

THE QAMAR NEWSLETTER

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Qamar Energy, headquartered in Dubai, is the leading regionally based energy consultancy on the Middle East and North Africa (MENA).

The QAMAR NEWSLETTER is a monthly publication that provides critical appraisal and focussed assessments of the month's energy developments across the MENA region.



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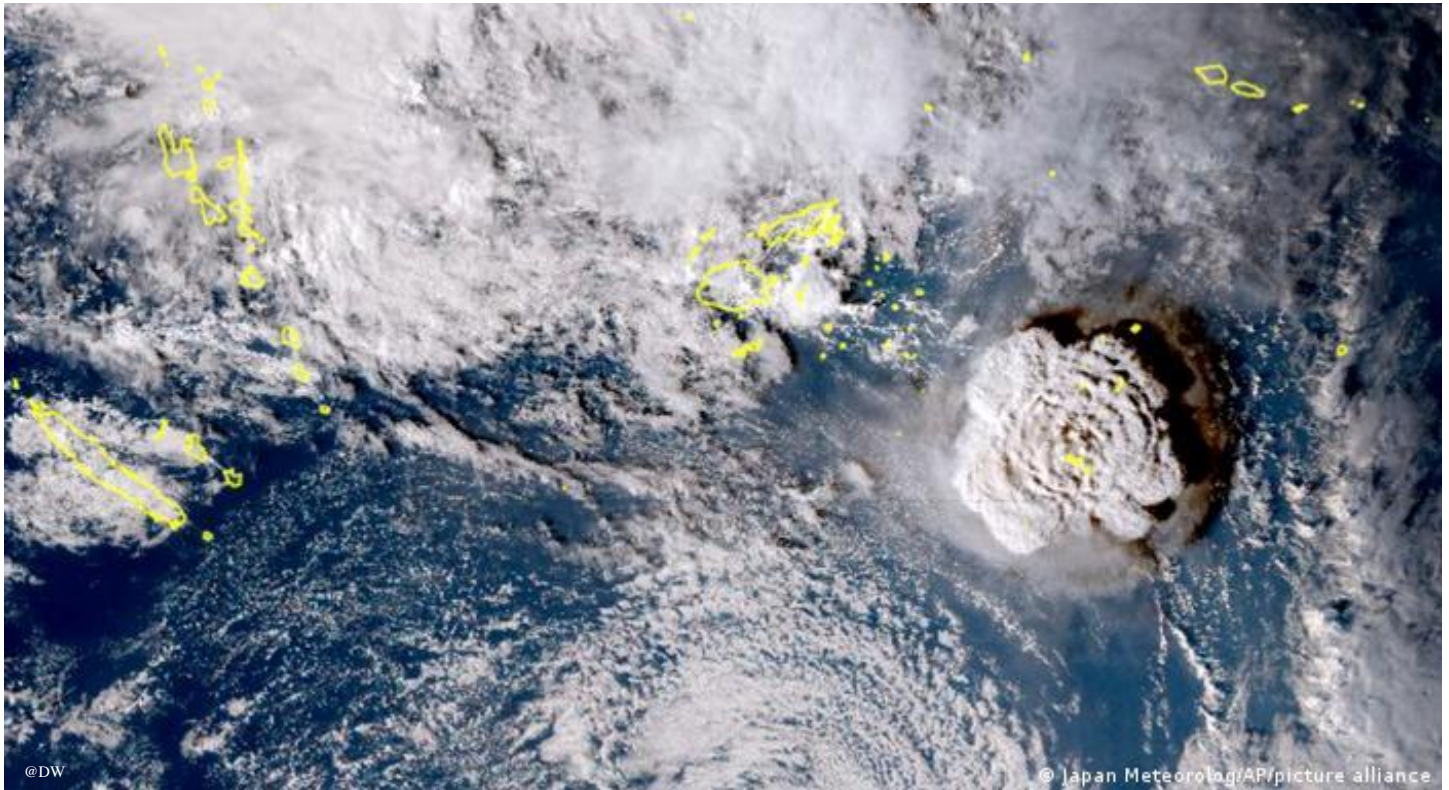


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TONGA'S VOLCANIC ERUPTION IS REMINDER THE WORLD CANNOT WAVER FROM REDUCING EMISSIONS

Robin Mills • A version of this article appeared in *The National*, Jan. 17 '22 • COVER STORY



Saturday's enormous eruption of the Hunga Tonga Hunga Ha'apai underwater volcano sent ash 20 kilometres into the stratosphere, accompanied by a 900-kilometre-per-hour sonic boom heard as far away as Alaska and tsunami waves racing around the Pacific. The blast may be devastating for the people of Tonga and neighbouring areas. The climatic effects of volcanoes are a reminder of Earth's awesome power but also humanity's responsibility.

The Tonga volcanoes are sited where the old, cold Pacific geologic plate sinks into the Earth's mantle beneath the warmer, lighter Australian plate at the Kermadec Trench. When the plate reaches a depth of 100 kilometres or so, its water-rich rocks melt, and the ascending magma creates a volcanic chain. The "Pacific Ring of Fire" reflects this phenomenon, from New Zealand through the Philippines and Japan to Mexico and the Andes.

Volcanoes have a profound impact on short-run climate. They inject ash and, particularly, sulphur dioxide into the upper atmosphere, reflecting the sun's rays and causing cooling. Halogen compounds may trigger ozone depletion, damaging to human health. Bigger eruptions do not necessarily have the largest effect on climate: it depends on their geographic location, and content of sulphur and other volatile materials.

The super-volcano eruption of Mount Toba in Indonesia about 74,000 years ago may have caused the human population on Earth to dwindle to a few thousand individuals, though this is disputed. Volcanic particles might also have triggered the cold, wet weather of the mid-fourteenth and early-seventeenth centuries, which were followed by famine, plague and war.

The famous Tambora volcano in Indonesia in 1815 created "the year without a summer", whose gloomy weather inspired Mary Shelley's classic *Frankenstein*. A slightly earlier mystery eruption of 1808, possibly a submarine volcano in Tonga, also contributed to this cold period, a time that saw Napoleon's defeats in the Russian winter and at Waterloo and the collapse of his empire. More recently, the 1982 El Chichon eruption in Mexico and Mount Pinatubo in the Philippines in 1991 cooled Earth by appreciable fractions of a 1°C.

Despite the usual bad-faith commentary, such events do not discredit the knowledge that human emissions of carbon dioxide and other greenhouse gases are driving relentless and dangerous global warming. Volcanic cooling is no more than blips on this trajectory. And volcanic carbon dioxide contributes less than 1 per cent of human emissions yearly.

It is too early to say whether the cataclysm in Tonga will have a wider effect on global climate for a year or two. But it is a reminder that the injection of sulphur dioxide or similar particles into the stratosphere is highly effective in blocking the sun's rays.

This is the basis for "geoengineering" proposals to offset global warming by artificially carrying reflective particles aloft with aeroplanes or balloons. The material need not be sulphur dioxide; chalk or other stuff could work too.

Compared to the trillions of dollars to retool the global energy economy, geoengineering could be remarkably cheap, as little as \$2-2.5 billion annually to cut temperature rises by 1.5°C, the ambition of 2015's Paris Agreement on climate change.

Geo-engineering, specifically “solar radiation management” (SRM), has often been portrayed as a “last resort”, to be deployed if we perhaps heat the Earth beyond a catastrophic tipping point. Critics have seen it as a dangerous distraction from the essential goal of reducing greenhouse gas emissions. They fear it will be used as a “get out of jail free card” by fossil-fuel interests. A single wealthy country or even mega-rich individual could introduce such a system on their own, over others’ objections.

It does not cut atmospheric carbon dioxide and its negative side effects such as acidification of the oceans. If halted, warming would resume within a year or so at an accelerated pace. And it could result in shifts in precipitation, leaving some areas inundated and others drought-stricken.

Emotions are so strong that campaigners have opposed even the tiniest of experiments, balloons carrying a few kilograms of particles. The scepticism of environmentalists is understandable given the long history of delays, obfuscation and excuses by those seeking a licence to continue polluting.

Similar arguments were made against the idea of adapting to climate change in the 1990s, and against removing carbon dioxide directly from the atmosphere in the 2000s. Now, climate adaptation is accepted as a sad necessity, and an integral part of the Paris Agreement. Carbon dioxide removal on a gargantuan scale by 2050 is the only way that climate models can still hold out any hope of reaching the Paris targets.

Logically, if 1.5°C of warming is still bad, then 1°C would be better. Vulnerable ecosystems, species and human settlements could be saved. So even if we can reduce emissions rapidly, we can offset some of the dangerous possibilities of feedback loops and unexpected consequences by carrying out SRM. That also buys us time to scale up direct removal of atmospheric carbon dioxide.

This is not an argument for rushing into SRM today. But it does encourage learning more urgently. Studying the effects of large volcanoes is useful, but no substitute for well-planned, controlled experiments.

At this moment, we should think first of the people of Tonga, suffering the perhaps catastrophic effects of such an eruption. Climate change will bring disaster, of different types, to a much wider area. Learning from the climatic impact of volcanoes is essential to offsetting some of the consequences of humanity’s own folly.

KAZAKHSTAN CRISIS BRINGS ASIA’S ENERGY DYNAMICS INTO FOCUS

Robin Mills • *A version of this article appeared in The National, Jan. 10, '22*

Economic discontent and years of crony capitalism in Kazakhstan have turned into mass protests posing a major challenge to its government. With dozens killed by security forces, President Kassym-Jomart Tokayev, only appointed in March 2019, has vowed a harsh crack-down and called in Russian-led security.

The unrest was not inspired by Russia's President Vladimir Putin or by any outside force, despite the usual propaganda. Neither Moscow nor even Astana seems to have anticipated it. But the Kremlin is well capable of taking advantage.

The immediate trigger for the protests, as in Iran, Venezuela and many other countries around the world, was a cut in fuel subsidies. The government attempted to raise the price of liquefied petroleum gas, extensively used in Kazakhstan for cars as well as the more usual cooking and heating, to market levels. This has quickly spilled out into wider anger over economic inequality, corruption and a lack of political rights.

Kazakhstan has been the former Soviet Union’s economic success story. Landlocked, sparsely populated, more than four-fifths desert and steppe, it inherited a legacy of environmental damage – nuclear weapons testing, pesticides, salinisation and desertification. Yet now, according to World Bank data, the country's economic output per person (\$9,122) is only a little lower than Russia’s (\$10,127), and higher than all other former Soviet republics, excluding the three Baltic states. This wealth is unevenly divided. Most of the country’s oil is produced in the west, which suffers from higher levels of poverty and unemployment. In 2011, labour unrest at the oilfields was violently suppressed, and there were further nationwide protests in 2016 and 2019.

Inflation, currency devaluation and then the pandemic hit ordinary Kazakhs hard, with consumer debt rising significantly. Inflation is estimated to have increased to 7.5 per cent last year while the economy was set to have expanded 3.3 per cent after shrinking 2.6 per cent, the International Monetary Fund said. Meanwhile only 162 people hold 55 per cent of the country’s total wealth, consultancy KPMG has said.

Kazakhstan is the second-biggest non-Opec oil producer within the Opec+ agreement, with a February allowance of 1.59 million barrels per day. Most of this is exported via the CPC pipeline through Russia, but it also sends about 200,000 bpd to China. Even more importantly, it is almost the only producer in this group, with Russia, anticipating substantial production growth. The country’s leading oilfields, Tengiz, Kashagan and Karachaganak, are giant and technically challenging, with complex carbonate reservoirs and high levels of corrosive, toxic hydrogen sulphide. They feature consortiums of mostly western firms and the Kazakh state, leavened with Chinese and Russian interests, and Tengiz and Kashagan have major expansion projects underway. China overall runs about a quarter of the national oil production.

Though not a large gas producer itself, the strategically important gas pipelines from Turkmenistan and Uzbekistan to China cross Kazakh territory. Its dominant energy role is in uranium: it produces more than 40 per cent of the world’s supply and prices for nuclear fuel jumped 8 per cent on news of the unrest. The latest protests may slightly have reduced exports from Tengiz. Workers at Chinese joint ventures at the Mangistau and Karazhanbas fields have gone on strike. But there is no immediate major threat to energy output. The energy significance lies in longer-term politics.

Former president Nursultan Nazarbayev skilfully steered between Russia and China while maintaining good relations with the west. He

moved the capital to Astana, later renamed Nur-Sultan in his honour, to anchor control of the north where more ethnic Russians live.

Mr Tokayev was weaker domestically, a technocrat and diplomat without Mr Nazarbayev's historical legacy or business networks. He has now dismissed a legacy coterie of key officials, such as security chief Karim Masimov and Prime Minister Askar Mamin. Mr Nazarbayev has also lost his eminence grise position as head of the security council. Though Mr Tokayev speaks Chinese as well as Kazakh and Russian, under him the Moscow-Beijing balance has immediately stumbled. He turned to the Moscow-headquartered Collective Security Treaty Organisation, which agreed to intervene for the first time in its 30-year history, rather than the Chinese-led Shanghai Co-operation Organisation.

The sudden Kazakh crisis may be a distraction for Mr Putin from his plans for Ukraine and Belarus, but he does not want to see further success for popular protest. There is also opportunity in the situation: greater leverage over Kazakhstan would enable Moscow to limit further oil and gas export projects and to control the price they could sell at via common export tariffs, so reducing competition with Russia's own sales to China.

Along with the existing Power of Siberia pipeline from eastern Siberian fields, Russia is proposing the Altai or Power of Siberia II pipelines, which would bring gas from west Siberia to western or eastern China respectively.

This would allow Gazprom to divert gas from its current dominant customers in Europe. The European market is likely to shrink in the longer term, particularly given current very high prices and worries in Brussels over Russian political leverage. China's gas imports are soaring given its environmental policy of pivoting away from coal. Over-reliance on liquefied natural gas is problematic at a time of rising tensions with the US, whose navy could threaten shipping lanes from the Middle East and south-east Asia.

Pipelines from Eurasia seemed more secure, with Kazakhstan a core country in the "Belt and Road" initiative. Turkmenistan, holder of the world's fourth-largest gas resources, is already a key supplier. To dilute Russia's dominance and possible future Kazakh trouble, Beijing would now have to find other delivery routes. That could mean reviving plans for "Line D", following the tricky and mountainous route through Tajikistan and Kyrgyzstan. China offers the Central Asian states far more economically, but Russia remains the security arbiter, as the latest moves make very clear.

The question now is whether the Kazakh people will accept an unpopular government. If it survives, how will that government restore the Sino-Russian balance? And what can Beijing do to ensure that its critical oil and gas supplies through central Asia remain secure and diversified?

WHY INTELLIGENT GOVERNMENT ACTION IS NEEDED TO SOLVE THE PANDEMIC-INDUCED INFLATION

Robin Mills • *A version of this article appeared in The National, Jan. 3, '22*

"Furious avarice which, with no thought for the human race, hastens to its own gain." So the Roman emperor Diocletian described inflation, in his edict of 301 C.E. as he set the maximum prices for more than a thousand goods. Without the benefit of modern economists, Diocletian was unaware that the rising prices were due to the dislocations caused by a half-century of civil war, barbarian invasions, plague, the drain of precious metals for eastern luxuries and the debasement of the currency.

The western world had to learn a similar lesson in the early 1970s, with energy price squeezes, the deteriorating US balance of payments and the end of convertibility of the dollar to gold. Attempts at price and wage freezes failed, and caps on oil and gas prices led, predictably, to shortages.

Petrol station queues are the iconic image of that era. Stagflation married economic recessions with rising prices, a challenge to prevailing economic orthodoxy. Inflation was thought to have been conquered after the early 1980s. Independent central banks, strict monetary policy, weaker labour rights, globalised supply chains, free trade and the rise of China as the world's low-cost manufacturing centre all played a part.

Inflation rates in Europe hovered at a target of about 2 per cent during the 2000s and frequently fell to around zero after the global financial crisis. The concern then became Japan-style deflation and economic stagnation.

2021 dramatically reversed this picture. Year-on-year inflation in November was 6.8 per cent in the US and 4.9 per cent in the eurozone. Travelling around the US gives vivid evidence: unavailable hotel staff, expensive food, gaps on shelves and Covid-19 testing almost inaccessible.

Global commodities are at the forefront. During the past year, liquefied natural gas prices tripled, coal doubled, oil was up 50 per cent, aluminium rose by 40 per cent and copper by 25 per cent. European electricity prices hit record levels, forcing industries to halt. Asset inflation is also prominent, with the S&P 500 stock index gaining 27 per cent over the year. In dollars, the price of oil rose 50 per cent over the course of 2021, yet in Bitcoin, it fell 6 per cent. One Bitcoin would have bought 673 barrels at the end of December, compared with 635 barrels at the start of last January.

Now, we are not in 1970s-style stagflation: quite the opposite, as the economy is booming. The shortages of goods in western countries are shortages of affluence, and trivial compared to those in Venezuela, Lebanon or the former Soviet Union towards its end. But the factors that delivered low inflation are, at least temporarily, in reverse.

The immediate driver is the pandemic. An unprecedented slump in travel and work was followed by a surge that was almost as striking. Government relief programmes put money in pockets; this has been spent on physical goods more than services, driving up the costs of materials and shipping.

Health restrictions have worsened maintenance backlogs and bottlenecks: 2,200 flights were cancelled worldwide on Monday over lack of aircrew. Employees have been more willing to leave their jobs for better conditions and higher pay, amid falling unemployment and more acceptance of online working. Increases of 10 per cent to 15 per cent for steel, field staff and drilling rigs will hamper a rise in shale oil output next year. Even though oil prices have slipped back since late November, US President Joe Biden's administration will continue to put pressure on Opec+ to raise production.

In an echo of Diocletian, Democratic senator Elizabeth Warren, who knows better, wrote to American oil companies that "these price increases are being driven by energy companies' corporate greed and profiteering". New energy is affected too: supply chain issues and higher polysilicon prices have raised solar photovoltaic module prices by 50 per cent, after a decade of steep declines.

But longer-term factors are at play too: rising hostility to migration that causes labour shortages and a hankering for "managed trade" to protect favoured constituencies. The era of free trade expansion may have ended, with rising Sino-American hostility, the US refusal to join the Asian trade pact, which the country itself had orchestrated and the absurd morass of Brexit.

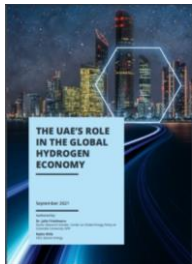
The experience of the slow recovery after the 2008-09 financial crisis, a decade of near-zero interest rates, and the massive pandemic-induced stimulus programmes have combined with the heterodox

economics of Modern Monetary Theory to raise comfort in high levels of government spending. As the century moves on, climate change will cause more damaging weather events, requiring greater resilience and spare capacity, and unpredictably shutting down energy systems, mines, ports, roads and railways.

Meanwhile, the push for a low-carbon economy means the early retirement of polluting but still productive assets such as coal-fired power plants and diesel cars. Despite rising power prices, Germany closed three of its last six nuclear stations on Friday in fulfilment of its ideological anti-nuclear policy. Restrictions on investment in fossil fuel production have so far run ahead of falls in demand.

The green transition will also demand enormous quantities of materials such as rare earth minerals, copper, silver, tin, lithium, cobalt and nickel. These are often mined or processed in a very limited number of countries, particularly China. Attempts to "reshore" production of future energy systems such as batteries and electric vehicles in the US and Europe will raise costs. Still, there can be a happy medium between persistently higher inflation and recession. Government choices about spending and money creation will be crucial.

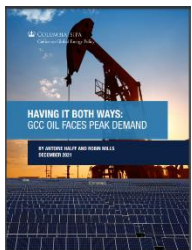
Over time, supply chain frictions will ease and energy costs will moderate as expanded and improved low-carbon systems are used at scale and critical bottlenecks are overcome. Intelligent government action to improve productivity will prove superior to imperial edicts.



THE UAE'S ROLE IN THE GLOBAL HYDROGEN ECONOMY

Authored By: Robin Mills and Julio Friedmann, along with Maryam Salman and Maryem El Farsaoui

The UAE is well-placed to take an early-mover advantage in global hydrogen production and is pursuing a balanced strategy covering both 'blue' and 'green' hydrogen. The UAE and its corporate entities have been highly active since late 2020 in developing global partnerships to expand the local hydrogen value chain. This report presents an analysis of the hydrogen industry in the UAE covering strategic opportunity, market development, projects and partnerships, and cost-competitiveness. Read the full report [here](#)



HAVING IT BOTH WAYS: GCC OIL FACES PEAK DEMAND

Authored By: Antoine Half and Robin Mills

This paper, part of the work by Columbia University's Center on Global Energy Policy on oil and Gas and the energy transition, examines two broad actions being taken by petrostates to remain relevant in a decarbonizing world: demand defense and demand creation. It also focuses on global efforts to address climate change offering difficult choices for the oil- and natural gas- reliant economies of the GCC. Read the full report [here](#)

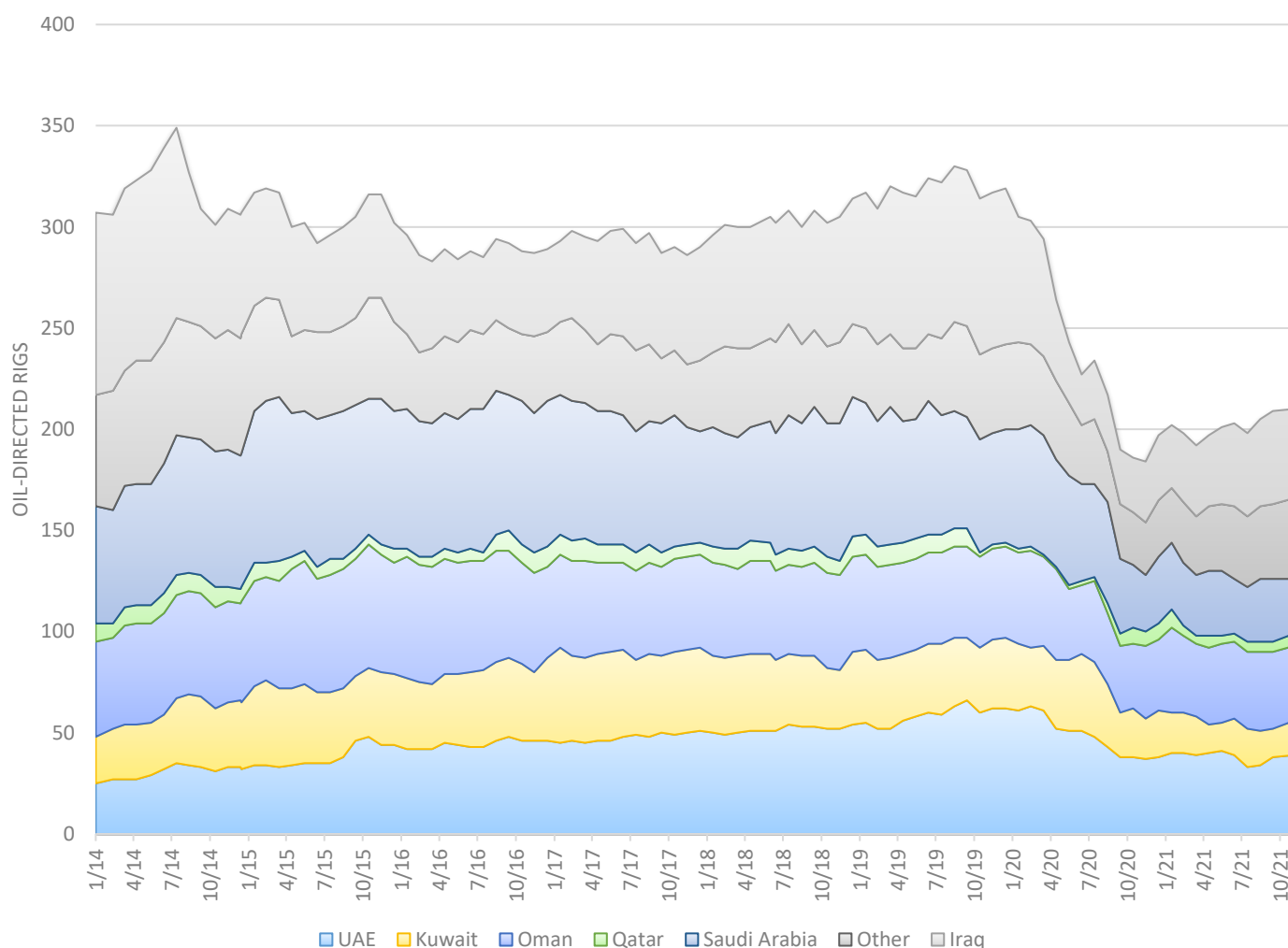


ENERGY THIS WEEK, THE NATIONAL NEWSLETTER

Authored By: Robin Mills

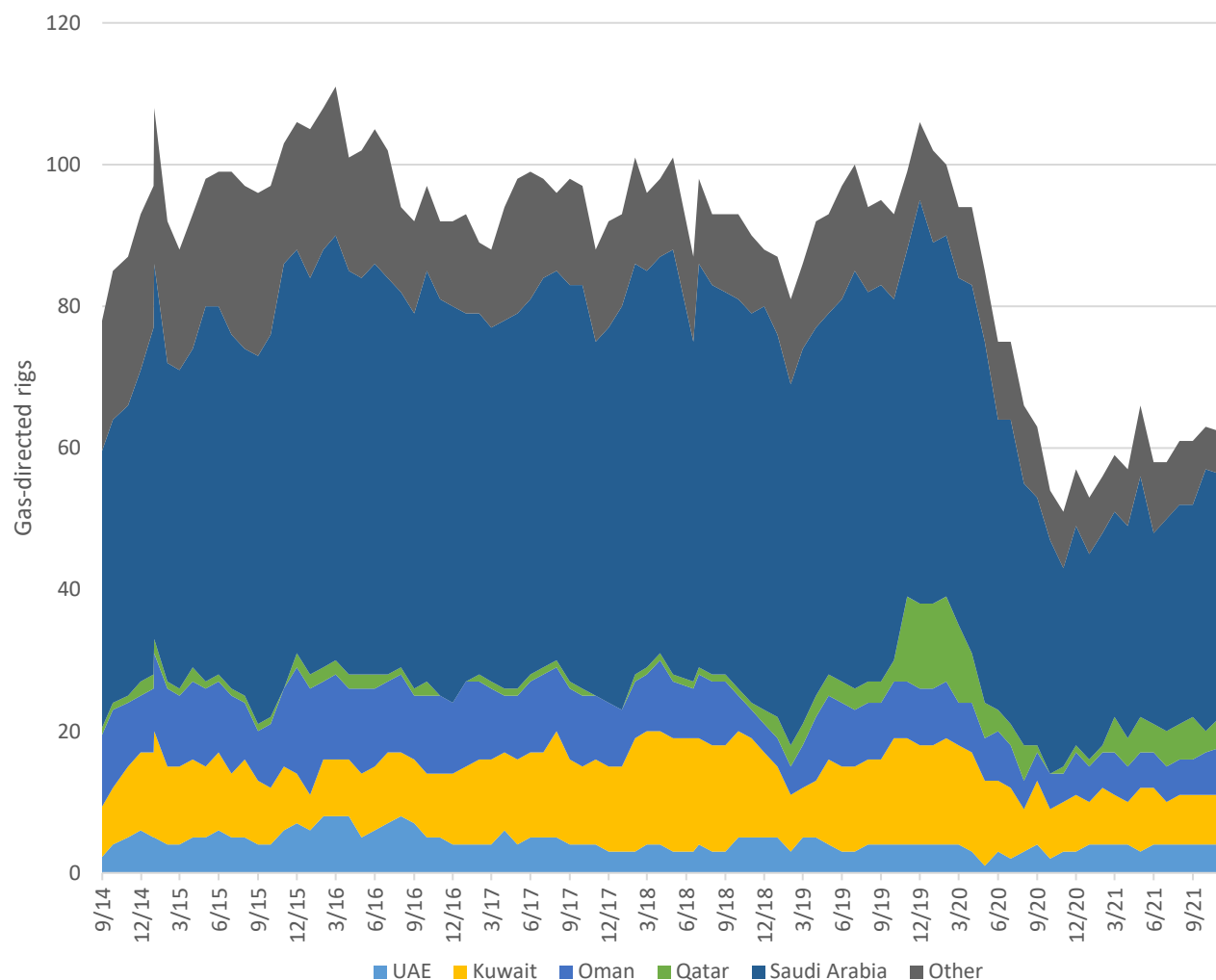
Energy this Week is a weekly newsletter authored by Robin Mills, published every Wednesday. Some of the topics covered under the latest newsletter are: the debate continues over energy sector underinvestment, cryptocurrencies face energy challenges, forecasters see a short-term oil surplus – are they correct? 'A new global energy economy is emerging'. Read and subscribe to the Newsletters [here](#)

RIG COUNT SNAPSHOT: OIL



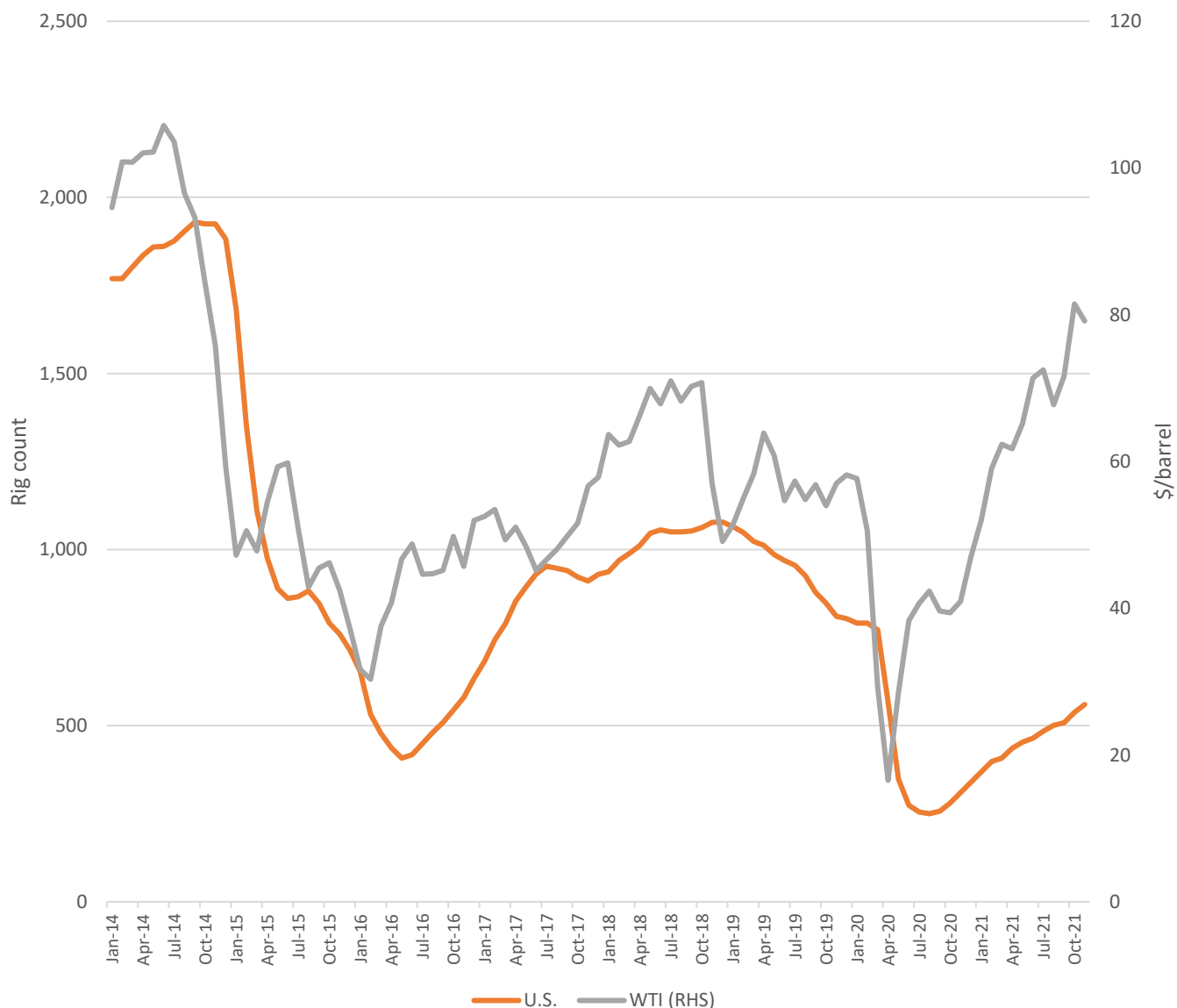
- The Middle East's overall oil rig count in November increased by +2, excluding Iran, due to the OPEC+ agreement to continue its progressive monthly production increases.
- Iran's intends to increase its production capacity to 4 million barrels a day and set a budgetary oil price of \$60 a barrel in 2022 from \$40 a barrel this year. The country aims to increase its exports to 1.2 million barrels per day starting from March 2022, a partial recovery towards the 1.5 million barrels a day achieved before the US reimposed oil sanctions from May 2019.
- Iraq's rig count increased in November 2021 to 44, up 63% from November 2020, though still well below its pre-CoVid-19 levels. Rig count will likely increase in the immediate term following the resumption of Al Qayyarah oilfield's production.
- UAE oil rig count increased to 39 in November from 38 in October 2021, though still much lower than the pre-Covid count of 60 in November 2019. ADNOC Drilling announced a fleet expansion project by 2025, as part of its Smart Growth Strategy. Rig count is likely to increase in the long-term following the award of a US\$ 946 M contract to Abu Dhabi's National Petroleum Construction Company (NPCC) to develop the offshore Umm Shaif oilfield, aiming to boost production capacity to 5 Mbpd by 2030.
- Kuwait's oil rig count increased to 17 in November 2021, above the average for the last three months of 2021 of 16. It is much lower than 4Q 2020's average of 25.6. Kuwait faces some concerns over diminishing production capacity.
- Saudi Arabia's rig count reached 27, lower than the November 2020 rig count of 31. Saudi Arabia is still far from reaching the average pre-CoVid count of 55.3 in 2019. As OPEC+ made production cuts last year to combat the Covid induced fall in demand, it is now increasing supply to stabilize markets. With the construction of Saudi Aramco's ambitious projects, Marjan and Zulf, the rig count is expected to increase in the near future.
- Oman's oil rig count decreased by 1 reaching 37 in November 2021, lower than the stable value of 45 pre-pandemic.

RIG COUNT SNAPSHOT: GAS



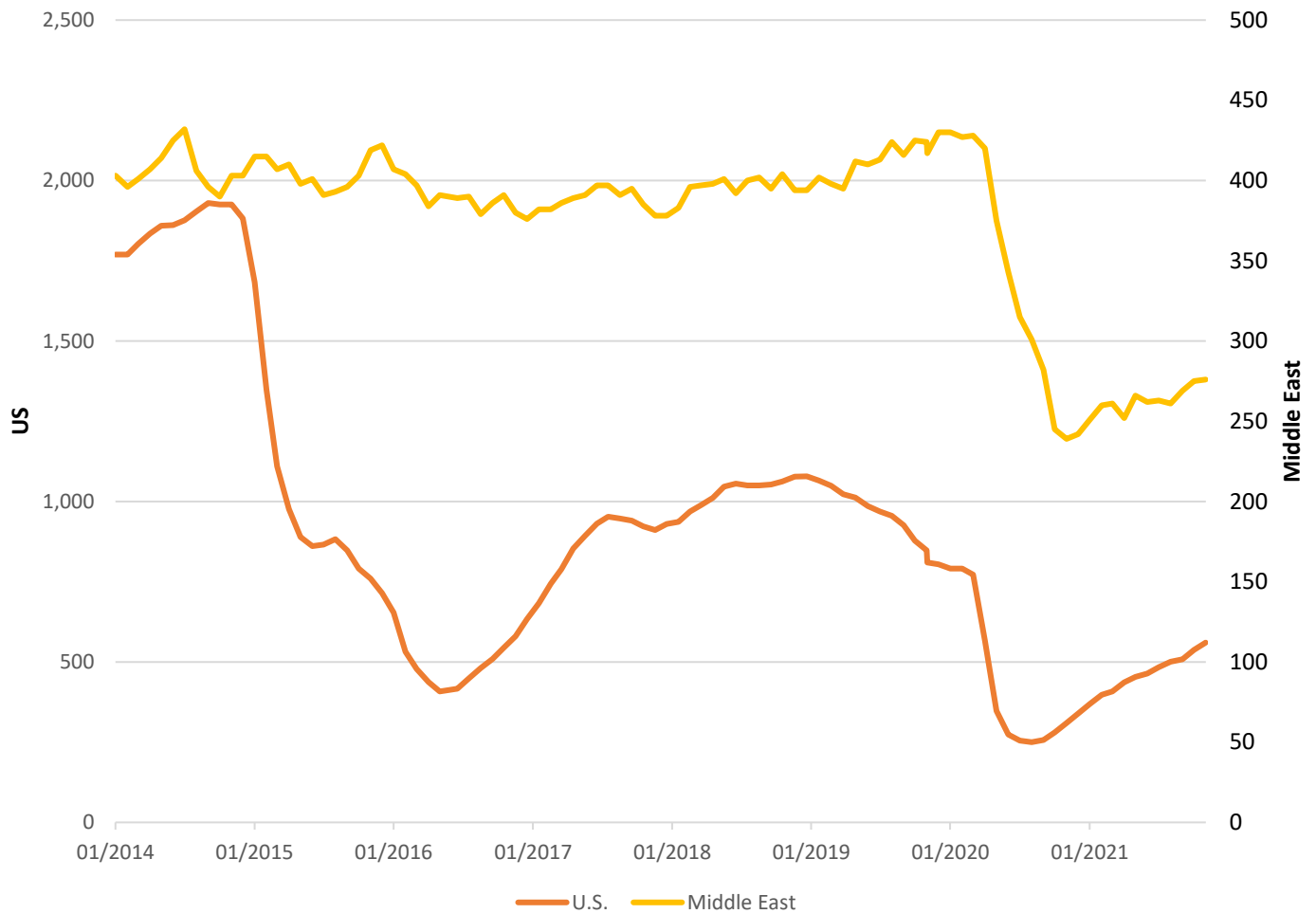
- The Middle East's overall gas rig count decreased by -1 in November to 62, higher than 51 in November 2020. This is still much lower than the pre-Covid average of 99.6 in 2019.
- Oman's rig count increased in November by 1 standing at 7, much higher than November last year. TotalEnergies partnered with Shell and OQ on the development of the Saih Rawl field (Block 10). Marsa LNG, a company between TotalEnergies (80%) and Oman National Oil Company (20%), has 33.19% of interest in the block. The project plans to produce 24,000 boe/d by 2023.
- Kuwait's gas rig count remained stable at 7 for November, similar to last year's count in the same month though the values are lower than pre-Covid. Kuwait Oil Company (KOC), under an agreement with Spetco International Petroleum Company, has planned the further development of the Jurassic gas reservoirs in the northern border area. The \$400 million project aims to produce about 150 Mcf/d. Another project valued at \$426 million, signed with Chinese firm, Jereh Oil and Gas Engineering Corp, will produce nearly 950 Mcf/d.
- The UAE's November rig count is stable at 4 but increased since last November. ADNOC announced a \$127 billion spending plan for 2022-2026 directed to gas and oil production. ADNOC's investment is directed to Mughharraq Port as it becomes an international hub receiving vessels for gas developments. Engineering contracts were awarded in November for the Dalma offshore sour gas field.
- Qatar's rig count increased +2 reaching 5 in November, a total increase of +5 since November 2020. QatarEnergy signed a contract with Tenaris to expand the North Field East (NFE) as part of increasing LNG production from 77 to 110 million tonnes per year by 2025. Tenaris will supply 197,000 tonnes of welded, high end sour pipe. QatarEnergy awarded FEED contracts for NFE and North Field South (NFS) to the US's McDermott.
- Saudi Arabia's rig count decreased by -4 in November to 33; these values are lower than pre-Covid. Saudi Arabia plans to develop its Jafurah shale gas to 2 Bcf/d of gas, 418 MMcf/d of ethane and 630,000 boe/d of gas liquids as part of its 2030 plan to cut the use of oil in power generation.

RIGS VERSUS OIL PRICES: US RIGS & WTI



- US rig count for November 2021 increased by 6 reaching 569, a major increase from November 2020 when the rig count was at 320.
- Rig count in the Permian Basin increased to 280 in November 2021 from an all-time low at 244 last year, followed by 37 rigs in the Eagle Ford. On-land rig count reached 552 and the offshore was unchanged at 15.. Among the major oil and gas producing states, three increased their rig counts: North Dakota increased by 4 to 27, Texas saw a gain by 2 to 273, and Pennsylvania with a single rig increase reached 19 units in November 2021.
- US crude production decreased by 3.5% as Hurricane Ida hit offshore in September, which halted production in the Gulf of Mexico. Overall 11.3 million barrels per day recovered to 11.6 million barrels per day in November. With over a week left in 2021, the data shows oil production to stand at 11.6 million bpd in December.

RIG COUNT: US & MIDDLE EAST



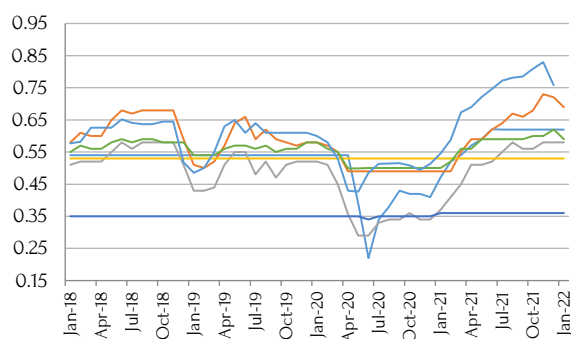
- Rig count remains at 15 for the month of November, not a large change since the last few months. US is releasing up to 50 million barrels of crude oil from Strategic Petroleum Reserve (SPR), in coordination with other countries who committed to release small amounts as well.
- Saudi Arabia along with the rest of OPEC+ planned to increase the production by 400,000 barrels per day in January 2022.

FUEL PRICES & SUBSIDY REFORMS

- In the UAE, gasoline and diesel January prices decreased as compared to last month to \$0.69 and \$0.70 per litre, respectively, the highest since December 2018 for diesel and an all-time high for gasoline, signalling a return to pre-Covid-19 prices.
- In Qatar, January prices for gasoline and diesel are same as last month \$0.58 and \$0.56 per litre, respectively, with gasoline at its highest since August 2021.
- In Oman, the price of diesel in January decreased from last month to \$0.62 and gasoline at \$0.59 per litre respectively.
- In Saudi Arabia, gasoline price is stable at \$0.62 lower since June '21, when the government introduced a VAT on local fuel prices to boost the economy. Whereas the price in January for diesel surged to \$0.17 per litre.

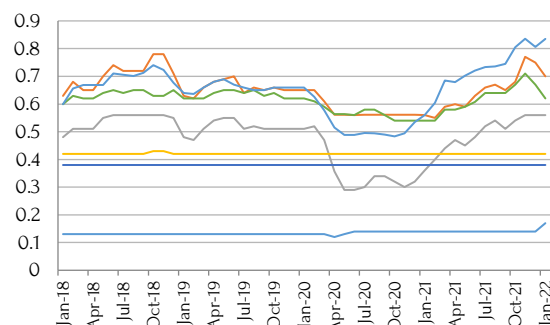
The following charts represent the prices of gasoline 95 and diesel (\$/litre) till January 2022 in the GCC countries.

GASOLINE PRICES \$ Litre



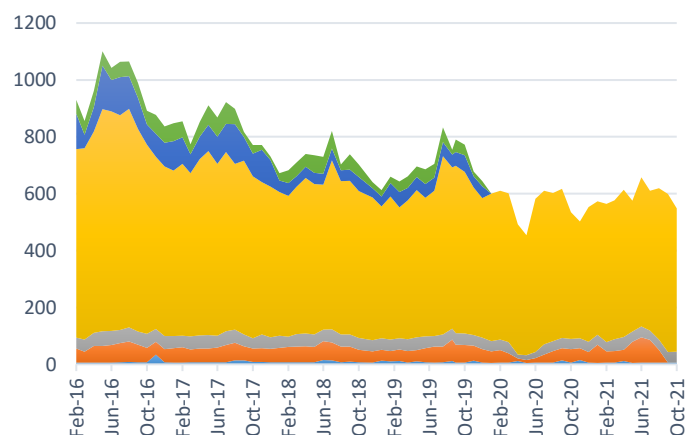
— Saudi Arabia — UAE — Qatar
— Bahrain — Kuwait — Oman
— US Pre-Tax

DIESEL PRICES \$ Litre



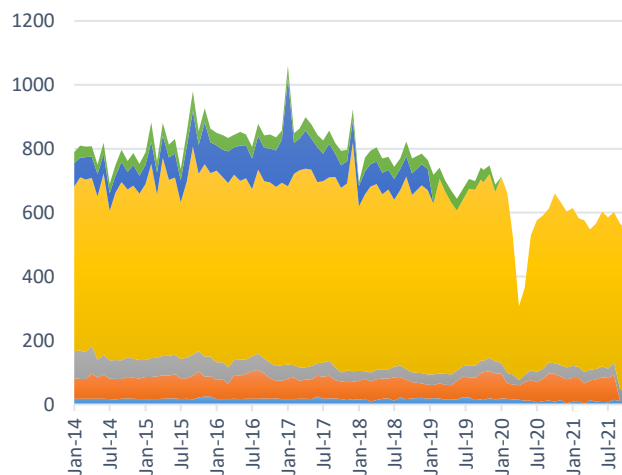
— Saudi Arabia — UAE — Qatar
— Bahrain — Kuwait — Oman
— US Pre-Tax

DIESEL DEMAND kbpd



■ Bahrain ■ Kuwait ■ Oman ■ Saudi Arabia ■ United Arab Emirates ■ Qatar

GASOLINE DEMAND kbpd

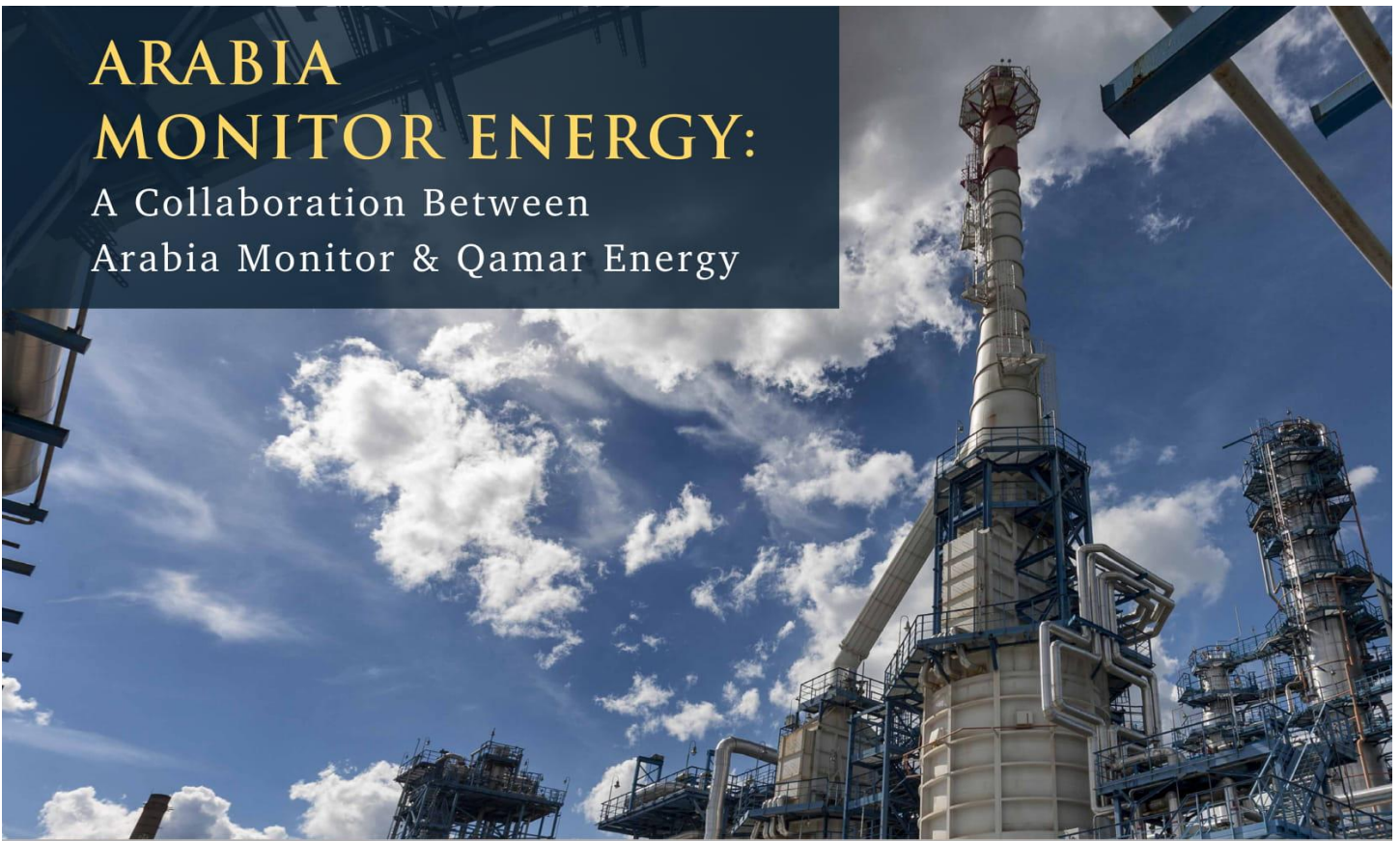


■ Bahrain ■ Kuwait ■ Oman ■ Saudi Arabia ■ United Arab Emirates ■ Qatar

Note: JODI UAE and Qatar gasoline and diesel figures are unavailable for 2019, 2020 and 2021.

ARABIA MONITOR ENERGY:

A Collaboration Between
Arabia Monitor & Qamar Energy



ARABIA MONITOR ENERGY

Oil and gas tensions in the Middle East continue to influence the volatility of the world's energy markets. The Arabia Monitor Energy, a novel collaborative effort by Qamar Energy and Arabia Monitor, combines macroeconomics, geopolitics and energy intelligence to explain what the region's energy geo-economics mean for business.

WHAT SETS IT APART?

1. INSIDE OPEC

Focussed assessment of the month's OPEC developments, policy advancements and strategies.

2. NOC & IOC ANALYSES

Examination of factors affecting NOC and IOC policies, and their impact on regional diversification schemes.

3. SPOTLIGHT THIS MONTH

Targeted reading of the geopolitical, macroeconomic and energy landscape of a MENA country utilising our specialised energy intel.

4. SCENARIOS TO WATCH

Detailed forecast of global oil developments and their impact on the risks and opportunities for MENA's oil production.

5. STRATEGIC IMPLICATIONS

Concise summary of major oil trends and their effect on investment strategies under bearish, bullish, and wobble scenarios.

6. OUTLOOK FOR THE YEAR

Cohesive outlook of the oil production, gas production, renewable energy projects, and geopolitics of key MENA countries.

WHO BENEFITS?

ENERGY TRADERS

- What factors will contribute to oil and gas price fluctuations?
- What is the outlook for oil and gas pricing?
- What is the outlook for OPEC's production and export strategy?
- How are NOCs adapting their oil marketing strategies?

INVESTMENT AND RISK ANALYSIS

- What are the operational risks and investment opportunities in MENA?
- How do economics, politics, government policy changes, production and export bottlenecks contribute to risk mitigation?

UPSTREAM FIRMS

- What are the chief economic, political and fiscal regime factors driving/limiting upstream investment decisions and progress?
- What are the oil supply outlooks for the countries by project?

DOWNSTREAM FIRMS

- What are the demand challenges, patterns, and trends for oil and oil products?

NATIONAL OIL COMPANIES

- What are future oil and gas pricing trends?
- What developments will intensify or weaken demand?
- What are IOCs' incentives and drawbacks in operating in the country?

ALTERNATIVE / RENEWABLE ENERGY ORGANISATIONS

- What are the challenges to renewable energy targets?
- What is the progress of major renewable energy projects?
- Are there opportunities for more entrants?

THE DELIVERABLES

8 MONTHLIES

- Oil Price Scorecard
- Headline Developments
- Spotlight this Month
- Scenarios to Watch
- Projects in the News
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- Investor Implication Scenarios (Under 3 Oil Price Dynamics)

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Arabia Monitor
Economic Research and Strategy



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DEBOTTLENECKING SHORTCOMINGS

OPEC WATCH

OPEC Production			OPEC+ Compliance		
<ul style="list-style-type: none"> As we enter 2022, OPEC member countries have plans to reach pre-pandemic oil production levels in the first quarter. However, the markets appear to be sceptical as Omicron fear looms over the economies. The 10-OPEC member countries pumped around 27.8 Mbpd, up 70 kbpd from November levels. OPEC+ plans to increase crude production 400kbpd in February, easing concerns that there will be a big surplus by Q1 2022. Even though, internal OPEC+ data points to a surplus of 800 kbpd in January and 1.3 Mbpd in February, though that's much less than initially anticipated. Saudi Arabia pumped 9.89 Mbpd in November lower than the quota of 9.91 Mbpd. UAE and Kuwait having spare capacity produced 2.5 Mbpd and 2.53 Mbpd, an increase of 200,000 bpd from the previous months. Iraq on the other hand, pumped 80,000 bpd, reaching an average of 4.25 Mbpd in November. 			<ul style="list-style-type: none"> OPEC+ overall compliance reached 127% in December, where Saudi Arabia remains the strongest complier. The over compliance was driven by Nigeria (up 100 kb/d) and Angola, both countries struggling to increase their production. . Omicron variant will have a low impact on demand and oil producing countries face capacity constraints hence, the actual supply is likely to remain low as revised by OPEC+ delegates. Nigeria whose output has been constrained by infrastructure problems, insecurity and underinvestment in 2021, contributed the most to the m-o-m increase. Despite the recovery, Nigeria produced 160 kb/d under its quota for the month. Iraq on the other hand, exceeded its quota for November and should theoretically make up for overproduction through the compensation scheme extended until June 2022. Russia, which was allowed a monthly increase of 104 kb/d in November, only produced 40 kb/d more than what it pumped in October. Russia's spare production capacity shrank dramatically over last year and it will have to step up drilling to meet future OPEC+ increases. 		
OPEC Production, Mbpd			Non-OPEC Production ¹ , Mbpd		
October	November	Change (%)	October	November	Change (%)
27.43	27.71	--1.02	63.64	63.7	--0.09
Latest Organisational Changes					

- OPEC+ decided to go ahead with its policy to increase monthly output despite fears of US release from crude reserves crude reserves and surge in Omicron that might change the current pricing route. The US has repeatedly pushed OPEC+ to accelerate the hike as US gasoline prices surged. OPEC+ in their recent meeting considered halting their plan to increasing output by 400,000 barrels per day. OPEC saw an increase in their crude production by 220,000 reaching 27.74 million bpd however, the increase is still below the target set. Saudi Arabi and

¹ Excluding OPEC NGL and non-conventionals

Iraq saw the increase in their production and Nigeria's recovery to meet its target has been a success, unlike the rest of the African countries who struggle to meet their targets.

- No changes have been made in reaching the target increase of 0.4 Mbpd by February 2022.
- The 25th OPEC and non-OPEC Ministerial Meeting will be held on February 2nd, 2022.

KEY MENA ENERGY SCORECARD

Abu Dhabi Developments

Oil & Gas	<ul style="list-style-type: none"> • ADNOC signed a new deal to invest \$127 billion as reserves increased by 4 billion barrels of oil and 16 trillion cubic feet (Tcf) of natural gas as part of the capital spending plan 2022-2026. The board meeting chaired by the Abu Dhabi Crown Prince confirmed the spending and declared that the investment will not only increase UAE's production capacity but will also open opportunities for low carbon and clean energy sector • ADNOC announced the award of a US\$ 744 M contract to the National Petroleum Construction Co. (NPCC) for the development of the Belbazem offshore block, 120 kms northwest Abu Dhabi, consisting of three marginal fields: Belbazem, Umm Al Salsal and Umm Al Dholou.
Alternative Energy	<ul style="list-style-type: none"> • UAE clean energy firm Masdar and France Engie agreed on investing \$5 billion on renewable and hydrogen projects to produce 2 GW equivalent by 2030 in the UAE green energy hub as part of the country's net zero emissions pledge by 2050. • Masdar, along with Abu Dhabi Airports, finalised the installation of 3 MW of solar PV to shade a car park in Abu Dhabi International Airport. Masdar will perform operation and maintenance for 25 years as per the lease agreement • Mubadala Investment Company, ADNOC and ADQ signed an MoU to establish the Abu Dhabi Hydrogen Alliance, and ADNOC joined the international Hydrogen Council. • ADNOC announced a US\$ 1 B green hydrogen and ammonia plant situated at the Khalifa Industrial Zone. The solar-powered facility will be built by Helios Industry and will initially include a 100 MW solar plant, which will rise to 800 MW in the future. The plant will have a peak capacity of 40 ktpa (35290.91 MJ/year H₂) of green hydrogen, while the 40 ktpa H₂ would make 270 ktpa NH₃, suggesting that the plant will run at an annual capacity of about 75% of peak output. • ADNOC announced it will develop a world-scale blue ammonia production facility in Ruwais, Abu Dhabi. Currently, the facility is in the design phase and will be developed at the new Ta'ziz industrial ecosystem and chemicals hub in Ruwais. The plant will have a capacity of 1 Mtpa

Kuwait Developments

Oil & Gas	<ul style="list-style-type: none"> • The Ministry of Electricity and Water (MEW) and the Kuwait Petroleum Corporation (KPC) signed an agreement for the supply of fuel to electrical power stations until 2035, which was facilitated by the State
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	<p>Treasury that paid KD 5 billion to KPC to fuel the electric plants. The average value of fuel consumption stands at about KD 1.5 billion (\$4.9 million) which is increasing annually based on the urban expansion.</p> <ul style="list-style-type: none"> As GCC countries accelerate their efforts to diversify their energy and power generation mix, Kuwait opened the Al Zour LNG import terminal, which already received its first cargo of gas from Qatar mid-July. With 20 Mtpa capacity, Al Zour will replace the existing smaller floating LNG terminal, and displace fuel oil and crude burnt in power plants The country plans to award contracts worth US\$ 754 M to regional companies for 31 drilling towers, as part of long-delayed plans to boost production from 3.15 Mbpd to 4 Mbpd by 2040
Alternative Energy	<ul style="list-style-type: none"> Kuwait has updated its first Nationally Determined Contribution (NDC) pledging to cut its GHG emissions by 7.4% under the BAU scenario by 2035 with unconditional national effort. The country estimates GHG emissions at around 142 MtCO₂e by 2035, which is 65% more than in 2016 (reference year). The 7.4% cut could limit GHG emissions by almost 11 MtCO₂e.

Qatar Developments

Oil & Gas	<ul style="list-style-type: none"> Qatar's North Oil Company (NOC) has issued the huge Gallaf offshore tenders for work on multiple packages involving further expansion of Al Shaheen, the country's largest offshore oilfield QP will not be renewing the Qatargas Natural Gas Company limited (QG1) JV and will become the sole owner of Qatargas 1 by 2022. Qatar Petroleum (QP) will own 100% of the QG1 – originally a JV between QP and affiliates of Total, ExxonMobil Marubeni and Mitsui – assets on 1st January 2022
Alternative Energy	<ul style="list-style-type: none"> Qatar Petroleum rebrands itself as QatarEnergy to reinvent itself as an environmentally responsible company. QatarEnergy is also selling green bonds in a deal likely to be worth billion dollars. The company is looking to raise US\$ 5-10 B from the sale. The framework would be in partnership with global investment banks including Goldman Sachs, in line with the global energy transition. The offering is expected to take place in Q1 2022 or by June 2022.

Federal Iraq Developments

Oil & Gas	<ul style="list-style-type: none"> Iraq National Oil Company approved its plan to buy Exxon Mobil's stake in West Qurna 1 field in the Southern province of Basra. The field is one of the largest in Basra and Exxon Mobil was looking to sell its 32.7% stake for \$350 million to its Chinese partners, but the Iraqi authorities pushed for sale to another American company. The field's production capacity in 2021 was around 500,000 barrels. On 9th November, Iraq's Council of Ministers approved INOC to directly negotiate with US firm Chevron on the development of oilfields in the Dhi Qar province, potentially boosting capacity by 600 kb/d. Current production is from the 100 kb/d Petronas-operated Gharraf field and the Dhi Qar Oil Company (DQOC)-operated 90 kb/d Nassiriya and 30 kb/d Subba. The ministry stated that negotiations focused on four exploration blocks in Dhi Qar and also cover further development of Nassiriya.
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	<ul style="list-style-type: none"> The Ministry of Oil has announced the inauguration of a new project to upgrade the existing gas separation plant in the Abu Ghirab field south of Missan province to a capacity of 100 kb/d and 20 MMscf/d to enhance and maintain electricity production in the province.
Alternative Energy	<ul style="list-style-type: none"> Iraq seeks to raise the share of clean energy to 33% by 2030 building on solid expansion in solar capacity, according to the country's oil minister. The plan is to develop 12 GW of installed solar capacity by the end of the decade. The government signed a number of contracts for solar projects with international companies including France's TotalEnergies, Saudi Arabia's ACWA Power, UAE-based Masdar, and PowerChina. Iraq signed agreements with a number of foreign companies to build 5.2 GW worth of solar power plants in the first phase. The electricity ministry plans to sign new deals with other firms, seeking to boost production to 7.5 GW in the medium term. Another 1 GW of solar capacity will be developed under the TotalEnergies agreement, part of a broader US\$ 7 B contract with the French major. Iraq expects 500 MW of Total's project to come online by end-2020, with the additional 500 MW to follow by 2023.

Saudi Arabia Developments

Oil & Gas	<ul style="list-style-type: none"> Saudi Aramco plans to increase production capacity to 13 Mb/d by 2027. The firm is relying on strong global demand to boost its crude capacity, expecting 99 Mb/d by end-2021 and more than 100 Mb/d in 2022. Currently, the company is conducting FEED which is expected to take around 2-3 years and will be followed by construction work, likely to take another 3-4 years. Aramco aims to deliver the bulk of the increase by expanding the capacity of three major offshore fields including the 400 kb/d Marjan field by 300 kb/d, the 300 kb/d Berri field by 250 kb/d and the 825 kb/d Zuluf field by 600 kb/d. Guyana awarded a unit of Saudi Aramco a tender to purchase a portion of the country's oil production, with the two parties likely to enter a one-year marketing deal. The company submitted the lowest compliant bid for a commission of US\$ 0.025/bbl. While Guyana had initially sought a partner to market its oil for one year, the government awarded Aramco Trading Ltd only the next loading, scheduled for September 21-22
Alternative Energy	<ul style="list-style-type: none"> ACWA Power, a Saudi power and water developer, signed a \$7 billion deal with Oman Oil and Air Products. The deal is part of the green investment and a result of the improving Saudi-Oman bilateral relations following the visit of Saudi Crown prince. Under the deal, Oman will produce green hydrogen in its Salalah free zone. The Kingdom has just pledged to cut its carbon emissions to net-zero by 2060, with a planned investment of over US\$ 180 B according to Crown Prince Mohamed bin Salman. The country is targeting hydrogen production, both blue and green, of 2.9 Mtpa by 2030 and 4 Mtpa by 2035. A multinational consortium, led by Masdar, France's EDF Renewables and Saudi's Nesma, kicked off the construction of a 300 MW solar park. The farm is scheduled to come online by 2022

	<ul style="list-style-type: none"> The Kingdom plans to build large nuclear power plants to achieve 17 GWe of nuclear capacity by 2040, potentially meeting 15% of the country's needs.
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Oman Developments

Oil & Gas	<ul style="list-style-type: none"> Saudi Arabia Crown Prince planned a visit to Gulf Arab States with Oman as the first stop of the tour. The intent is to enhance geopolitical relations between Saudi Arabia and the other five Gulf Arab Countries, and to increase cooperation and coordination on regional energy projects. This could open new trade opportunities and strengthen bilateral relations.
Alternative Energy	<ul style="list-style-type: none"> Following the visit of Saudi Crown Prince to Oman, a \$30 billion deal was signed between the Omani and Saudi firms. Oman Investment Authority signed 13 MoUs in energy, renewable, pharmaceutical and the Duqm port area. PDO and its parent Energy Development Oman (EDO) are building a 100 MW solar PV project, which will include 30 MW of battery storage capacity, at the Block 6 concession in Oman. The plant will be finalised by end-Q1 2023 Oman will build one of the world's largest green hydrogen plants, with state-oil firm OQ, Hong Kong-based Intercontinental Energy and Kuwait's EnerTech working jointly on a 25 GW-powered electrolyser. A final investment decision is not expected until 2026

MENA Energy Pricing Reform

- Bahrain introduced new fiscal reforms, to stabilize the economy, including the doubling of VAT. According to the agency credit ratings Bahrain's long term and short term foreign and local currency stood at B+/B. Bahrain's economic plan seeks to invest around \$30 billion in strategic projects to boost economic growth, employment opportunities and foreign direct investments. The government introduced 10% VAT to help the country balance its budget.
- UAE's new economic reforms are directed to attract investments by creating a flexible business environment and provide incentives to the investors. According to UAE's economic strategy, the country will contribute Dh300 billion (\$81.68billion) in the industrial sector in the next 10 years.
- Iraq introduces clean energy reform program to curb its rising pollution. The project will develop 7.5 gigawatts (GW) of renewable energy before 2023. Project's aims to generate 33% of electricity from renewables.
- QatarEnergy to introduce green bonds in 2022 to help reduce its emissions by 25% by 2030. Qatar plans to raise \$5 billion to \$10 billion from its green bonds as part of its environmental framework in collaboration with Goldman Sachs.



ABOUT US

Qamar Energy provides leading-edge strategy, commercial and economic consulting across the energy spectrum to governments, international oil companies (IOCs), national oil companies (NOCs), investors, and oil traders.



Robin Mills, CEO

Robin is an expert on Middle East energy strategy and economics, described by Foreign Policy as "one of the energy world's great minds". He is the author of two books, *The Myth of the Oil Crisis* and *Capturing Carbon*, columnist on energy and environmental issues for Bloomberg and The National, and comments widely on energy issues in the media, including the Financial Times, Foreign Policy, Atlantic, CNN, BBC, Sky News and others. He is a Senior Fellow with the Iraq Energy Institute, and a non-resident fellow at the Columbia Centre for Global Energy Policy. He holds a first-class degree in Geology from the University of Cambridge and speaks five languages including Farsi and Arabic.

UPCOMING TALKS & APPEARANCES



World Energy Policy Summit, New Delhi
4th-5th February 2022



Hydrogen Event organised by the Canadian Embassy
19th January 2022



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