 2021, it had installed less than 100 GW and is now unlikely to reach the target.

A World Economic Forum White Paper suggests that the transition to net-zero by 2070 will cost India $15tr. But to get there, the government will need to set clear targets and roadmaps for each sector, a framework of regulations and incentives to catalyse change and innovation, take a balanced approach to carbon pricing, and a collaborative process for stakeholder engagement. The implication of these requirements is that these measures have not yet been implemented.

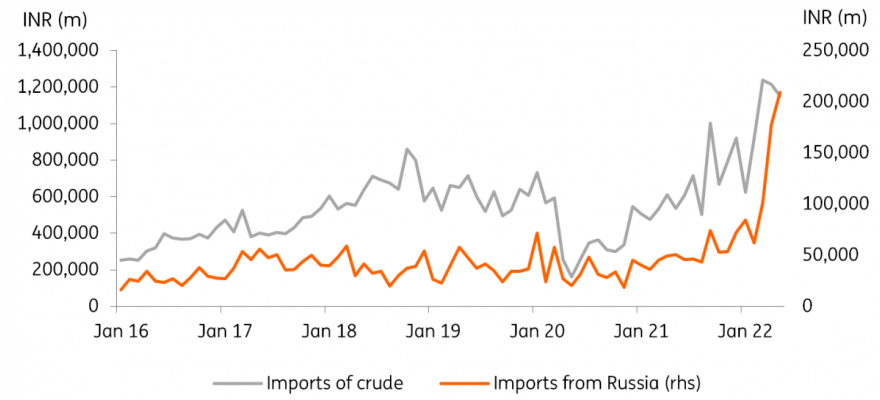
What's happened since the Ukraine war?

India's import volumes of crude oil and coal have surged since February. Compared to pre-pandemic levels, imports of coal and petroleum are respectively 359% and 607% above their pandemic lows. Much of this is coming from Russia. Imports from Russia have risen from a low of INR20.2m in May 2020, to INR208.9m in May 2022, approximately a tenfold increase in Indian rupee (INR) terms, and in volume terms probably larger as Russian prices are heavily discounted.

The purchases from Russia have been made through privately negotiated deals by state-run processors, which have bought cheap Urals grades of oil, ESPO cargoes and even Sokol grades usually destined for China.

Despite this, record temperatures, economic re-opening and a shortage of railway wagons for transporting coal – the fuel used for 70% of India's electricity generation – have in recent months led to power outages as surging demand has met faltering supply. So far, this has not spurred an acceleration in the transition to renewables.

Indian imports of crude, and imports from Russia



Source: CEIC, ING

India turns to coal imports to solve energy shortage

In contrast to some economies, which are using the Ukraine war as an opportunity to push harder to decarbonise, India is using the opportunity to fund its existing (even growing) fossil fuel appetite at a beneficial rate. India is now the biggest single purchaser of the Russian Urals grade of crude oil, in spite of warnings from the US not to buy greater than normal amounts of Russian oil.

India has also been buying Russian coal. With Russian coal trading at about a $60-65 discount to Newcastle coal, this is low enough to offset the increased freight costs.

India's medium-term coal ambition is not to phase it out, but to phase out imports, becoming self-sufficient in production. But on 5 May, India's Ministry of Power asked state governments to import more coal. It also ordered coal-fired power generators to run at full capacity until 31 October, invoking the Electricity Act.

The Ministry for Energy said that although the supply of domestic coal had increased, it was not sufficient to meet the increased power needs. And this was why the country was turning to coal imports.

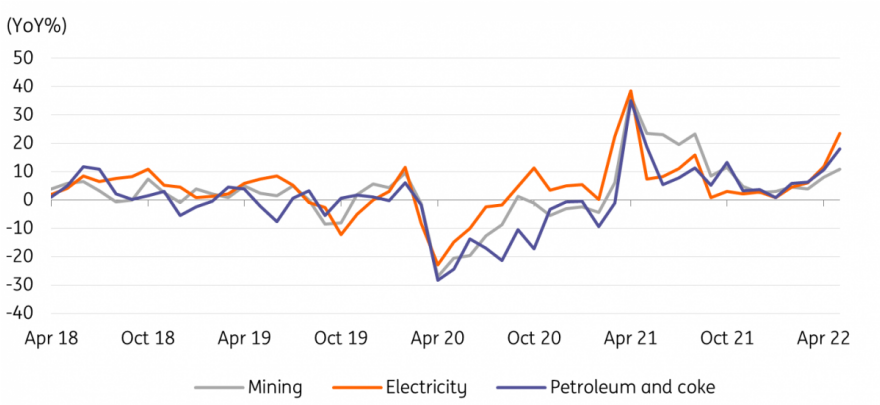
At the same time, the Coal Ministry announced that India would boost domestic coal production to 1.2 billion mt in fiscal 2023-24 from 777 million mt in fiscal 2021-22, partly by reopening closed mines. In June, India's coal production increased by 32.57% to 67.59 million tonnes. Coal-fired electricity generation declined slightly in June as the arrival of Monsoon rains dampened demand.

The Coal Ministry's intention to increase coal supply follows falling coal stocks after high energy demand during intense heatwaves earlier in the year depleted stockpiles and following high international prices that discouraged imports. This resulted in power rationing in a number of states affecting industrial, residential and agricultural users.

There has also been a shift back to coal-fired energy generation in India in response to recent power shortages. In May, NTPC, India's largest electricity supplier, was reported to be about to award a contract for a 1.32MW coal-fired plant in Odisha in eastern India. If this goes ahead, it would be state-owned NTPC's first coal expansion project in six years. The same report also indicated that NTPC might seek to revive two stalled projects in Lara and Singrauli.

It isn't all negative news though. In June, NTPC also commissioned India's largest floating solar project – a 100MW plant spread over 500 acres of an NTCP reservoir at Ramagundam.

India's mining output, electricity, petroleum & coke



Source: CEIC, ING

Summary

Russia's invasion of Ukraine looks to have led to backsliding in India's already unambitious plans to achieve net-zero carbon by 2070. Increased purchases of Russian oil, gas and coal combined with greater domestic production and fossil-fuelled energy generation, especially coal, are clear evidence that India is moving further away from its earlier pledges on decarbonisation.

It is ironic that the heatwaves that have been striking India and leading to increased demand for fossil-fueled electricity generation, are most likely a side-effect of fossil-fuel-induced global warming. This is not the only instance in the region where extreme weather events which may result from global warming have led to a worsening, rather than improvement in fossil fuel emissions (see also: Australia note).

In addition, the relatively young age of India's coal-fired generating capacity suggests that this will be part of India's baseline generating capacity for decades to come. However, it is worth noting that not all additional capacity is coming from fossil fuels, with significant additional capacity from renewables also being added.

Article | 1 August 2022

Indonesia’s carbon tax on hold, but investment in electric cars could pay off

The ongoing conflict in Ukraine has delayed Indonesia's planned carbon tax indefinitely

Source: Shutterstock

Bio diesel plant growth in Indonesia, Malaysia

Where it wants to be: Net-zero emissions on or before 2060

Indonesia recently submitted its updated national climate commitment (NCC) to the United Nations (UN), pledging to lower emissions by an unconditional 29% or by 41% conditional on international financial and technical support, against a business-as-usual 2030 scenario. Furthermore, Indonesia submitted to the UN its long-term strategy on low carbon and climate resilience 2050, which commits to seeing emissions peak by 2030 and progression towards net-zero emissions by 2060 or sooner.

What it's been doing to get there

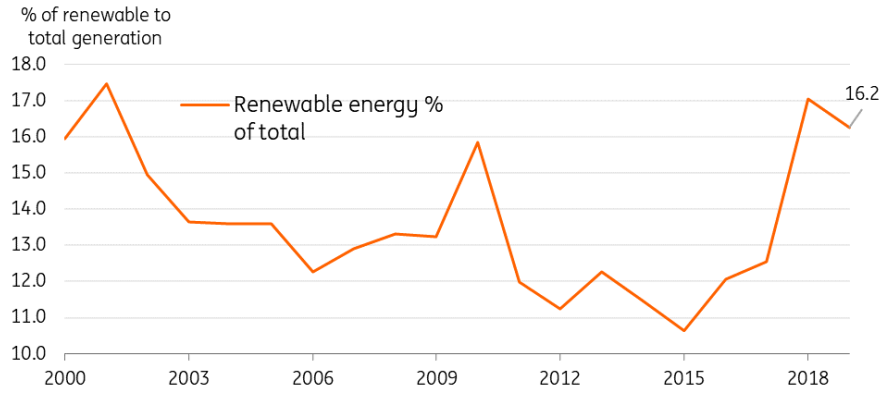
Ambitious shift to renewable energy by 2060

Since its initial National Council for Climate Change submission to the UN in 2015, Indonesia has implemented several programmes to help lower emissions over the past few years. The National Electricity Master Plan of 2019 (UKEN) plans to increase the use of renewable energy power generation, as the country currently generates most of its power from coal.

More recently, Indonesia drafted its National Grand Energy Strategy 2022 setting an ambitious plan to increase renewable power generation to 100% by 2060. However, despite the targeted increase in the overall supply of renewable power, coal is still projected to provide the bulk of energy supply (47% of total) in the near term. Currently, energy generated by renewable sources comprises only 16.2% of the total.

The planned carbon tax of $2.1 per ton of carbon covers coal plants and it will be interesting to see if this will have an impact on energy generation in the medium term. Although relatively low compared to some other countries such as the Netherlands ($46 per ton) and France ($49.3 per ton), Indonesia's $2.1 per ton carbon tax is more comparable to that of Japan ($2.4 per ton) and Singapore ($3.7 per ton).

Indonesia % of renewable power to total



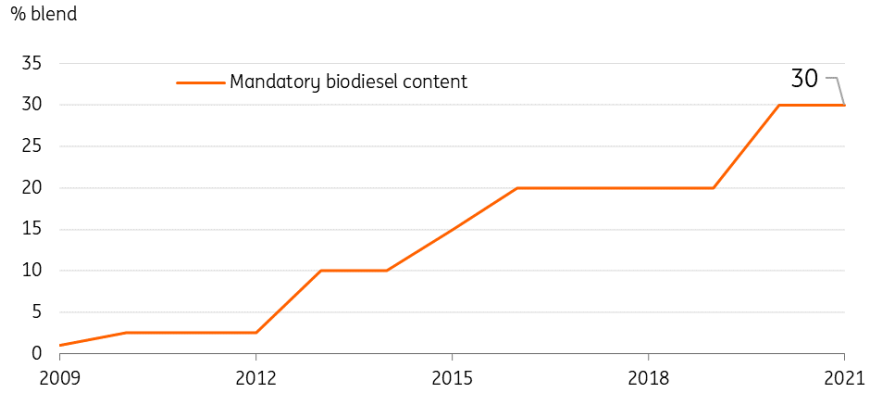
Source: CEIC

Driving up the biodiesel blend

Indonesia also aims to lower its dependence on imported fossil fuels by blending domestically produced Fatty Acid Methyl Ester (FAME) or Distillated Fatty Acid Methyl Ester (DPME) with diesel fuel derived from crude oil. Apart from the benefits of lower dependence on imports, blending biofuel with diesel should lower emissions from transportation.

In a span of a little over 10 years, Indonesia has increased its mandated fuel mix from 1% in 2009 to 30% presently. Indonesia's Ministry of Energy and Mineral Resources has indicated that it plans to implement the increase of the minimum requirement to 40% before the end of 2025.

Mandatory biodiesel blend



Source: Regulation of the Minister of energy and mineral resources, Indonesia

Indonesia betting big on electric vehicles

Lastly, Indonesia has jumpstarted the country's electric vehicle (EV) industry to lower carbon emissions generated by transportation. President Joko Widodo passed Presidential Regulation 55 (the Acceleration Program for Battery Electric Vehicles for Road Transportation) in 2019 to initiate the push for local EV production, EV battery production and charging infrastructure in the country.

More recently, the Ministry of Industry Regulation announced its EV Roadmap under regulation 27 of 2020, granting tax incentives (zero tariffs) for new EV purchases and laying out guidelines for incentives for EV vehicle and battery production. Indonesia also plans to build EV infrastructure and increase the number of EV charging stations to 25,000 by 2030 from 147 in 2021.

What's happened since the Ukraine war

Indonesia moves to fill global energy demand with coal

The impact of the Ukraine war on energy prices has led to an increase in Indonesia's coal exports as the world's top exporter of the product takes advantage of higher prices. After a self-imposed ban on coal exports in January, monthly shipments of coal have been above the pre-pandemic average and Indonesia has indicated it would like to produce and export more coal to satisfy global demand.

Indonesia to push for B35

Indonesia's Ministry of Energy and Mineral Resources recently announced a further increase in the mandated minimum biodiesel blend to 35%, indicating that the new biodiesel named B35 could be the new mandate by the end of July. The ministry's readiness to shift to a higher biodiesel blend may be viewed positively in terms of lowering vehicle emissions but it will have implications for the domestic palm oil supply.

Indonesia banned exports of palm oil last April to ensure a stable domestic supply of cooking oil. Since then, the ban has been lifted and export levies removed until 31 August. However,

months of export restrictions have led to a supply glut and falling prices. Increasing the mandated biofuel content of biodiesel to 35% may address the current domestic oversupply although this could translate to higher cooking oil prices domestically.

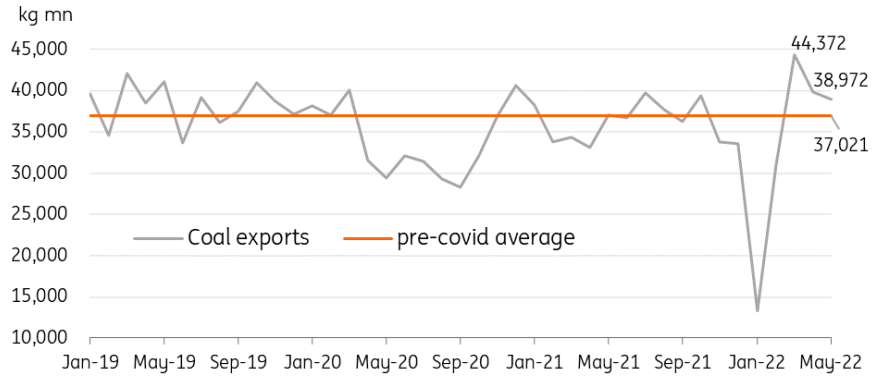
Delayed until further notice

Indonesia was scheduled to impose carbon taxes in April 2022 under the Tax Regulation Harmonization Law of 2021. The new law would have charged $2.1 per ton of carbon on coal plants but has been delayed indefinitely.

EV roadmap has some takers

Indonesia's strategy to develop its EV market is supported in large part by its reserves of nickel, the key commodity used in EV battery production. In 2022, Hyundai Motors rolled out its first EV produced in Indonesia after inaugurating the vehicle plant in March 2022 and the EV battery plant in September 2021. More recently, Indonesia's Investment Coordinating Board announced that Volkswagen would be investing in Indonesia to develop an EV battery ecosystem within the year.

Indonesia's coal exports rise to fill energy gap due to Ukraine war



Source: CEIC

Conclusion

The fallout from the Ukraine war on global commodity prices has benefited the resource exporter Indonesia in the first half of 2022. Higher prices of coal have bolstered the trade surplus to record highs, which in turn has helped keep the currency stable and the central bank on hold. The accommodative stance from Bank Indonesia could help to provide an environment for investments to transition to renewable sources of energy – but at the cost of global partners still utilising Indonesia's coal as a source of energy in the near term.

Meanwhile, Indonesia's strategy to increase mandated biofuel content in diesel may result in lower emissions from road vehicles. However, Indonesia's aggressive push to develop palm plantations has led to concerns about deforestation. Thus, despite the positives of lower vehicle emissions, Indonesia may need to develop sustainable measures in the development of palm oil plantations in the long run.

Lastly, Indonesia's decision to delay the planned carbon tax last April has been linked directly to the uncertainty caused by the Ukraine war. Since then, the planned carbon tax has been delayed indefinitely suggesting that the war has directly delayed the implementation of this measure.

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Article | 1 August 2022

Philippines revives talk of nuclear power as energy imports spike

Subsidies have been deployed to blunt the impact of the Ukraine war on domestic inflation, but long-term fixes to the energy sector will require legislative reforms

The only nuclear power station in the Philippines is the inactive Bataan power plant

Where it wants to be: no specific target date for net-zero emissions but lower emissions by 2030

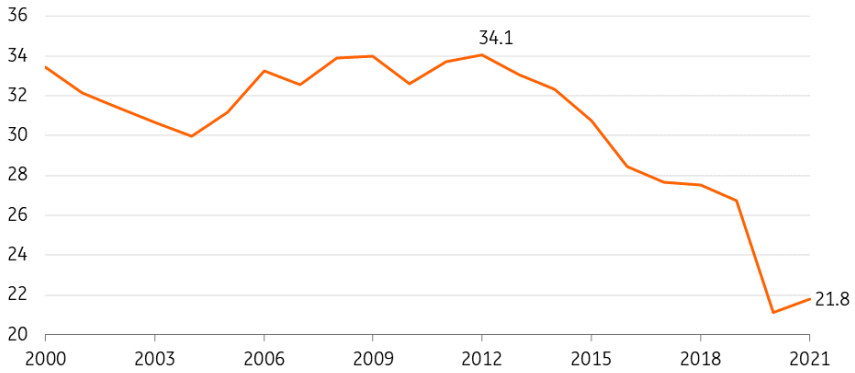
The Philippines does not have an explicit net-zero emissions target but has committed to lowering 2015 level emissions by 75% on or before 2030 (2.7% unconditional, 72.9% conditional on international financial and technical support).

What it's been doing to get there

The Philippines has passed relatively limited and dated legislation related to lowering emissions such as the Republic Act No. 9513 or the Renewable Energy Act of 2008 to promote the development of renewable energy sources.

More recently, the Philippines passed the Republic Act No. 11697 or the Electric Vehicle Industry Development Act of 2021 (EVIDA) to build a framework that promotes clean energy and sustainable sources for transportation to lower dependence on fossil fuels.

Renewable energy % to total generation has dipped sharply in recent years



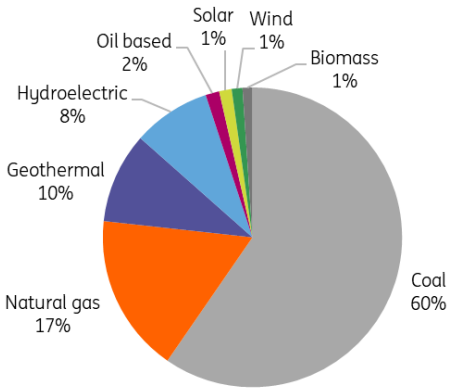
Source: Philippine Department of Energy

Planned shift to renewable power

Part of the strategy to lower emissions in the Philippines is centred on shifting to renewable energy in the power sector. The Philippines is currently implementing the National Renewable Energy Program under the Renewable Energy Act, which aims to push renewable capacity from 4.8 GW to 15.3 GW by 2030. Under this programme, The Department of Energy aims to increase geothermal capacity by 75%, hydroelectric power capacity by 160%, add 277 MW of biomass power capacity, increase wind power generation to 2.3 MW, and build 284 MW of solar power.

The Philippines recently called for a moratorium on new coal plant construction although four base load plants remain in the pipeline. Despite these aspirational targets, the Philippines remains heavily dependent on non-renewable sources of power for its electricity grid. The share of renewable sources used in total energy generation has dropped from a high of 34.1% in 2012 and is now at around 22%, with coal being the primary source of energy at roughly 60% of the total.

The Philippines is still very reliant on non-renewable energy



Source: Philippine Department of Energy

Attempting to jumpstart the domestic electric vehicle industry

The Electric Vehicle Industry Law (EVIDA) was passed in 2021 to help the country lower emissions from road vehicle usage. The new law called for the creation of the Comprehensive Roadmap for the Electric Vehicle Industry, which seeks to promote the adoption of EVs and develop an EV charging station network. EVIDA also provided tax perks on the purchase of EVs and hybrid EVs to encourage consumers to shift to these types of vehicles.

So far, penetration of EVs in the Philippine vehicle market has been slow, comprising a mere 0.09% of total vehicles on the road. One likely reason for the slow pickup in EV sales is that infrastructure is quite limited with only 19 charging stations available for use in the country.

What's happened since the Ukraine war

Subsidies as a stopgap remedy

Despite the high price environment for energy as a result of the Ukraine war, the volume of Philippine fuel and coal imports increased in 2022. This suggests that at least initially, the national government has yet to turn to alternative modes of power generation or transportation in response to the fallout from the Ukraine war.

Instead, the national government has opted to provide cash subsidies to lower-income households, farmers and public transportation to soften the impact. So far, the Department of Budget and Management has allocated PHP6.1 billion for the different types of subsidies this year. On top of cash subsidies, President Ferdinand Marcos has extended a free bus service in the capital of Manila implemented by the Department of Transportation until the end of the year. For now, it looks as though the current administration will resort to subsidies to calm public unrest during Marcos's first month in office.

Going nuclear again?

Prior to the Ukraine war, the Philippines approved nuclear energy as a potential source of power after Executive Order No. 164 was signed by former President Rodrigo Duterte back in February this

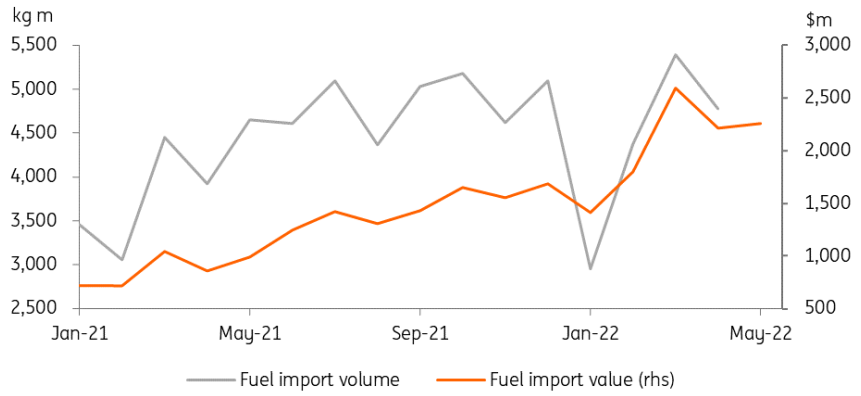
year. Since then, the spike in global energy prices has resulted in increased demand for the Philippines to shift to nuclear power.

Currently, the only nuclear power station in the Philippines is the inactive Bataan power plant built by the current president's father. Despite a renewed push to redevelop the plant, President Marcos may need to pass amendments to existing legislation which would allow the government to invest in nuclear power. Marcos ran on a platform that pushed for the development of renewable energy, but we will now need to see if he can sidestep the legal impediments to restarting the nuclear plant in the near term.

Accelerated timeline for a carbon tax?

The Department of Finance has been looking into the implementation of a carbon tax since 2021. Given the country's high level of debt, Finance Secretary Benjamin Diokno has indicated he is open to imposing this by 2025.

Higher prices have not slowed coal imports



Source: CEIC

Conclusion

The Philippines is highly susceptible to the energy price spike induced by the Ukraine war given its dependence on imported coal and mineral fuel. So far, President Marcos has resorted to subsidies to blunt the impact of higher commodity prices, which does not bring the Philippines closer to lowering emissions in the near term.

Meanwhile, calls for the shift to nuclear energy and the refurbishment of the Bataan nuclear plant appear to be timely. However, legal impediments may delay the adoption of this type of power – at least until amendments to existing legislation are made.

Lastly, comments from the DoF Secretary suggest that the Philippines is open to implementing a carbon tax by 2025, but such efforts appear to be in line with debt reduction rather than climate change. Thus, despite the surge in commodity prices due to the war in Ukraine, we do not believe that the Philippines is moving closer to attaining 75% lower emissions by 2030.

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Article | 1 August 2022

Singapore pursues ambitious climate goals

Singapore is continuing to pursue its net-zero emissions target, but the high price environment for energy has heightened calls for the city-state to consider other renewable energy options

Price pressures are still evident in Singapore

Singapore's climate goal: Net-zero by or around mid-century

Singapore recently announced a revised ambition to achieve net zero emissions by or around mid-century.

What it's been doing to get there

Singapore unveiled the Singapore Green Plan 2030 in 2021 and recently raised its ambition to achieve net-zero emissions by or around mid-century. Singapore is currently consulting with industry and stakeholder groups and will finalise its plans before official changes are made to its previously-submitted Long-term Low Emissions Development Strategy (LEDS).

Singapore Green Plan 2030

Singapore announced the Green Plan 2030 (GP2030) in 2021, focusing on five pillars (city in nature, sustainable living, energy reset, green economy and resilient future) each with specific targets by 2025/26 and 2030. GP2030, which is viewed as a nationwide effort to pursue sustainability goals, involves five ministries and looks to strengthen existing efforts and set additional targets.

Some examples of 2030 targets are to plant one million trees (city in nature), expand the rail network to 360km from 230km (sustainable living), target 60,000 electric vehicle charging stations (energy reset), promote Singapore as a sustainable tourist destination (green economy), and meet 30% of Singapore's nutritional needs through locally produced food (resilient future).

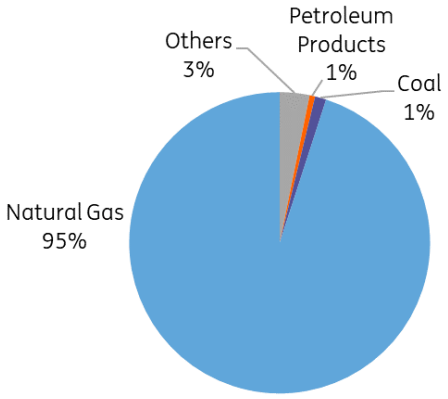
Reducing emissions derived from power generation

Singapore aims to lower carbon emissions by reducing emissions derived from power generation. Over the past few years, Singapore has been able to decrease its reliance on petroleum-based power generation while shifting to power plants driven by natural gas. Singapore considers natural gas as the fossil fuel with the lowest emissions and natural gas accounts for 95% of Singapore's power generation capacity, down from only 18% back in 2000.

On top of the shift to natural gas, Singapore has also identified solar-based power generation as a key renewable source given the country's designation as alternative energy disadvantaged. Singapore aims to install up to 2 GWp to power roughly 350,000 households. However, given Singapore's limited land area, achieving this 2030 aspirational goal of 2 Gwp would generate only 3% of the projected 2030 demand.

Given the constraints faced in generating renewable energy (RE), such as limited land area, low wind speeds, and a lack of geothermal resources, Singapore has resorted to importing power generated by RE sources. In 2014, Singapore signed the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP) with Singapore recently sourcing hydroelectric power from Lao PDR via Thailand and Malaysia. Access to the regional power grid allows Singapore to work around existing geographical impediments to RE generation while still working to lower emissions from power used in the country.

Singapore power generation by source (2021)



Source: Singapore Energy Market Authority

Developing low carbon technology

Singapore also aims to lower emissions by developing low carbon technology across several aspects of the economy. The country's current US$5/tonne carbon tax, the first to be implemented in the region, began in 2019 under the Carbon Pricing Act, to incentivise the shift to emissions reduction.

Singapore also allocated an SGD25bn budget for the Research Innovation Enterprise RIE2025, which alongside GP2030, will push firms to establish research activities related to sustainable development.

Both budgetary support and price incentives will be key to attaining the various targets set by GP2030 and Singapore's overall goal to achieve net-zero emissions by mid-century.

Green Finance action plan

In 2019, Monetary Authority Singapore (MAS) launched the Green Finance Action Plan to make Singapore a leading global centre for green finance. In 2020, MAS issued papers on the proposed guidelines on environmental risk management to help strengthen the financial sector's role in supporting the transition to an environmentally sustainable economy.

What's happened since the Ukraine war

More ambitious carbon tax plans

Given the recent developments surrounding the Russia-Ukraine war, Singapore has decided to push ahead and set a more ambitious carbon tax timeline, currently now $5/tonne, to $25/tonne by 2024/2025, $45/tonne by 2026/2027 and reaching $50 to $80/tonne by 2030.

Now open to nuclear?

Previously, Singapore had ruled out nuclear energy as a potential RE option during the submission

of its revised Nationally Determined Contribution (NDC) to the UN, indicating that the risks associated with nuclear energy outweigh the potential benefits. The Ukraine war and the resulting surge in commodity prices have sparked renewed interest in nuclear energy with the Energy Market Authority (EMA) indicating that it would continue to monitor areas such as nuclear energy and their implications for Singapore. Improved technology may be the key for nuclear energy to be utilised in Singapore as now available small modular reactors could address concerns about Singapore's limited land area and population density.

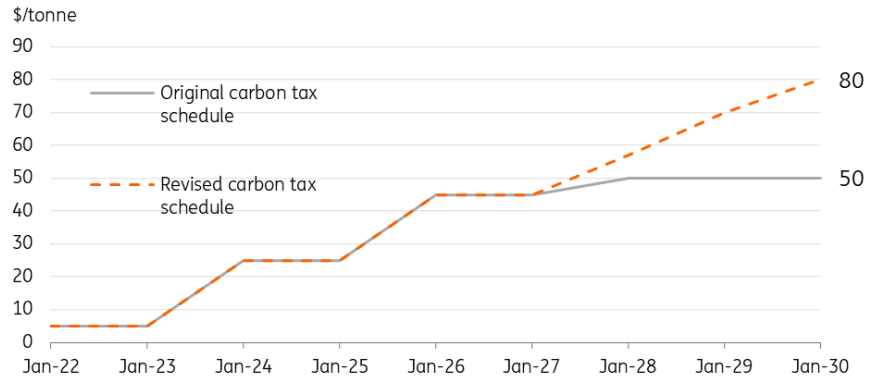
No subsidies

Surging commodity prices and the impact on petrol and diesel prices fuelled calls for Singapore to either reduce or suspend duties to help lower prices. Finance minister Lawrence Wong rejected these calls, indicating that such a move would effectively subsidise higher-income households given that only four in 10 households own cars. Instead, just like in the Philippines, Singapore opted to retain existing duties on fuel while rolling out a support package targeted at lower-income households.

Net zero emissions by 2050 in the power sector

Singapore's EMA recently published Charting The Energy Transition to 2050, the Energy 2050 committee's report indicating its findings and recommendations on how Singapore can lower carbon emissions in the power sector. The report also suggests that Singapore can achieve net-zero emissions in the power sector by 2050 by developing new sources of energy (hydrogen), importing renewable energy from the regional power grid, and maximising solar power use.

Singapore chasing more ambitious carbon tax targets



Source: Singapore Budget 2022

Conclusion

The ongoing conflict in Ukraine has not slowed down Singapore's push toward its sustainability goals so far. One example would be Singapore opting to chase more ambitious carbon tax goals, unlike neighbouring Indonesia which chose to delay its targets.

Meanwhile, the high price environment for energy has heightened calls for Singapore to consider other RE options (nuclear and hydrogen) and chase net-zero emissions in power by 2050.

Lastly, despite the clamour for the removal of duties on petrol and diesel, authorities cited the need to preserve the incentive for car owners to shift to energy-efficient modes of transportation or purchase low-emissions vehicles.

Thus, the war in Ukraine appears to have helped push Singapore's efforts to attain its sustainability goals so far.

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