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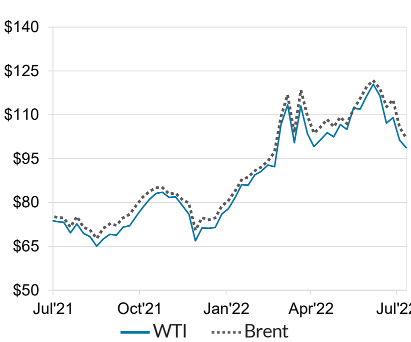
BRENT, WTI PRICES 2021-22 ($/bbl)

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## THE BIG PICTURE

# Saudi Arabia Wields Its Clout

- *Rising oil prices and the Ukraine crisis' broader energy shock have prompted Washington to reset relations with Saudi Arabia.*

- *US President Joe Biden's visit this week is meant to smooth the relationship, particularly with Saudi Crown Prince Mohammed bin Salman. Additional Saudi oil supply is expected to be limited.*

- *Behind the visit is a fundamental shift in energy dynamics, after a combination of upstream underinvestment, geopolitical pressures and demand growth restored and magnified producers' clout.*

When Biden took office 18 months ago, he faced a very different energy narrative. Oil supply was abundant, demand had been savaged by the Covid-19 pandemic and climate change was top of the policy agenda. Oil markets barely blinked when Opec capacity was taken out by drone and missile attacks, civil conflict or sanctions. The International Energy Agency's May 2021 report on a net-zero pathway cast doubt on the need for new oil developments, and UN climate talks in Glasgow in November largely sidelined the oil industry. Biden felt able to focus on climate and snub the Saudi crown prince over human rights concerns.

The last nine months have seen a dramatic revision of that dynamic, culminating in Biden's humbling visit to the country he described as a "pariah" on the campaign trail in 2020. Simply put, with today's tight oil market — and its political liabilities for Biden — Washington can no longer afford to be on bad terms with the Saudis. A bumpier energy transition has amplified oil's role near term and spurred a reckoning in Washington that an arm's-length relationship with Saudi Arabia does not best serve US national interests. "A more secure and integrated Middle East benefits Americans in many ways," the US president wrote in the *Washington Post* this week. "Its energy resources are vital for mitigating the impact on global supplies of Russia's war in Ukraine."

Riyadh has been treading a fine line as it balanced this rapprochement with its relationship with Opec-plus partner Russia. It wants and needs relationships with both, for different reasons. Right now, it appears to be reeling the US back in — for security reasons, including over Iran, and for the wider objective of putting the kingdom's "pariah" status firmly in the past. Oil's rebound from back- to front-foot gave it the tools to do this.

In essence, four factors contributed to this turnaround:

- **Rapid oil demand growth as economies bounced back from lockdowns:** China's economy surged by 12.7% in the first half of 2021 and faced power shortages in the second half. Indian oil demand is recovering. Globally, oil demand grew by 6.1% in 2021 and should add another 2% this year, albeit less than previously expected. In

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the US, prices at the pump surged past $4 in March 2022 to reach $5 in June. Demand-side disruptors in the low-carbon transition, such as electric vehicle sales, are only starting to take off, and have had little impact on this rebound.

• **Underinvestment in upstream capacity:** Underinvestment — which started in the 2014-16 oil price crash and was sustained by the Covid-19 pandemic and corporate shift to low-carbon strategies — dampened supply growth and left producers with narrowing wedges of spare capacity. Opec-plus also unwound its mega-production cut pact very gradually, erring on the side of keeping markets tight. US shale producers have focused on paying down debt and bolstering returns. Iran's barrels, meanwhile, remain largely out of reach, after the US and Iran failed to revive the nuclear deal. Faced with this combination of strong demand and supply pressures, market sentiment shifted over the last year from abundance to scarcity.

• **Producers regrouped and fought back:** The sidelining of oil was shocking for all producers — but for some, like Saudi Arabia, it also challenged their strategic value, making it an existential issue. Around the time of the Glasgow climate conference, producers started pushing back with a common line that the transition was proceeding too quickly and ignoring the continued importance of oil and gas. This year's tight oil market provided weight and leverage for their argument.

• **The Ukraine war added severe disruption:** Russia's invasion of Ukraine and the West's subsequent sanctions only added to supply pressures, sharpened the West's reliance on Mideast Gulf supplies, and enhanced the importance of Saudi Arabia and fellow Gulf producers in supplying global markets. A US strategic aspiration of degrading Russia's status as a global energy powerhouse added further weight.

Saudi Arabia has fairly limited spare oil capacity to offer Biden, and both sides recognize that depleting this fully could inflame, rather than calm, oil markets. But some incremental supply and more positive messaging on both sides should help. "We've already seen Opec take a meaningful step with respect to increasing oil production in the months of July and August," National Security Adviser Jake Sullivan said Monday, referring to Opec-plus' decision to accelerate the unwinding of its cuts. The administration believes "there is a capacity for further steps" on energy security, he added.

Stronger US security commitments to the region, possibly via Israel, could also be in the cards. Ahead of Biden's trip, which started in Israel Wednesday, there was talk of a push to coordinate regional air defense systems among Israel and Gulf states — as "effective coverage to deal with Iran," in the words of US National Security Council spokesman John Kirby. Gulf holdouts are thought to include Qatar and Oman. The Middle East Institute's Karen Young on Monday said she thought the trip would "end up building, basically, a counter-Iran war council, heavily influenced by Israeli strategy."

## Where Next?

The trajectory for oil remains uncertain. Unknowns abound about the impact of high prices and the specter of a recession, but consumer shifts and transition policies — even if accelerated — will likely take years to make a major dent in demand. In the meantime, upstream investment will come from a limited shortlist of select US shale patches, Opec producers and advantaged international oil company projects.

But with the current scale of distortions and adjustments, the next few years are shaping up as a period of magnified producer influence — in which Saudi Arabia and other key producers hold some pretty big cards. They will use that clout to protect their interests on security, strategic relationships, the transition's pace and more. This period could open the door to a more stable US-Gulf relationship and more balanced dialogue between producers and consumers. Or it could see overreach and backlash — over the primacy of fossil fuels or over actions, military or other, to rein in Iran's nuclear capacity absent a deal.

*Jill Junnola, London*

POLICY

# Questions Swirl Around Russian Price Cap Bid

• *Officials in the US, EU and elsewhere are trying to formulate a new kind of energy sanction that caps the price of Russian oil in a bid to keep markets supplied while denying Moscow revenues.*

• *Major questions surround whether a price cap — which would seek to compel buyers to pay below market value for Russian oil in order to access insurance — would be workable or enforceable, and whether major buyers China or India would join the scheme.*

• *The initiative could also backfire — spiking crude prices while keeping revenues flowing to Moscow.*

## The Issue

Western and G7 policymakers are bumping up against the limits of what traditional sanctions levied at an oil-producing country can do without harming the broader economy. The US, Canada, EU and UK have varying Russian oil bans in place or being phased in. But forcing substantial volumes of Russian oil off the world market would push already-uncomfortable prices even higher. That's prompted policymakers in the G7 to search for something they can live with for the longer term: A cap on the price, reportedly at $40-$60 per barrel, Russia receives for its oil. But the complexities of deciding, implementing and enforcing such a policy are myriad.

## Insurance Focus

At the basic level, policymakers are focused on blocking insurers within their country from underwriting cargoes containing Russian crude and refined products priced above the cap. The specifics are up to each jurisdiction. In the EU, a ban on insurance for any cargoes carrying Russian oil is supposed to come into effect at the end of the year, with implications for buyers outside the EU that use its insurance companies. The idea, which US officials advocate, is to make an exception for cargoes with oil coming under the cap.

That could be thorny in the EU, as doing so could require reopening the hard-fought sixth round of sanctions. US Treasury Secretary Janet Yellen visited Japan this week, and will also visit South Korea, during travel to the G20 summit in Indonesia, partly to push the price cap policy forward.

But Washington is for now leaving its biggest hammer to the side. Treasury Department officials last week said they are not considering using secondary sanctions — in which the US denies access to its banking system to companies outside the US for violating prohibitions — to impose the price cap. Those have been a point of tension in the relationship between the US and its allies during past sanctions programs, including the one on Iran, and Washington seems focused on bolstering the trans-Atlantic relationship. "The EU will be very, very reluctant to agree secondary sanctions," said David O'Sullivan, a former EU ambassador to the US now at law firm Steptoe and Johnson.

## Complex Enforcement

If the aim of the price cap is relatively straightforward, implementation looks fiendishly complex. First, there's how the price is determined. Japanese Prime Minister Fumio Kishida last week said G7 officials are targeting roughly half of current prices, and other reports put a cap at $40-$60. But the mechanics of the cap would affect transactions, with two trading sources saying it would make more sense as a discount to a benchmark price, such as Brent, rather than a dollar figure.

Then there is the question of financing and hedging cargoes. The price generally determines how cargoes are financed and ambiguity over the price could cause uncertainty for buyers as they seek financing, sources said. It's also unclear how traders would hedge if prices are capped, said Albert Helmig, CEO of consultancy Grey House.

"It's riddled with so many practical issues that it is next to impossible to implement," one New York-based trader said. Western officials are also targeting products with the price cap. This could introduce even more complexity given the lack of benchmarks for products, lower visibility on pricing, pricing variation according to region and product, and a wide range of products.

## Wider Take-Up in Doubt, Retaliation a Worry

Without secondary sanctions, it's unclear what would motivate India and China — which currently take around a combined 3 million barrels per day of Russian crude, with India's massive uptick spurred by discounts — to fall in line with the price cap. "Many people who looked at this had kind of hoped it would be self-executing with respect to India and China, because if the only other buyers on the market were offering $50 [per barrel], maybe you'd pay $55, but why you would pay $75," said David Goldwyn, a former top energy diplomat who now runs his own consultancy.

In June, Indian imports of discounted Russian barrels reached nearly 1 million b/d, compared to an average of 50,000 b/d in 2021, and Indian refinery sources say they would love a price cap, in theory. But they fear price caps would lead Russia to curtail production, causing global prices to spike and cutting off a source of cheap supply. Buyers deciding to avoid compliance headaches by not touching Russian oil could have the same effect.

Russian officials have been threatening just that: Last week, the deputy chair of Russia's Security Council, Dimitry Medvedev, said a price cap would lead to "significantly less oil on the market." Moscow may also have other levers it can pull.

Indian refinery sources also fear that in a scramble for barrels they'll lose out to China, which can access Russian supply via pipeline. Instead, India is gearing up for continued oil supplies from Russia, including by allowing importers and exporters to settle trade in Indian rupees.

China is very unlikely to voluntarily join a price cap scheme, given the commitment to maintaining political and economic ties with Russia, and the access to relatively cheap oil — with oil and gas, according to JP Morgan, spurring a second-quarter surge in Chinese imports from Russia. Still, unprecedented Western sanctions against Russia, and US threats of secondary sanctions in relation to exports of sensitive goods to Russia, appear to have influenced Beijing. China's exports to Russia contracted 61.7% in the second quarter from the first quarter, according to JP Morgan's seasonally adjusted calculations of the latest Chinese customs data.

Further, arranging shipments and insurance of crude from Russia, with China effectively its biggest ally, should be no problem. Some 800,000 b/d of Russian crude also flows to China via pipeline through government-to-government deals, and these volumes are unlikely to fall under threat.

*Staff Reports*

GEOPOLITICS

# Russia Set to Keep Europe Under Supply Pressure on Gas

*The planned annual shutdown of Gazprom's Nord Stream gas pipeline from Russia to Germany from Jul. 11-21 promises to keep Europe guessing whether Moscow will restore supply volumes afterward. Fears of a cutoff stem from the sharp drop in Nord Stream flows to 40% of technical capacity in mid-June, which Gazprom said was down to a Siemens turbine stuck in Canada due to Ottawa's sanctions against Moscow. Many observers, however, saw political motives behind the tactic of restricted supply. Canada has now issued a "time-limited and revocable" waiver, which, post-maintenance, should result in at least partial increase in flows over those premaintenance levels — unless Moscow opts to keep more pressure on the European market.*

**• Gazprom declining to use the Ukraine route to help cover Europe's high demand while Nord Stream is shut for maintenance suggests it might stick to the tactic of restricted supply.**

The Russian exporter did not increase gas flows via Ukraine — the key alternative route — in the first days of the Nord Stream shutdown. That means Europe is now short the average 68 million cubic meters gas per day it was receiving from Russia via Nord Stream before the shutdown. Gas flows have increased modestly along the Turk Stream pipeline's stretch to Europe, but those volumes don't reach most markets supplied by Nord Stream. The Yamal-Europe pipeline cannot be used by Gazprom due to Russia's blocking sanctions against the owner of the Polish section of the pipeline.

And although not ruled out by the EU completely, a complete halt of Nord Stream flows beyond Jul. 21 doesn't look the most likely scenario after Canada on Jul. 10 signed off on Siemens Energy returning the Nord Stream turbine to Germany. From there, the turbine should be transported to the Portovaya compressor station in Russia, presumably restarting operations in a couple of weeks. Kremlin Spokesman Dmitry Peskov last week reiterated that the return of the turbine could help increase flows via Nord Stream — and again denied accusations that Moscow was weaponizing its gas exports.

But full restoration of Nord Stream throughput to 170 MMcm/d is unlikely because Gazprom said it switched off similar turbines at Portovaya that also require an overhaul. Canada's waiver reportedly allows Siemens Energy to repair five more turbines in Montreal until end-2024, and Gazprom might use the pending repairs as an excuse for underutilized Nord Stream capacity. Experts, however, say Gazprom would not normally reduce Nord Stream flows significantly during the repair of one or two turbines.

Gazprom, for one, isn't giving anything away. It said on Jul. 13 that it has not seen any document that would allow Siemens Energy to take the repaired turbine out of Canada — and that it is impossible to say how the situation will develop further.

**• Canada's waiver has demonstrated that gas supplies remain an important piece of political leverage for Moscow as the war in Ukraine drags on.**

Canada's waiver after Germany's request for the turbine marks a win for Moscow. It opens up a crack in the West's sanctions regime and has shown Moscow that cutting gas flows can bring results. Moscow can be expected to do the same again in response to actions or policies by the West that it does not like, including a proposed price cap on Russian oil and gas (p2).

More broadly, by keeping Europe under supply pressure, Moscow might want to increase social discontent there — in order to weaken the West's military support for Ukraine, especially at a time when US Himars artillery rocket systems are starting to cause problems for the Russian army, as well as create further division on sanctions.

Alternating turning the taps up and down also disrupts EU efforts to meet gas storage targets ahead of winter. The less gas EU member states have in storage ahead of the winder, the less likely they are to agree on and enforce bolder measures against Russia. Despite seeking to gradually phase out Russian gas imports by 2027, the EU has excluded gas supplies from sanctions.

**• Russia also has an interest in maintaining some gas flows via Nord Stream in order to support the budget, keep gas supply to central Russia competitive, and avoid relying too heavily on the Ukraine route.**

Continued gas flows, even in limited amounts, are an important source of revenue amid record high prices, and Gazprom is increasingly becoming a cash cow for a Russian budget hit by wider financial sanctions. Last month, the government, which controls 50.23% in Gazprom directly and indirectly, decided that Gazprom will not pay dividends to shareholders for 2021, despite the board in May recommending a record payout of 1.2 trillion rubles ($21.3 billion). The monies will instead flow to the Russian budget in the form of an increased mineral extraction tax, to be hiked exclusively for Gazprom in September-November.

A complete export halt to Europe would also require Gazprom to make further cuts to natural gas production, after having already slashed it by 31% year on year to 27 Bcm in June, for lack of alternative markets. Production in the first half of 2022 fell 9% to 238.4 Bcm. No flows to Europe would also mean lower flows within the central part of Russia, which would potentially mean higher gas transportation costs and lower margins from Gazprom's regulated domestic gas tariffs. A full Nord Stream shutdown would also leave Ukraine as Gazprom's only transit route to northwestern Europe, which poses its own set of risks, including war damage or intentional capacity restrictions by Ukraine.

*Staff Reports*

GEOPOLITICS

# No Winners in Russia-Japan Standoff

*The deterioration of Russia-Japan relations started long before Moscow's invasion in Ukraine. Prime Minister Fumio Kishida has taken a less-than-conciliatory approach to Russia since taking office in October 2021. Tensions spiraled after Japan joined the US and EU in imposing tough sanctions against Russia after its invasion of Ukraine. In response, Moscow has withdrawn from peace treaty negotiations with Tokyo, and Japan could lose stakes in major energy projects offshore Sakhalin. This threatens Japan's energy security — and stability in the wider region.*

**• Japan will have to restructure its supply patterns, and possibly push to revive nuclear power.**

Since the Ukraine war broke out, Japan has pledged to phase out imports of Russian oil and coal, albeit without providing a deadline. But it has stated that it remains committed to Russian LNG and wants to retain its energy investments in Russia due to energy security needs — along with concerns that its exit would leave a void for opportunistic and gas-hungry Chinese companies to fill. Russia's recent decision to transfer operatorship of the Sakhalin-2 LNG and upstream venture — in which Japanese trading firms hold stakes — to a Russian-registered company heightens risks of supply disruptions for the world's second-largest LNG market, which is already grappling with an imminent power crunch in winter.

Russian LNG accounts for 9% of Japan's total imports, and reached 3.5 million tons in the first six months of this year, almost the same as a year ago. Japan has continued to lift LNG term cargoes from Sakhalin-2 — around 5 million tons/yr in long-term commitments through the early 2030s — but shunned Russian cargoes in the spot market. Imports of Russian crude have been falling since the war, and plunged to 21,000 barrels per day in May. Russian crude imports typically hover above 100,000 b/d, or just 3% of Japan's imports.

Japanese trading houses Mitsui and Mitsubishi have 12.5% and 10% stakes, respectively, in the 9.6 million ton per year Sakhalin-2 LNG project. Under Moscow's Jun. 30 decree, they could apply to retain the stakes in a new operating company. Judging by the tough statements from officials in Moscow antagonized by Japan's strong anti-Russian stance, however, they would likely be rejected. And if Japan did seek stakes in the new Sakhalin-2 operator, it could face strong criticism from fellow G7 members, while leaving Tokyo open to further manipulation by Moscow in the future.

Sakhalin-2's new operator is to take over all supply contract commitments, meaning Japan will keep receiving LNG unless Russia introduces blocking sanctions against the Japanese companies. Notably, Kishida's reference last week to world powers working on a price cap for Russian oil exports prompted former Russian President Dmitry Medvedev, now deputy chairman of the country's Security Council, to warn that Japan would "have no oil or gas from Russia and will lose participation in the Sakhalin-2 LNG project" if the price cap is introduced.

Chances are also high that Moscow could seize operatorship of Exxon Mobil's mainly oil-focused Sakhalin-1 project, in which the Japanese government and Japanese companies own a combined 30% stake. Mitsui and government-controlled Jogmec also own a combined 10% stake in Novatek's Arctic LNG-2 project, still under construction in Arctic Russia.

Tokyo is already asking Japanese utilities to seek alternative LNG supplies and devising mechanisms for city-gas users to reduce gas consumption during winter. To bring new LNG supplies on line, Japanese firms are now expected to invest in new LNG projects with government support, especially schemes in the US. And Kishida and his Liberal Democratic Party (LDP), which has always been pro-nuclear, could now push harder for its revival. "With energy prices high and LNG supplies from Russia at risk, the government will make the argument that there is no alternative to more nuclear restarts," says James Brown at Temple University in Japan. Only 10 reactors have restarted out of 54 in operation pre-2011, of which five are operating now.

**• Japan's anti-Russia stance has an eye on possible future conflict in Asia and Japan's need for Western support.**

Former Prime Minister Shinzo Abe, who was assassinated by a gunman last week, had forged a personal relationship with Russian President Vladimir Putin in the hope of settling a territorial dispute over the Kuril Islands that has blocked a peace treaty between the two countries since the end of World War II. Kishida's mandate to continue Japan's tough position on Russia has been sealed by the LDP's victory in parliamentary elections last week. The party's "strong electoral performance will be taken as an endorsement for their existing policies ... Consequently, I don't foresee Japan easing up on sanctions," Brown said.

Japan is worried that China could do in East Asia what Russia has done in Europe. "Japan's response is to impose costs on any country seeking to change the status quo by force, as well as to build up Japan's own defensive capabilities," including by strengthening ties with like-minded states like India and Australia, Brown said. Kishida notably participated in last month's Nato summit. Tokyo's actions indeed risk antagonizing China. Just one day after Kishida's strong election win, Beijing warned the Japanese government against amending its 1947 pacifist constitution, which it said would lead to Japan's remilitarization. Constitutional changes are among Kishida's priorities.

**• Russia could lose from a full divorce with Japan, given strong trade ties between its Far East and Japan.**

By the end of Abe's premiership, it was clear that the Kuril Islands dispute and the peace treaty wouldn't be agreed. Tokyo insisted on the islands' decision before the peace treaty signing; Moscow wanted a peace treaty first. Prospects dimmed further following 2020 constitutional amendments in Russia that forbid the disposal of any territories of the country. In March this year, Moscow withdrew from the peace treaty negotiations altogether, citing Japan's "unfriendly unilateral limitations" against Russia. Although negotiations over the Kuril Islands were more of a ritual for Moscow, they created a positive background for bilateral cooperation in all areas, according to experts.

Regular meetings between the two countries' foreign and defense ministers have helped guarantee a status quo in the region, but tensions are now rising, with Japan also expected to expand military cooperation with the US. Russian Security Council Secretary Nikolai Patrushev said this month that Tokyo is "activating its revanchist aspirations over the Kuril Islands." While that looks unlikely, conflicts over fishing rights are possible — although China's military might likely serves as a deterrent to any escalatory steps by parties in the region.

*Clara Tan, Singapore, and Staff Reports*

POLICY

# Oman's New Energy Era Sees Hydrogen in Starring Role

- *The oil price recovery came in the nick of time for Oman and its new sultan: Government coffers are replenishing, oil and gas output are up.*

- *The retirement last month of veteran Omani Energy Minister Mohammed al-Rumhy after 25 years in the post also marks a new era.*

- *Under Rumhy, Oman pioneered unconventional oil and gas development in the Mideast Gulf; now it is spearheading hydrogen development, electricity trading and LNG bunkering.*

Both Sultan Haitham bin Tariq al-Said, who took the throne in January 2020, and new Energy Minister Salim al-Aufi came to their jobs with long years of experience in governance and oil ministry management, respectively. They represent continuity. But both are having to navigate much harsher environments than their predecessors, and gentle evolution is not an option for either. A series of nationwide anti-austerity protests last May is a warning that Oman's famed stability should not be taken for granted.

For the sultan, the oil price bounce has given a vital breathing space. After sliding in 2020, real GDP grew 3% last year and is expected to grow by a further 4.5% this year, an International Monetary Fund report noted last month. "Central government debt is expected to decline substantially from about 63% of GDP in 2021 to 45% of GDP in 2022," it added.

However, the oil price tonic masks structural weaknesses. Fundamental reform is needed to make Oman's economy fit for purpose in terms of diversification, competitiveness, privatization, the easing out of subsidies, and labor reform. And energy sector development is central to this wider restructuring of the economy.

Politically, Oman remains a poor, small country in a fairly rough neighborhood. Muscat's main priority is to keep its independence. Oman has welcomed Gulf investment. But it is noteworthy that discussions for a Saudi export pipeline, which would have exponentially boosted Riyadh's heft in the country, have come to nothing. Oman remains an important mediator in regional conflicts. Iran's role might not be as prominent as under its former ruler, Sultan Qaboos, but Muscat has made itself indispensable of late as a mediator in Yemen talks.

## Oil and Gas Stay Steady

Old-fashioned oil and gas will remain central to Oman's economy for a long time to come. Its unconventional oil drive has probably run its course, but it has nevertheless enabled Oman to boost crude capacity from lows of 715,000 barrels per day in 2007 to over 900,000 b/d now. Today, production remains on target with monthly quota increases, a rare feat among its Opec-plus peers.

Continued oil investment should enable Oman to avoid any precipitous drop in capacity for some time. But big gains are not expected, with the 21,900 b/d Yibal Khuff development that came on line in December the last of the big oil projects in the pipeline.

Gas, on the other hand, continues to show promise, with the 500 million cubic feet per day Block 10 Shell-TotalEnergies development due on stream in 2024. Output has surged, hitting 41.8 billion cubic meters last year, a 44% jump on levels a decade ago — spearheaded by the 1.5 billion cubic feet per day BP-led Khazzan tight gas development. In addition to expanded domestic use, and LNG exports, Muscat is a joint venture with Total for a regional hub for LNG bunkering.

Muscat is also planning to create a new national gas champion to manage the state's gas interests, according to one official. Along the lines of the recently created Energy Development Oman, the new firm would manage the "whole gas chain," including "investment, production and also allocation, usage and prioritization of gas," he said.

## Green Push

The war in Ukraine has not just boosted hydrocarbon prices, but has also intensified interest in hydrogen, specifically green hydrogen, where in Europe there has been "a huge uptick in interest because it is the only way to square the circle," notes consultant Robin Mills. "Europe's short of energy, with Russia out. They can buy gas but long term that is not acceptable. So, what do we do? We say hydrogen," he says, noting sky-high gas prices have radically improved the relative economics for hydrogen.

Even before Russia's invasion of Ukraine, Oman had been pushing its hydrogen credentials, predicting back in November investment of $34 billion in the sector to 2040 and the creation of up to 147,000 green jobs. Natural conditions for green hydrogen in Oman are "very, very good" with ample cheap coastal land, an advantaged location slightly nearer markets than its Gulf peers and excellent wind as well as solar resources, argues Mills.

A rash of memorandums of understanding have been signed, but more work needs to be done to put the necessary regulatory framework in place, the official notes. "First we have to have the policies, laws and locations ready. Without this, it will be difficult to approve and develop projects," he says.

Initial Omani hydrogen discussions are largely based around the emerging Indian Ocean energy hub of Duqm, the site of a 230,000 b/d refinery to be commissioned around end-2023 or the beginning of 2024. Four projects appear to stand out. The first is Duqm Hyport, bringing together state energy firm OQ and Belgium's Deme Concessions, envisaging first-phase electrolyzer capacity of 250-500 megawatts. Critically, this has an offtaker in the shape of Germany's Uniper, hit badly by its heavy exposure to Russia and in line for a state bailout. But, argues Mills, "given Europe's [energy] problems, you would have thought that if it were not Uniper, then some German company would come in on that [deal]."

Indian solar developer Acme has been active and is involved in two hydrogen projects: A joint venture with Norway's Scatec for a 300 MW-500 MW project in Duqm, and the second a tie-up with OQ and US firm Air Products for a potential 1 million ton per year world-scale plant in the southern province of Dhofar. Lastly, in January, Muscat signed a strategic agreement with BP for a joint green hydrogen development.

Oman is also pioneering electricity reform in the Gulf, launching at the beginning of the year the region's first spot market for electricity. With a lot of Oman's power plants coming to the end of their contractual lives, a functional spot market should drive efficiencies and lower costs. "If it works well, it will be very good. It will be an example for others. If it doesn't work, it will scare everyone off," notes Mills.

*Rafiq Latta, Nicosia*

CLOSING ARGUMENTS

# Sri Lanka's Chaos, Global Food Crisis

## Sri Lanka: Debt-Driven Chaos

The international community is clearly struggling to deal with the aftermath of Sri Lanka's dramatic socioeconomic and political meltdown. More worrying, Sri Lanka is likely the tip of the iceberg. The perfect storm of crippling debt, government mismanagement, and geopolitically driven critical shortages in energy and food has the potential of repeating itself in other nations around the world. In some instances, the consequences of societal collapse could be even more dire, given that the most likely candidate for a Sri Lankan-like collapse, Pakistan, has nuclear weapons whose security could be endangered.

The Sri Lankan debt crisis has been a long time coming, exacerbated by expensive infrastructure programs, such as the Chinese-led effort to develop the port facilities in Hambantota and Colombo, which account for approximately 10% of that nation's foreign debt. This accumulation of debt coincided with a pair of risky policies by the Sri Lankan government — a massive tax cut designed to make Sri Lanka attractive to further investment, including tourism, and a controversial campaign pushing organic farming over more traditional methods involving the large-scale use of fertilizers. When the Covid-19 pandemic shut down the global economy, Sri Lanka was hit hard by the drop in revenue from tourism, and simultaneously confronted with widespread hunger brought on by the failure of the organic farming campaign to meet food needs. Efforts to negotiate an economic bailout package with the International Monetary Fund were undermined when the current global energy and food crises arising from Russia's war in Ukraine pushed Sri Lanka over the edge.

Pakistan is among the nations whose socioeconomic situation mirrors that of Sri Lanka. Social tensions in this nuclear-armed nation are already at a critical level due to the ongoing political drama generated by the ouster of former Prime Minister Imran Khan following a controversial vote of no confidence. Pakistan's crippling debt servicing obligation is hampered by government corruption and mismanagement, compounded by high energy costs and food shortages.

International efforts to address Pakistani debt payments may prove to be too little, too late. The internal political and economic stability required for Pakistan to attract foreign investors and reform its economy cannot gain traction in the face of its ongoing political chaos. The global ramifications of a Sri Lankan-like collapse in Pakistan are furthered by the issue of the security of its nuclear weapons arsenal, which could be thrown into question should unrest on a Sri Lankan scale sweep through the country.

## The Global Food Crisis: Bad, and Getting Worse

UN Secretary-General Antonio Guterres last month warned that the world was facing what he called "an unprecedented global hunger crisis." According to Guterres, the disruption to global food supplies brought on by the ongoing Ukraine war has only compounded food supply problems that had been percolating for years. According to the World Food Program, the number of people at severe risk of famine has doubled, to some 276 million, since the pandemic — with food access issues exacerbated by global supply chain disorder. But the disruption to global energy and fertilizer markets brought on by the Ukraine conflict could turn what is a food distribution crisis into a food shortage disaster by next year unless measures are taken to rectify the situation. As Guterres warned, "No country will be immune to the social and economic repercussions of such a catastrophe."

Global food prices, which had been steadily rising for the past two decades, ran away in 2021 due to the consequences of the Covid-19 pandemic, which saw agriculture production hit by the severe lockdowns imposed around the world that disrupted migrant labor flows. The resulting food shortage was exacerbated by the breakdown of global supply chains. The one bright side of this food distribution crisis was the continued availability of fertilizer, which enabled farmers to grow crops despite difficulties integrating them into the global food supply chain.

Rising energy prices amid Russia's war in Ukraine has severely hampered the ability of the world to revive the global food supply network. As food prices continue to spiral out of control, millions of vulnerable people dependent upon UN programs such as the World Food Program have been impacted, with the program compelled to cut rations of therapeutic food by 50%, placing millions of children at risk of starvation.

While the disruption of critical supplies of grain produced by Ukraine and Russia has exacerbated the existing food crisis, it is the disruption of fertilizer supplies from these two nations that threatens disaster. The noted American journalist Alfred Henry Lewis wrote in 1906 that "There are only nine meals between mankind and anarchy." This theorem is about to be put to the test: Unless the Russian and Ukrainian fertilizer can be brought to market, the world will find itself in a food shortage crisis in 2023 for which there may be no solution, only starvation.