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Impact on Energy Markets from the Russia – Ukraine Crisis

Energy Special Report

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Russia is a critical global energy exporter: it accounts for 25 percent of world gas exports, nearly all to Europe, 18 percent of coal sales, and 11 percent of oil exports, as well as being an important supplier of metals, fertilisers and food. The Russian invasion of Ukraine has brought global energy supply chains to the forefront once again. Regardless of how this war will unfold, it will have a deep and long-lasting impact on the world energy markets, choices of suppliers and technologies, and paradigms of energy security. What is the impact of the crisis on oil & gas markets? What are the implications of the sanctions on Russia's energy role?

SPECIAL REPORT

This research paper is a Special Report published by the Al-Attiyah Foundation. Each Special Report focuses on a prevalent current affairs topic that has ramifications for the energy industry and wider community. The papers are distributed in hard copy to members, partners, and universities, as well as made available online to all Foundation members.

- On 24th February 2022, Russia invaded Ukraine, a major escalation in the ongoing conflict between Russia and pro-Russian separatists and the Ukrainian forces that began in 2014. The Russian invasion of Ukraine is the largest conventional military campaign in Europe since World War II.
- In response to the invasion, the United States and the EU have imposed various sanctions on Russia that has triggered a domestic economic crisis.

Impact on Oil Markets:

- Brent oil prices could reach ~US$ 130 / bbl by 2Q2022 if the conflict disrupts 1 Mbbl / d of oil supplies from Russia.
- Russian pipelines have enough transport capacity to supply 0.5 Mbbl / d more of oil supplies to the Asia-Pacific region, but additional shipments of West Siberian oil will still have to go from the Baltic or Black Seas, with high shipping costs to Asia.
- The ongoing price shock could force the OPEC+ group to further reduce their supply cuts. The price shock may also re-energise efforts between the P5+1 members and Iran to reach an agreement on the Joint Comprehensive Plan of Action ('Iran Nuclear Deal') in order to bring additional oil back on the market.
- Venezuela could also help ease global oil prices moderately by increasing oil production to 1 Mbbl / d if the United States eases export sanctions on Petróleos de Venezuela (PDVSA).
- Russia and Ukraine will continue to face a severe decline in oil demand in the medium-term. The countries together account for 4% of global oil demand, with Russia consuming 3 Mbbl / d and Ukraine consuming 0.2 Mbbl / d.

Impact on Natural Gas Markets:

- The Russian invasion of Ukraine has put 155 BCM / year of Russian pipeline gas supplies to Europe at risk, and if supplies are closed or disrupted entirely, then Europe will face an overwhelming energy challenge.
- Europe will continue experience a tight natural gas market for the rest of 2022 as the Nord Stream II pipeline project is halted.
- European electricity and industrial energy mix will require significant fuel-switching efforts to balance natural gas demand.
- Europe could generate an additional ~150 TWh of electricity by increasing its capacity factors for coal, bioenergy, wind, and nuclear generation, saving approximately 30 BCM of gas.
- Europe is likely to face another year of high electricity prices as natural gas will continue to be the ultimate price determinant.
- LNG suppliers will gain strongly from high prices in the short term, and increased market share in the longer term, as Europe makes strong efforts to reduce or eliminate dependence on Russian gas and as it is seen as an unreliable supplier by other customers.

Sanctions on Russia

- The international response to the Russian invasion of Ukraine has been swift with all G7 economies announcing coordinated sanctions on Russian companies, financial institutions, and individuals.
- European IOCs hold the largest portfolio of Russian oil & gas assets, with BP, TotalEnergies, and Wintershall being relatively the most exposed. Equinor, BP and Shell are divesting their investments across Russia; ENI is pulling out of the Russia – Turkey Blue Stream pipeline; whereas TotalEnergies, and OMV have announced they will not be pursuing new investments in the country.
- India and China-based NOCs also hold significant investments in the Russian energy sector. India has maintained a neutral diplomatic stance over the conflict in Ukraine and will balance its ties with Russia and the West. China will continue to maintain normal trade relations with Russia, despite the conflict increasing pressure to improve energy, metals, and food import security.

On 24th February 2022, Russia invaded Ukraine, a major escalation in the ongoing conflict between Russia and pro-Russian separatists on one side and the Ukrainian forces on the other that began in 2014. The Russian invasion of Ukraine is the largest conventional military campaign in Europe since World War II.

In 2021, Russia began mobilising its conventional military forces along the border with Ukraine, as well as in Belarus, creating an international crisis. During this period, the President of Russia, Vladimir Putin, reiterated Russian irredentist views, questioned Ukraine's right to statehood, and accused the North Atlantic Treaty Organisation (NATO) of threatening Russia's security, and demanded that Ukraine should never join the European Union (EU) bloc and the NATO alliance. Conversely, during the pre-invasion period, the EU and the United States accused Vladimir Putin of planning to invade Ukraine, with some Russian officials repeatedly denying until the day of the invasion.

On 21st February 2022, Russian recognised the Donetsk and Luhansk People's Republics. Prior to the invasion, both regions were self-proclaimed republics that were controlled by pro-Russian separatist group. Three days later, Vladimir Putin announced a "special military operation" to "demilitarise and de-nazify" Ukraine[i].

Through a multi-pronged invasion along Ukraine's border with Russia, Belarus, and from the disputed Crimean and Donbas territories, Russian forces approached a number of key urban areas such as Kyiv, Kharkiv, Mariupol, Kherson, Chernihiv, and Sumy.

The Russian forces have encountered stiff military and local resistance and are beginning to experience various logistical and other challenges that could hamper their progress[ii]. This means the war could be prolonged and even more destructive, in the absence of a Russian decision to end it. On 27th February 2022, Vladimir Putin placed Russia's nuclear threat matrix on higher alert, which has raised tensions between the West and Russia.

The Russian action has received widespread condemnation from the international community and the United Nations, which has adopted Resolution ES-11/1, through which it has called an "emergency special session on the maintenance of peace" at the UN Security Council[iii].

In response to the invasion, the United States and the EU have imposed various sanctions on Russia that has triggered a domestic economic crisis.

Multinational corporations such as PepsiCo, Coca Cola, Apple, TikTok, Starbucks, BP, and Shell, among many, have begun to boycott the Russian and Belarussian market[iv].

Russia is the third largest producer of oil in the world after the United States and Saudi Arabia. In 2021, the country produced 11 Mbbl / d, which accounted for 12% of the global supply[v]. In addition to this, Russia holds the sixth largest proven reserves of oil that stand at 107 Bbbl.

Figure 1: Oil Production, Consumption, and Exports from Russia

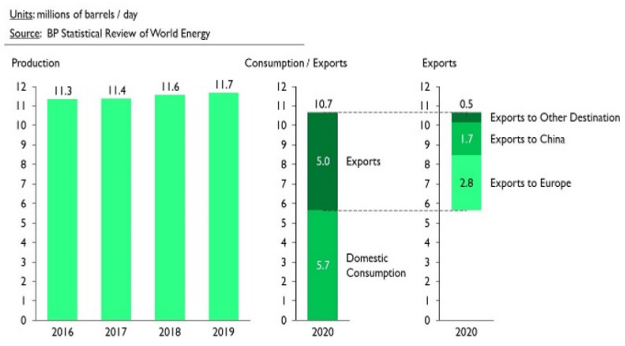


Figure 2: Map of Russian Oil Export Pipelines to Europe

Europe and China are the largest oil export markets for Russia. In 2020, Russia exported 5 Mbbl / d of which 3 Mbbl / d was delivered to Europe and 1.7 Mbbl / d to China[vi]. The rest of the domestic oil production is consumed by ~25 refineries across Russia with a total capacity of 6 Mbbl / d. 1 Mbbl / d of CPC blend crude from Kazakhstan is exported also via Russia's Black Sea ports[vii].

In 2020, Russia also exported 2 Mbbl / d of petroleum products of which 1.2 Mbbl / d was exported to Europe and 0.4 Mbbl / d was exported to the United States[viii].

In addition to oil and petroleum products, Russia is also the world's fifth largest producer of coal, with production of 400 Mt / year[xix]. In 2020, the country exported 193 Mt of coal of which 35% went to Europe, 18% to China, and 13% to South Korea[x].

Russia is also a major exporter of metal commodities such as palladium, nickel, aluminium, and copper; and agricultural commodities such as fertilisers, wheat, and sunflower oil. Russia and Ukraine combined account for 25% of global wheat exports[xi].

The Urals grade, which is the primary Russian oil blend, will continue to be the most disrupted oil grade in the short-term. The Urals grade is a medium heavy / sour blend and accounts for ~80% of Russian oil exports. It is a mixture of mostly Russian crude varieties with an API of 31.78° and sulphur levels of 1.35%[xii]. In addition to the Ural grade, exports of the Sokol grade could also be disrupted[xiii]. This grade is mainly produced from the Sakhalin-1 project in the Russian Far East region and has an API of 35.6° and sulphur levels of 0.27%[xiv]. The ESPO grade through the East Siberian pipeline, with 36° API and 0.5% sulphur, goes to China and the Pacific, and is less likely to be affected by sanctions.

Sanctions imposed on Russian banks by the West will make it difficult to process payments for deliveries. This will not only affect the price differential of Russian exports, but it will also lead to significant discounts on prices for future deliveries and may ultimately shift its supply from Europe to China or India.

The Southern Green Canyon grade from the Gulf of Mexico; Johan Sverdrup from Norway; Basra Light and Arab Light from the Middle East may replace supplies of the Urals grade to Europe. If China re-configures its refineries for an increasing intake of the Ural grade, this could lead to Middle Eastern producers to expand their Arab Medium exports to Europe. From the Middle East, Iraq is the largest exporter of oil to Europe with 0.8 Mbbl / d, followed by Saudi Arabia at 0.7 Mbbl / d[xv].

Russian pipelines have enough transport capacity to re-route 0.5 Mbbl / d of oil supplies from Europe to the Asia-Pacific region[xvi]. An escalation in the current geopolitical situation may negatively impact upstream production in Russia, which could force Russian refiners to limit their oil intake, and upstream producers to curtail production across some oil fields.

There is also a possibility that Russia could expand oil exports to China through the Trans-Manchurian railway infrastructure, and to the wider Asia-Pacific region through the Kozmino, Prigorodnoye, and De Kastri ports in the Russian Far East[xxvii].

Figure 3: Historical Brent Price and Forecasts

Some disruption in oil supplies will be inevitable in the short-term. Europe imports 25% of its oil from Russia and its storage terminals and infrastructure are not equipped to handle a sudden shock in supplies from piped crude and petroleum products[xviii]. In the short-term, 1 Mbbl / d of Russian supplies to Europe via the Druzhba (or Friendship) Pipeline, part of which crosses Ukraine, and the ~2 Mbbl / d of seaborne exports from the Black Sea (Novorossiysk port) are at the most risk from being disrupted[xix].

Brent oil prices could reach ~US$ 130 / bbl by 2Q2022 if the conflict disrupts 1 Mbbl / d of oil supplies[xx]. This risk could easily increase if seaborne exports from the northern ports and / or supplies to China, India, and the wider Asia-Pacific are disrupted. However, a swift takeover of Ukraine by Russian forces, and a limit to further sanctions, may limit the oil price volatility between US$ 100 – US$ 130 / bbl by 2Q2022.

The ongoing price shock could impel the OPEC+ group to further reduce their supply cuts. The United Arab Emirates' ambassador from the US has already suggested that his country could expand production. This would require agreement by the other OPEC+ members to expand output beyond current monthly targets[xxi]. The next OPEC meeting is scheduled for 31st March 2022.

The shock may also re-energise efforts between the P5+1 members, including the EU, and Iran to reach an agreement on the Joint Comprehensive Plan of Action (JCPOA or 'Iran Nuclear Deal') in order to release additional exports. On 5th March 2022, Iran has claimed

that it has reached an agreement with the International Atomic Energy Agency (IAEA) to resolve all outstanding doubts about undeclared materials from three nuclear sites by 2Q2022[xxii]. However, the agreement is expected to incur obstacles over the months ahead, as Russia has laid new demands, ostensibly in order to protect its economic relations with Iran and to protect itself from Western sanctions, but potentially also looking to halt the deal to avoid competition with its own oil exports[xxiii].

In addition to OPEC and Iran, Venezuela could also help ease global oil prices moderately, by increasing oil production by 400 kbbl / d to 1 Mbbl / d if the United States eases export sanctions on Petróleos de Venezuela (PDVSA) [xxiv]. Diplomats from the United States have met Venezuelan President Nicolas Maduro and have demanded the PDVSA supply at least a portion of its oil exports to the United States, in exchange for an ease in oil trading sanctions that have been imposed by the United States since 2019[xxv].

In terms of demand, Russia and Ukraine will continue to face a severe decline in their internal oil demand in the medium-term. Together, the countries account for 4% of global oil demand, with Russia consuming 3.2 Mbbl / d and Ukraine consuming 0.2 Mbbl / d[xxvi]. If a ceasefire is reached, the extent to which demand recovers in both countries remains to be seen, which may take months or maybe years to recover, depending on the infrastructure damaged, the resulting humanitarian crisis, and the effects of the sanctions.

Russia's oil demand is expected to decline by a much lesser extent than Ukraine's. Russian demand will be mainly impacted by sanctions that will reduce its economic activity making it difficult for Russian companies to conduct business and travel abroad. The decline in demand will not only have domestic consequences, but will also disrupt global oil balances.

Russia is the second-largest producer of natural gas in the world. In 2021, the country produced 639 BCM, 17% of global supply. Russia holds the largest proven reserves of natural gas at 37 TCM, followed by Iran at 32 BCM[xxvii].

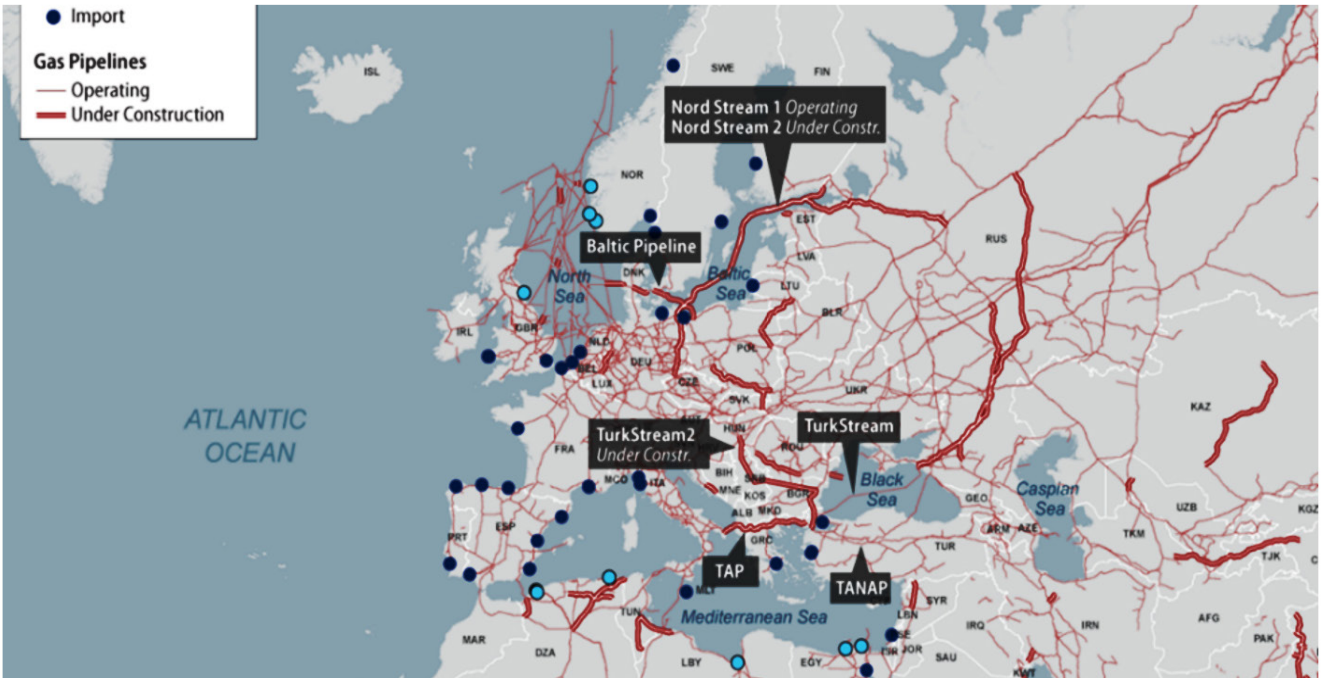
Europe and Turkey are the largest natural gas export markets for Russia. In 2020 Russia exported 17 BCM of liquefied natural gas (LNG) and 168 BCM of piped natural gas to Europe and Turkey.

Currently, there are five major routes for Russian piped supplies to Europe: direct piped exports to Finland and Baltic states; the Brotherhood pipeline (Yamal system) via Belarus and Poland; the Northern Lights system via Ukraine to Slovakia, Hungary, Romania, and on to central Europe; Nord Stream I under the Baltic Sea directly to Germany; and TurkStream under the Black Sea to Turkey, from where connections are currently being developed for supplies to Southeast Europe. Russia also exports to Turkey via the Blue Stream pipeline under the Black Sea, and the Balkan (Western) route via Ukraine to Moldova, Romania, Bulgaria and Turkey could also be used.

Throughout 2021, the Nord Stream II pipeline has been at the core of a wider geopolitical conflict between the EU, United States, and Russia. The pipeline is awaiting approvals to begin operations and runs mostly parallel to the Nord Stream I pipeline. Nord Stream II has a capacity of 55 BCM / year and would double the system's total capacity upon commercial operations[xxix].

Prior to the invasion, there were several indications that the United States and the EU used the pipeline's approval to bargain for a reduction in the risk of a Russian military action in Ukraine. Despite the bargaining efforts going in vain, the United States and EU had seen precisely that risk materialise over the last two weeks, prompting them to halt approval for Nord Stream II to commence operations[xxx].

Figure 4: Map of Natural Gas Supply Routes to Europe



The suspension of the Nord Stream II project means that it will not be operational his year. Any incremental increase in natural gas supplies from Russia will be insignificant in overturning a future disruption to European natural gas balances.

As a result, Europe will continue to experience a tight natural gas market for the rest of the year. Europe's natural gas market is already facing a supply shock with natural gas storage levels at a five-year low and the Dutch TTF prices almost five times higher than 2020[xxxi].

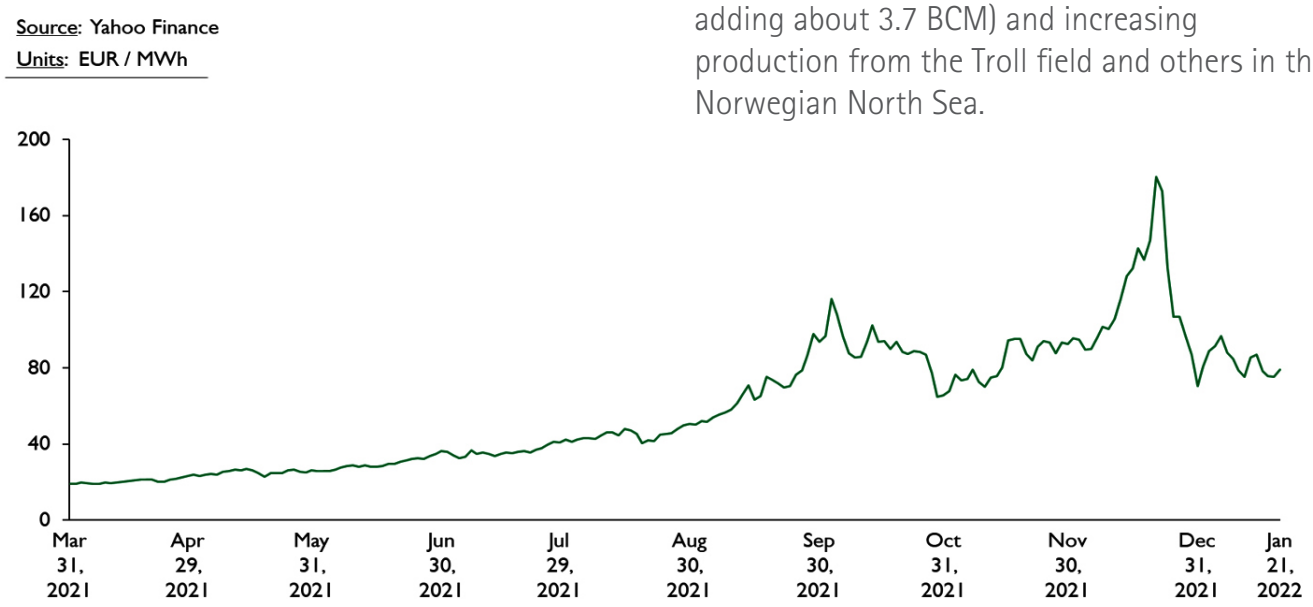
Currently, approximately 30% of European natural gas consumption occurs in the power sector, 30% in the industrial sector, and the remainder in the residential sector, mainly for heating.

Although a total shutdown of piped supplies from Russia is unlikely, the Russian invasion of Ukraine has put 155 BCM / year of pipeline supplies (plus another 40 BCM of Russian LNG in 2020) to Europe at risk, and if supplies are closed or disrupted entirely, then Europe will face a dramatic challenge[xxxii]. In such a scenario, Eastern European countries would be hardest hit; with countries such as Ukraine, Hungary, Romania, and Slovakia most reliant on Russian supplies. This would lead to demand destruction for Russian natural gas supplies and an increase in demand for alternative fuel sources and renewables.

Europe needs a reliable supply of piped natural gas, in addition to LNG imports in order to balance its natural gas market and restore / maintain sufficient storage levels throughout 2022. However, the suspension of Nord Stream II has diminished the chances of achieving this and Europe is expected to face a prolonged period of gas supply deficit and high prices.

Nonetheless, ~60% (~93 BCM) of natural gas supplies from Russia could be replaced with an increase in domestic production across the United Kingdom, Netherlands, and Norway; and through additional imports from Qatar, the United States, Azerbaijan, Libya, and Algeria. Domestic production in Europe could be driven by restarting shut-in production at the Groningen field in the Netherlands (possibly adding about 3.7 BCM) and increasing production from the Troll field and others in the Norwegian North Sea.

Figure 5: Dutch TTF Gas Prices



LNG supplies from the United States and Qatar could also be large sources, given the flexibility of LNG contract structures offered by both countries. Qatar has historically relied on an oil-indexation formula for pricing its long-term LNG supply contracts, but is considering greater use of the Japan Korea Marker (JKM) [xxxiii].

However, limited re-gasification capacity may prevent Europe from importing additional supplies of LNG. Regasification capacity in Europe, including the UK and Turkey, is 237 BCM, and they imported 119 BCM in 2019, a utilisation rate of 50%.

Of this, 0.68 BCM in Malta is isolated. Six operating terminals in Spain account for 44 BCM, plus 6.9 BCM in the mothballed El Musel terminal, and Portugal has 7.6 BCM. The Medgaz pipeline from Algeria to Spain has 10.5 BCM/y capacity while the 11.5 BCM GME pipeline via Morocco has been closed over a political dispute. Gas demand in Spain and Portugal in 2019 totalled 42 BCM. Spain can export 5.5 BCM/y to Spain with the MidCat pipeline able to add 7.5 BCM/y if and when constructed. Therefore, if the Iberian peninsula were importing gas at full capacity, it would have a surplus of 20 BCM/y with current infrastructure and 38.5 BCM/y with expanded infrastructure, which is far in excess of the amount that could be exported to France.

Run at capacity year-round, then, and allowing for the Iberian constraint, Europe could theoretically increase LNG imports by about 103 BCM per year. This assumes that this much LNG would be available on the international markets and that it would be possible to import it year-round, allowing for the seasonality of demand and storage utilisation. European storage capacity is 117 BCM, and it held about 38 BCM at the end

Figure 6: European Electricity Mix

	2021			2022			Change in Generation 2021 - 2022
	Capacity (GW)	Capacity Factor (%)	Generation (TWh)	Capacity (GW)	Capacity Factor (%)	Generation (TWh)	
Nuclear	130	78	884	124	80	868	-16
Natural Gas	231	34	695	233	52	-	-
Hydropower	174	37	571	175	37	566	-5
Coal	150	44	579	133	55	641	63
Wind	223	23	447	233	23	469	22
Bioenergy	47	52	212	48	60	253	41
Solar	173	12	180	182	12	191	11
Liquids	34	16	48	32	30	84	36
Other	15	23	30	15	23	30	1
Total	1,176	-	3,646	1,175	-	3,104	152

of winter 2021-22. The EU is considering a legal requirement that storage be 90% full by the end of September each year.

At the same time, the European electricity and industrial energy system will also require significant fuel-switching efforts to balance gas demand. In 2021, renewable generation was limited by weather conditions, and coal generation increased by 88 TWh, and nuclear increased by 50 TWh.

Given Europe's capacity (or load) factor for different electricity generation sources and despite a decline in fossil fuels-based generation capacity due to the EU's environmental policies, Europe could generate an additional ~150 TWh of electricity by increasing its utilisation for coal, bioenergy, wind, and nuclear generation. For example, if the capacity factor was increased by an additional 10%, then coal generation could increase by 60 TWh and bioenergy generation could increase by 75 TWh in 2022.

If wind speeds normalise this year and with an additional capacity of 10 GW coming online in 2022, then wind generation could provide an additional ~22 TWh. Solar generation also has the potential to add ~11 TWh of new supply in 2022.

In terms of nuclear, several existing plants in Germany and Belgium are expected to be decommissioned and unplanned outages are curtailing capacity. The Belgian government has decided to close its nuclear power projects by 2025 [xxxiv], although there are thoughts of postponing this. Nuclear capacity is expected to decline by 6 GW in 2022.

In 2022, if European electricity demand continues to be 3,646 TWh and if weather conditions are adequate, then an increase in capacity factors for conventional and renewable generation could provide an additional 150 TWh, despite the nominal drop in electricity generation from 3,646 TWh to 3,104 TWh from not using gas. The European electricity system is well interconnected, which makes transmission and distribution from alternative sources technically feasible.

Nonetheless, what is certain is that Europe is likely to face another year of high electricity prices as natural gas will continue to be the ultimate price determinant in the power sector.

In the longer term, the crisis will give an enormous boost to the deployment of renewable energy, efficiency and electrified heating in Europe. The Netherlands and UK have already announced plans for major scale-up of offshore wind.

There will also be efforts to replace gas in industry with electric heat and hydrogen. The hydrogen market is nascent, but there is an ambitious portfolio of projects across Europe itself as well as North Africa and the Middle East. European utilities and industries may now be willing to enter into long-term contracts for hydrogen supply, helping it to scale up and reduce costs. The provision of ammonia, made from hydrogen, is particularly important given its importance as a fertiliser, likely reductions in Russian supplies, and the loss of European output because of excessively high gas feedstock prices. On the other hand, Russia, which had just begun developing a hydrogen strategy based mainly on 'blue' (natural gas-derived) hydrogen, will now not have access to finance, technology or European markets.

15 SANCTIONS ON RUSSIA

The international response to the Russian invasion of Ukraine has been swift with all G7 economies announcing coordinated sanctions on Russian companies, financial institutions, and individuals. These sanctions have caused a large devaluation of the Russian rouble (RUB), which has depreciated by ~50% [xxxv]. In response to this, the Central Bank of Russia has doubled its interest rate to 20%[xxxvi]. A steep devaluation of the rouble will curtail imports, leading to a narrowing of the Russian current and balance of payments account.

Russia by some measures is now the most sanctioned country in the world. With each country implementing sanctions in their own way, it is unlikely any particular measure will directly alter the export of oil and gas from Russia, but some exports could be partly diverted to China, India, or other countries across the Asia-Pacific region.

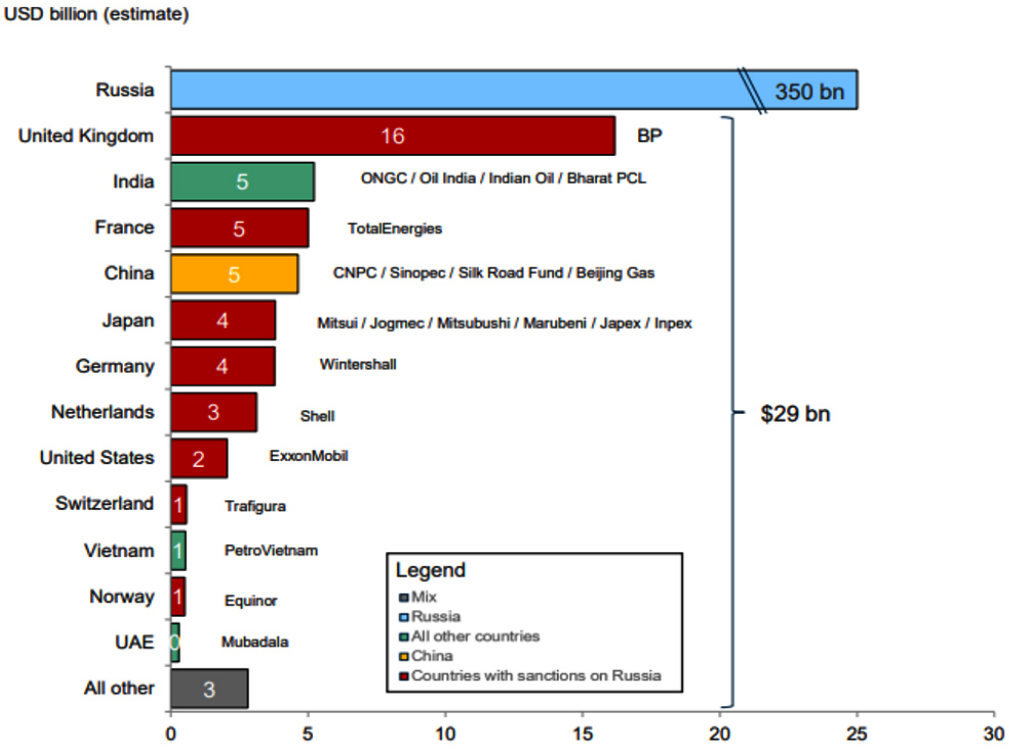
At the same time, India and China are also exploring the possibility of using the Chinese yuan as a reference currency to value the Indian rupee – Russian rouble trade mechanism [xxxvii]. In addition to this, both countries are also studying a floating exchange rate mechanism with Russia, in an effort to purchase oil from Russia at a discounted price in order to reduce inflationary pressure [xxxviii].

The effectiveness of the West's sanctions on Russia have provoked an odd debate on their effectiveness. Despite the sanctions' already posing huge problems for Vladimir Putin, it is also possible that the deep complexity of the international financial systems may reduce their effectiveness, if Russian entities and individuals utilise creative channels and / or cryptocurrency markets.

The EU has or will be adopting new sanctions against Russian oil majors such as Rosneft, Transneft, and Gazprom – but will continue to purchase oil and gas from them. Currently, these companies face restrictions on loans and debt financing[xxix]. However, a new round of sanctions will include an investment ban, which will further restrict their funding for new upstream projects.

Russian energy companies such as Gazprom, Rosneft, Lukoil, and Novatek, own 93% of oil and gas resources across Russia[xl]. The Sakhalin area is the most heavily exposed to international oil companies (IOCs), and their presence mainly contributes to LNG operations on the project. European IOCs hold the largest portfolio of Russian oil & gas assets, with BP, TotalEnergies, and Wintershall the most relatively exposed to the Russian energy sector.

Figure 7: International Oil Companies and the Size of their Revenues from Oil & Gas Sales from Russia



IOCs such as Equinor, BP and Shell are divesting their investments across Russia; ENI is pulling out of the Russia – Turkey pipeline; whereas TotalEnergies, and OMV have announced they will not be pursuing new investments in the country. BP has announced it will divest its 19.75% stake in Rosneft[xli]. Shell will be exiting the Sakhalin LNG project[xlii]. Equinor's Board of Directors have decided to stop new investments in the Russian energy sector and are planning to exit from their Russian joint ventures[xliii]. TotalEnergies and OMV, despite continuing their operations in the country, will no longer pursue new investments in Russia[xliv xlv].

ExxonMobil has announced it will be discontinuing its operations on the Sakhalin-1 project and will not be engaging in any new investments in Russia[xlvi]. The IOC operates the Sakhalin-1 project on behalf of an international consortium consisting of Japanese, Indian, and Russian companies.

International commodities trader Trafigura is also reviewing its 10% equity holding in the Vostok Oil project and will cease future investments in Russia[xlvii]. Trafigura has a longstanding commercial relationship with Rosneft and is one of the largest traders of Russian oil.

Out of the three largest global oil service companies, Halliburton (which had least activity in the country) has said it will cease operations, while Schlumberger and Baker Hughes will not carry out new investments or technology transfers. Although Russian services are able to continue work, the loss of Western technology will slow drilling, completion, maintenance and optimisation activities, and lead to a fall in production over time.

In addition to European and American IOCs, India- and China-based IOCs also hold significant investments in the Russian energy sector. Indian energy firms have invested US$ 16bn in the Russian energy sector, with various investments in assets such as the Sakhalin-1, Vankorneft, and Taas-Yuryakh project[xlviii]. Oil and Natural Gas Corporation Limited (ONGCL) is the largest Indian energy company in Russia, with a resource base of 1.1 Bbbl[xlix]. The company's most prominent investment is its 20% participating interest in the Sakhalin-1 project[l].

ONGCL also owns Imperial Energy, which carries out exploration and production in the Tomsk region of Western Siberia. ONGCL has also acquired a 20% equity stake in Vankorneft, which operates the Vankor and North Vankor fields.

India has maintained a neutral diplomatic stance over the conflict in Ukraine and will continue to balance its ties with Russia and the West. The country's first statement at the UN Security Council did not specifically name Russia or Ukraine; instead, it regrets that calls from the international community for peaceful diplomacy had not been observed. Before the UN Security Council voted on a draft resolution to condemn the Russian invasion, India faced a multi-pronged pressure from Russia, the United States, and Ukraine. Eventually, India chose to abstain from the vote[li].

India's response at the UN Security Council is largely based on its defense ties with Russia, which is one of its largest defense suppliers. Recently, Russia supplied India with the S-400 missile defence system, which enhanced its strategic capabilities against China and Pakistan, despite threats of sanctions from the United States[lii].

It remains to be seen whether the world's largest democracy will take a clear stand on the conflict. Russia has accepted India's increasing ties with the United States over past two decades. But Moscow will continue to press India for its support. Should India change its position in favour of Ukraine or the West, Russia could use its own pressure strategy, which could involve strengthening military, energy, and economic ties with India's arch-rival Pakistan.

China is another major investor in the Russian energy sector, with China National Petroleum Corporation (CNPC) being the largest player. The company holds a 20% stake in the Yamal LNG project and a 10% stake in the Arctic LNG-2 project[liii]. Additionally, CNPC has also participated in the construction and operation of the Russia-China Crude Pipeline and the Eastern route of the Russia-China Gas Pipeline project[liv].

Over the last five years, China has also doubled its purchases of Russian energy supplies to ~US$ 60bn[lv]. The country is also looking to expand its footprint in the Russian energy and materials sector through additional investments in Gazprom and United Company Rusal (a large aluminium producer). The government of China is currently talks with state-owned firms CNPC, Sinopec, the Aluminium Corporation of China, and China Minmetals Corporation; and any deal will likely be based on enhancing China's food and energy security.

China will continue to maintain normal trade relations with Russia, despite the conflict increasing pressure to improve energy, metals, and food import security. Similar to India, China has also abstained from UN Security Council's voting on Ukraine. The country's position is that the top priority for all parties is to exercise restraint to prevent the situation from escalating.

China is Russia's key geopolitical ally and Moscow hopes that it will continue to provide rhetorical and substantive assistance. Conversely, China is also sensitive to the West's attempts to foster tensions between the Chinese and Russian bilateral relationship.

However, the invasion of Ukraine is a cause for concern for China. It is unclear how much economic support China will provide to Russia. It is expected that China will not put its own economic interests at risk in order to help Russia avoid further sanctions or soften their impact. At the same time, China will also continue to protect and maintain its economic, trading, and political relationship to Europe and the US.

In recent days, China has also presented the idea of playing a mediating role in the conflict[lvi].

The country is widely seen in the United States and the EU as too pro-Russian and it does not have enough experience in playing a mediating role in Europe. However, there is some hope that China may put pressure on Russia to end the conflict[lvii].

Nonetheless, India's and China's neutral positions and their decision to abstain from the UN Security Council vote will be harder to maintain if the Russian army resorts to more brutal methods, the Russian economy continues to deteriorate, and the fighting in Ukraine is prolonged.

Middle Eastern countries are divided in three categories on the crisis in Ukraine: the pro-Russian countries such as Syria, the anti-invasion countries such as Kuwait and Lebanon, and the neutrals which includes Egypt and the GCC countries.

Lebanon and Kuwait have been invaded by their neighbours in the past and have held a different public position from their regional peers. Lebanon is the only Middle Eastern state that has issued an official statement condemning Russia's aggression against Ukraine. Kuwait was the only Middle Eastern country that co-sponsored a UN Security Council resolution to hold Russia accountable for its aggression against Ukraine[lviii].

The relative neutrals, consisting of Egypt and the GCC countries, are likely to maintain some distance between the United States and Russia. In recent times, the United Arab Emirates (UAE), Saudi Arabia, and Egypt have had a cooler relation with the United States given their differences on the conflict in Yemen, the JCPOA with Iran, and human rights issues. These countries also intend to expand their ties with Russia in order to mitigate a security imbalance if the United States withdraws from the region.

The one GCC country that will be unable to maintain a low profile is the UAE, which is also a non-permanent member of the UN Security Council. The UAE abstained to vote at the UN Security Council on the crisis.

Although the UAE's position did not affect the outcome of the UN Security Council's vote, its reluctance to take a clear position is likely to become both more apparent and difficult to maintain if the conflict escalates. The country is economically exposed through Dubai, which is a major financial and commercial hub for Russian businesses and would be expected to follow the sanctions protocols introduced by the United States and the EU.

Some GCC and North African countries will continue to maintain economic ties with Russia. Saudi Arabia and Russia are key members of the OPEC+ group. Others such as Algeria, Morocco, and Tunisia are reliant on wheat imports from both Russia and Ukraine and will maintain a neutral position in order to minimise the negative impact on their food security.

In the short term, energy exporters from the Gulf Cooperation Council (GCC) countries are poised to benefit economically from higher export revenues. At current and rising oil production levels, a price of US$ 100 / bbl will be a significant boost to their export revenues. GCC countries are also some of the largest exporters of LNG, aluminium and fertilisers, which have seen a surge in prices this year.

However, it remains to be seen how energy exporters in the GCC could cover a loss of Russian oil and / or gas output, and the extent to which they can act as a dependable supplier for Europe.

Qatar is exporting LNG close to its capacity. The country's current LNG export capacity is 106 BCM / year and is expected to increase to 185 BCM / year by 2027[lix], but the next major gain in capacity will only come by 2025-26. It will benefit from very strong LNG prices in the near-term, at least for its spot and gas-indexed sales (TTF, NBP and JKM). It will further gain from boosting market share at the expense of Russia.

Saudi Arabia has been reluctant to break the OPEC+ agreement that has been in place since 2016. Currently, OPEC has a spare capacity of 3.5 Mbbl / d held mostly by Saudi Arabia and the UAE[lx].

So far, GCC-based NOCs have not gained in terms of market share, which they will do so if they increase production. There is a chance that Saudi Arabia could take advantage of the crisis, particularly if Russian energy exports are restricted by war damage, additional sanctions or voluntary boycotts.

GCC-based NOCs will also benefit from the higher prices and chance to gain market share. Saudi Aramco and ADNOC may get the policy and budget boost to increase their oil production capacity even beyond current expansion plans.

Saudi Arabia's current production capacity is 12 Mbbl / d and it plans to expand it to 13 Mbbl / d by 2027[lxi]. The UAE plans to increase its production capacity from the current ~4.2 Mbbl/d to 5 Mbbl / d in 2030[lxii].

Beyond the energy sector, Russia is one of the largest sources of visiting tourists to Middle Eastern destinations including the UAE and Turkey. Travel restrictions and the devaluation of the rouble, along with sanctions on Russian entities and individuals, could have an impact on parts of the region's real estate and hospitality sector. However, the conflict could also encourage some capital transfers and efforts by Russian entities to conceal assets in the GCC countries.

Regardless of how this conflict will unfold, the Russian invasion of Ukraine will have far-reaching and long-lasting implications on the geopolitics, the global energy sector, energy trade and security.

The Organisation for Economic Cooperation and Development (OECD) countries are likely to unite around their democratic values, at least in the short term. They will boost their defense expenditure and increase investments in renewable energy, alternative fuels, and their supply routes. Europe will aggressively enforce measures to end its politically risky dependence on Russia for energy.

Moreover, energy corporations, infrastructure developers, and financial institutions in the United States and the EU will no longer provide Russia with capital and technologies for oil and gas developments. Developments across Russia will be slowed, and some projects may be cancelled altogether. This may speed up the ongoing global energy transition. It will also create an opportunity for alternative suppliers of oil, pipeline gas and LNG to Europe.

The ongoing energy transition is likely to accelerate across Europe motivated by the need to enhance energy security. As European countries deliberate the cleanest future energy mix, in the medium-term, CO2 and GHG emissions will increase, as coal power capacities ramp up, in order to replace natural gas supplies for Europe.

Germany, Italy, and the United Kingdom will double-down on their efforts to boost their LNG re-gasification capacity in order to take in supplies from the United States and Qatar.

Until now, the EU has exempted Russian natural gas supplies from the sanctions list in order to avoid worsening the ongoing energy crisis. However, it remains to be seen if Russia would counter these sanctions by halting natural gas supplies to Europe. Alternatively, the EU may sanction natural gas supplies in future rounds.

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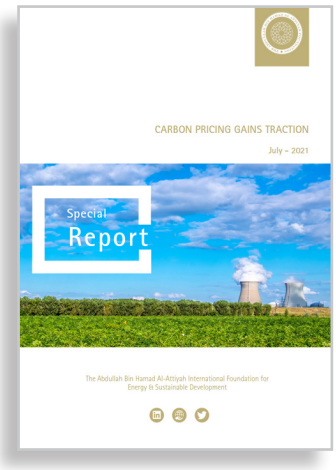


July – 2021

CARBON PRICING GAINS TRACTION

Around the world, climate change policies are tightening, and carbon pricing is playing a big part of that. Once carbon pricing systems are in place, countries can apply pressure to emitters at will – representing the stick part of any energy transition policy, alongside the carrot of possible subsidies and guarantees for cleaner options.

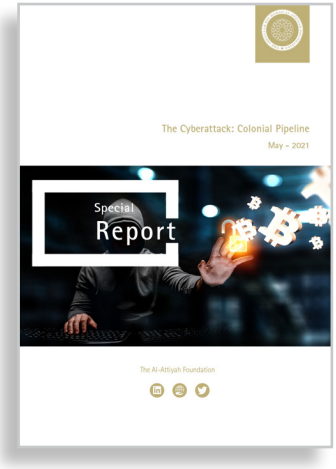
(QRCO.DE)

May – 2021

PEAK OIL? FORGET DEMAND PEAK,PEAK INVESTMENT DECIDING FUTURE?

Since 2020's COVID-19 global lockdown, an unexpected massive demand destruction of oil and gas, growing emphasis on a full global economic reset of global economies, as shown in EU's Green Deal, China's Net-Zero by 2060 or the current Biden energy transition approach, the term Peak Oil has re-emerged in discussions again.

(QRCO.DE)



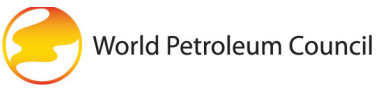
May – 2021

The Cyberattack: Colonial Pipeline

The Colonial Pipeline, the largest refined oil products system in the US, supplying 45% of east coast fuel, was shut down between 7-12th May by a cyberattack for ransom.

(QRCO.DE)

Our partners collaborate with The Al-Attiyah Foundation on various projects and research within the themes of energy and sustainable development.



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