



# SPECIAL REPORT



## ENERGY MARKETS OUTLOOK



**“Let’s Hope PEACE is Next Black Swan!”**

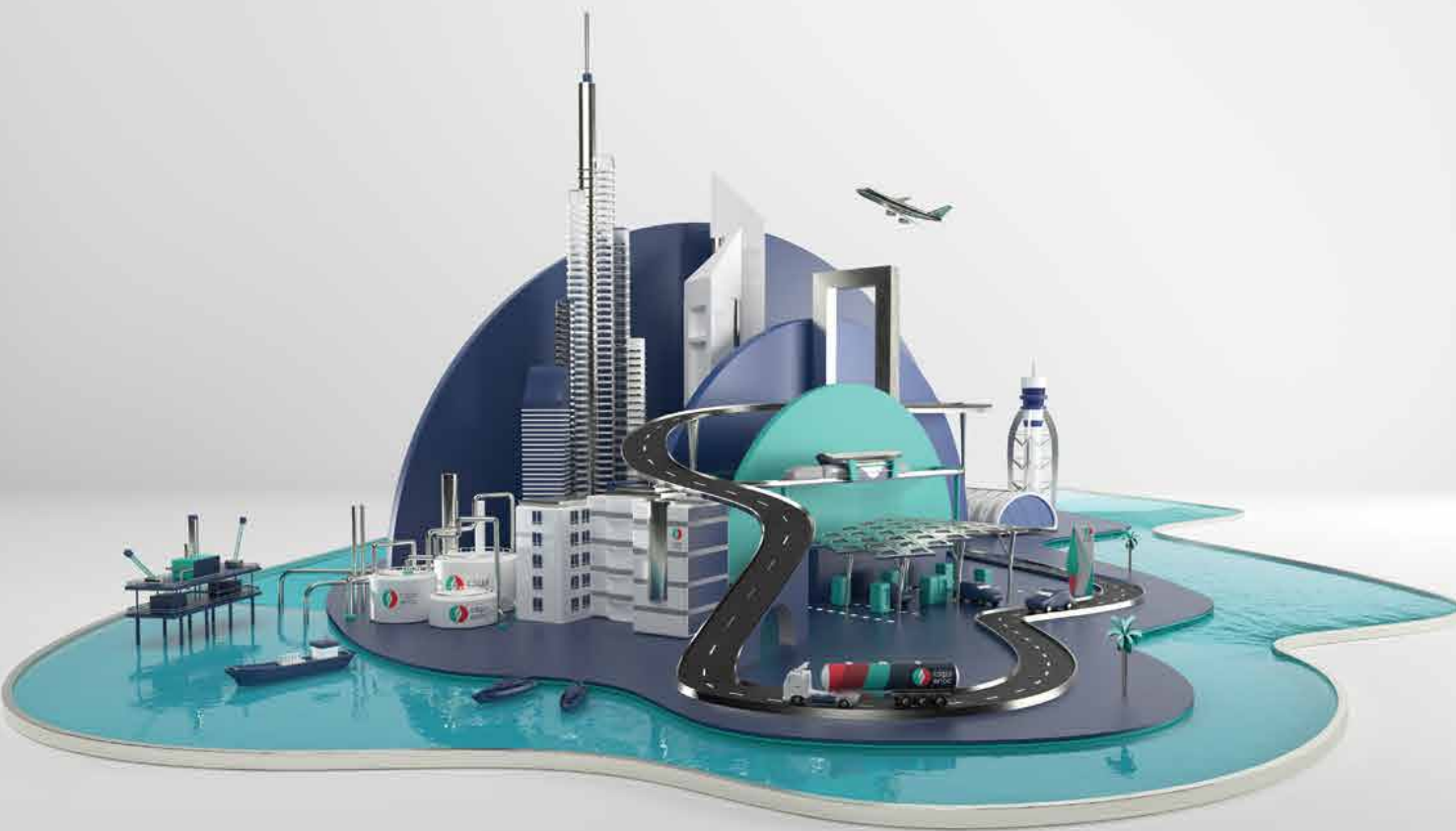
***Will Growing Geopolitical Tensions Cause  
Energy Security to Derail Energy Transition?***

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# GI SPECIAL REPORT ENERGY MARKETS OUTLOOK

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## FOREWORD

# Energy Security's Increasing Face-Off With Energy Transition is Driving New Market Opportunities

Energy security and energy transition are two important aspects of a nation's energy policy, and their importance can vary depending on each country's specific circumstances and priorities. It's not necessarily that one is more important than the other; rather, they are often interrelated and should be balanced to meet a country's energy needs while addressing environmental and economic concerns, but there is no doubt that geopolitical developments over the last year – Russia invasion of Ukraine and Israel invasion of Gaza – has pitched Energy Transition into a face-off with Energy Security.

Russia's war in Ukraine and Israel's massive onslaught of Gaza have implications far beyond the battlefield, including energy. The flow of oil, natural gas and refined products like diesel has been upended, leading to one of the largest shifts in the global energy market in decades as Energy Security soars to the top of the geopolitical priority list of many states. Europe's ban on almost all Russian fuel sparked a scramble for alternatives, not least from Middle Eastern Gulf producers, where three new refineries came onstream this year in Saudi Arabia, Kuwait and Oman. They could go a long way to helping Europe replace 600,000 barrels a day of Russian diesel once they reach full capacity in the New Year.

The International Energy Agency's recent report Oil 2023: Analysis and Forecast to 2028 reveals that world oil trade is experiencing an "unprecedented sea change" due to international embargoes on Russian energy



**Sean Evers**  
Managing Partner, Gulf Intelligence

exports. These shifts are unlikely to revert to the previous status quo in the foreseeable future, according to the report. With approximately 2.5 million barrels per day (mb/d) of Russian crude being backed out of Europe and G7 countries, and an additional 2 mb/d of products seeking new markets, global oil trade flows have been significantly disrupted. According to the report, the implementation of embargoes on Russian crude and oil products by the European Union (EU) and G7 nations, coupled with the price cap that enabled EU maritime services to redirect Russian oil to third countries, facilitated the rerouting of oil flows and minimized production losses in the global market. As a result, European refiners successfully sought alternative crude oil suppliers, with the US and the Middle East becoming

key sources. Furthermore, higher North Sea volumes remained within the region.

Multiple factors are evolving in parallel to develop and advance the East-of-Suez physical energy markets and most are a springboard for positive change – especially if they join forces to deliver liquidity and transparency. Some members of the Organization of the Petroleum Exporting Countries and its allies, known as OPEC+, are implementing 1.66 million barrels per day of combined voluntary declines – which falls outside of unanimously agreed OPEC+ policies – until the end of 2024. Topping this, Saudi Arabia and Russia announced they will apply respective voluntary declines of 1 million barrels per day of production and 300,000 barrels per day of exports until the end of the year. ■



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Port of Fujairah  
United Arab Emirates



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# CHAPTER 1

## MARKET OUTLOOK

# World Faces Energy Chaos & Economic Chaos Without More Oil Investment



**H.E. Haitham Al Ghais, Secretary General, OPEC**

**E**nergy security is at the core of OPEC's founding commitment to support a stable and sustainable oil market in the interest of producers, consumers, and ultimately the global economy. This issue has gained additional momentum over the past six years as OPEC has been working with other leading oil producing countries

through the Declaration of Cooperation. Together, we have been front and center in helping reduce volatility and supporting a balanced and stable global oil market. The importance of energy security and market stability is not only vital for the short term; it is critical for the long term too. This is clear when we look at the Energy

Transition and its intertwined issues on energy availability and affordability and the need to reduce emissions. In this regard, at OPEC, we take a fact-based approach to deliver an inclusive and realistic transition and sustainable energy future. Unfortunately, some people remain ideologically driven about the world's energy future, with a

narrative that fossil fuel demand will peak by 2030, and in some net zero scenarios, global oil demand drops to 75 or 80 million barrels a day. That is less than six years from now and yet, over that same period, it is expected that another half a billion people will move into cities. The OPEC World Oil Outlook 2023 shows global energy demand expanding by 23% between now and 2045. There is no credible way to address this without utilizing all forms of energy. And yes, renewables will have to play a

## Global Conventional Oil & Gas Investment 2023

**\$818bn**  
estimated investment in 2023

**\$100bn**  
estimated total investments by Middle East producers in 2023  
Source: Upstream Online

**\$610bn per year**  
total investment required until 2045.  
Source: OPEC World Oil Outlook, The National

greater role. OPEC members are already investing significantly in this area, but oil will remain integral in the future energy mix, at around 30% by 2045. Our outlook now estimates that oil demand will reach 116 million b/d by 2045. To meet this, \$14 trillion of investment will be required across the whole value chain. We believe that calls to stop investment in new oil projects, are misguided and will only lead to energy chaos and economic chaos.

## What triggered OPEC to revise oil demand upwards to 116mn b/d by 2045?

The global economy is expected to double in size compared to what it is today and population growth to reach 9.5 billion from 8 billion, by 2045. Oil is just one component of the energy that will be required to fuel all this growth. But in the last couple

of years, we've seen a shift in tone by some countries and governments around the world, pushing back on transition and emissions deadlines. What this all means is that there will be more use for oil, and for longer. So, we are encapsulating all of this in our updated numbers. The issue is how we decarbonize oil and how we get rid of the emissions. That's the main objective.

## Where would you expect to see investment come from?

Many OPEC member countries have continued to invest, even during the COVID period downturn of 2020 and 2021. As an example, the UAE is advancing its targets to increase production capacity to 5 million barrels a day by 2027. Saudi Arabia, Kuwait, Iraq, and Iran and Venezuela once sanctions are lifted, are all planning increases. OPEC will continue to invest because it's part of our mission and objective and we call on other parts of the industry to also do so – it should be a global responsibility.

## Any concerns about demand?

Again, it's important to differentiate between the short and medium term versus the longer term. We have built into our assumptions that Chinese economic growth will continue to be robust up to 2045. China, India, most of Asia, and the Middle East, will provide a big portion of what we see as year-on-year oil demand growth, whereas we will see a decline in the OECD advanced economies. ■



## Oil Prices Likely To Average Lower Next Year



Christof Rühl, Senior Research Scholar  
Center on Global Energy Policy, Columbia University

In my book, the global economy is doing well. We might get a soft landing in the US, and we will have growth in China of around 5%. The Chinese do have a lot of different problems but enough ammunition to spray water here and there on those, and the big gun of monetary stimulus if required. Of course, there's also a downside risk to supply in OPEC+. One country which as a percentage of its' production, has more cuts than anybody else because of rapidly expanding capacity is the UAE;

that's something which will be observed with interest as quotas are renegotiated next year. The world has enough oil, and so it takes sizable production cuts to keep the price where it is currently. Excluding any surprises to come, you would expect the price to come under pressure and I expect the average price in 2024 to be lower than in 2023.

We know that oil consumption shows a very, very, stable trend of 2% a year, in terms of the efficiency improvement

with which we drive our cars, heat our homes, and use oil for petrochemical production. If we take that very straight line, which has been around for the last 30 or 40 years, and allow it to continue another ten years, then you get peak oil demand before 2030 with the OPEC numbers on economic and population growth. So, I wouldn't exclude the IEA numbers even though we should remember that it releases scenarios only and not point forecasts, which makes them less meaningful. ■



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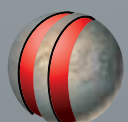
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# MERCURIA



# DAILY ENERGY MARKETS PODCAST

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Mike Muller, Head, Vitol Asia

**B**arring influence by political events, the outlook is ultimately shaped by the extent to which OPEC+, with Saudi Arabia in the driving seat, managing to contend with the hugely uncertain economic outlook for demand, especially in arenas like China. While it seems that global recession has been staved off and we're looking at various soft-landing outcomes, supply and demand have been

managed so that the marginal barrel of supply has allowed the oil price to move towards \$90 a barrel. Overall, the outlook would seem balanced as we go from stock draw to a more level outlook, with most variables on the demand side.

The next 12 months are challenging as there's plenty of fresh supply coming from non-OPEC, so OPEC+ will have to contend with a market that is balanced by that. But the

consensus among market consultants is that 2024 will see record demand despite the slowdown in economies in places like China and India, with growth in the Western Hemisphere also. So, if OPEC+ can hold production roughly in tune with the demand levels as they go, I see no reason why the market cannot sustain a decent non recessionary economy at the current oil price. ■



# Key Factors Shaping the Oil Supply Outlook for 2024?



**Kate Dourian, FEI**  
MEES Contributing Editor & Non-Resident Fellow,  
The Arab Gulf States Institute in Washington

**O**PEC oil policy, Chinese oil demand, the impact of sanctions on Russia's oil and gas industry, Chinese-US relations, have dominated energy market headlines in the past two years and continue to do so. And it would be impossible to ignore the ongoing conflict between Israel and Hamas that could spiral into a wider regional conflagration and the potential for disruption of maritime traffic through oil chokepoints in the Middle East and Asia. Oil prices initially rose

## Q3 2023 Russian Oil Exports

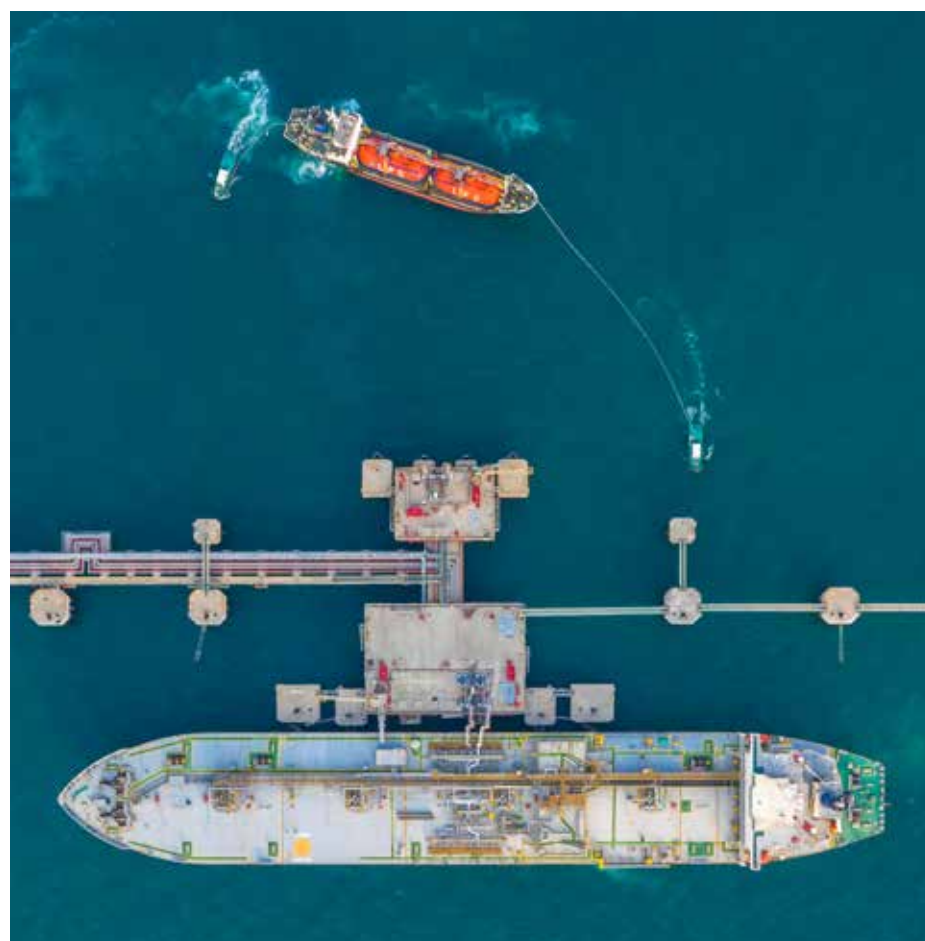
**18%**  
decrease to US/EU/UK

**14%**  
decrease to Middle East

**30%**  
increase to LATAM

**900%**  
increase to China via Bering Straits

Sources: Windward/Hellenic Shipping News



in response but settled back below \$90 per barrel as the market assessed that the risk of a supply disruption was minimal. These uncertainties along with continued and possibly tighter sanctions against Russia and Iran, pressure on the fossil fuel industry to decarbonize faster and the recent resurgence of geopolitical risk, have clouded the picture.

This was brought to light in the big gap between OPEC and IEA in their latest demand projections. OPEC's World Oil Outlook forecast global oil demand rising to 116 million barrels per day by 2045, or 16 million b/d above the current level. The IEA, however, projected that demand would peak at 102 million b/d before the end of 2030 before falling

**DARK FLEET**  
**300 to 600**  
total number of Dark Fleet Tankers operating in 2023  
- International Maritime Organization

Source: Safety4Sea

gradually to 97.4 million b/d by 2050. The discrepancy marks the first time the two organizations have diverged so widely in their outlooks. This makes it difficult for financial institutions, investors and policy makers to make informed decisions.

This year marks the 50th anniversary of the Arab-Israeli war of 1973 and the Arab oil embargo that caused what is known as the first oil shock. There have been comparisons with recent developments following Russia's invasion of Ukraine, which pushed energy security concerns to the top of the political agenda. Then as in 2022, oil prices rose to a record high and sent consumers scurrying to secure alternative supplies. So far, sanctions on Russia have not had a negative impact on its oil sector while Iran continues to export its crude oil in violation of US sanctions that are not being applied stringently by Washington.

## 2024 Oil Demand Outlook

**IEA 880,000 b/d**  
**OPEC 2.25mn b/d**

Source: OPEC October 2023 Monthly Oil Report

**The US has emerged as the world's top oil producer, outranking both Saudi Arabia and Russia, so it is less reliant on Middle Eastern and foreign oil. Today, it is Chinese oil demand signals that carry more weight"**

The oil market is now more global with a much wider pool of suppliers, including new entrant Guyana. The US has emerged as the world's top oil producer, outranking both Saudi Arabia and Russia, so it is less reliant on Middle Eastern and foreign oil. Today, it is Chinese oil demand signals that carry more weight.

On the supply side, Saudi Arabia, which sits on the majority of global excess output capacity, has the ability to turn the oil taps on and off as a swing producer. The market will be watching Riyadh's move to see if it will extend its voluntary 1 million b/d beyond yearend.

As the pace of China's oil demand growth is slowing because of a weaker economy and additional supply due to come from producers outside the OPEC+, it's likely that Saudi Arabia will maintain its output policy. That will depend on a number of factors including the US Federal Reserve's interest rate policy going forward. The spectre of recession that still looms over the US and the Eurozone is another consideration. A gradual easing

of output restrictions by the OPEC+ group next year might see Saudi Arabia boost output by 1.3 million b/d, though the increase might be lower.

The oil market has undergone a transformation since the oil shock of the 1970s and the balance of power has shifted as new trade and political alliances have been forged. As US influence in the Middle East has waned, China's has risen and a new geopolitical order has emerged, altering the balance of power in a region that is once again in turmoil. ■

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## Non-OPEC Supply Growth 2024

**13.4mn b/d**  
expected total output of US oil producers by end of 2024

**2.1mn b/d**  
projected combined increase in production in 2023

**1.2mn b/d**  
projected combined increase in production in 2024

Source: S&P Global Commodity Insights





## OPEC+ Cuts Have Been the Catalyst for Higher Headline Prices



**Dave Ernsberger, Head of Market Reporting & Trading Solutions, S&P Global Commodity Insights**

**W**e see a similar pattern of balances into 2024, but more in miniature. In 2023, the US added 1.4 million b/d of production capacity and China brought back more than a million b/d of oil demand. Next year, we see that cutting in half, with an extra 700,000 b/d of US production coming to market and about 450,000 b/d of demand recovery in China. So, the marginal outcome is the same, only smaller. Crude prices are

up \$25 a barrel in total since the OPEC+ production cuts came into effect; that's the big driver that's started to eat significantly into visible inventories over time and that's been the catalyst for higher headline prices.

### **Economic sentiment for Europe as winter approaches**

Europe has been fortunate to be able to afford the very high price that it's paid with the diversion of relatively affordable energy supplies – not just

oil, but also natural gas, and the replacement of that with relatively expensive sources. Higher interest rates will continue to layer pressure, but it has shown resilience. I'm not suggesting it's about to go on a growth spurt, but it's trading back on infrastructure projects where they're not needed. All of this ultimately depress growth in the long term, but I'm not necessarily expecting to see a huge recession kick in either. ■



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### Fundamental Demand To Keep Us at \$90/bbl



**Kieran Gallagher, Managing Director, Vitol Bahrain E.C.**

**G**lobal markets have found a way to work around distorted products flows. We have seen a couple of months of significant volatility in 2H 2023 in middle distillates, but markets have calmed a little bit. There's additional refining capacity coming out of the Middle East in the coming months. Elsewhere, we do still see a few distortions like the Russian export ban on diesel that caused volatility, but in the main for the first time

in many years, we can point to some significant refinery capacity coming to market that will perhaps add a bit of stability going into 2024.

Demand is looking quite healthy, but we need to remember that the run from \$85 to \$95 a couple of weeks ago happened quite quickly – there was a huge amount of managed money in that, which then came out of the market quite quickly again, when it hit \$95. Reaching

\$100 because of fundamentals would be questionable but demand is enough to keep us at \$90. There's a cautious optimism around China, with an expectation of generous government stimulus going into 2024. The bulk of oil demand forecasts do fall east of Suez again, primarily in China and India also. And in the OECD economies, there are certainly economic headwinds, but I don't think anyone is calling for a recession. ■

### G7 Economies Have a High Probability of Going into Recession



**Magid Shenouda, Deputy CEO & Global Head of Trading, Mercuria Energy Group**

**T**he market is fading the impact of these high interest rates and the implication on raising capital for producing assets, especially in regions that are not cash rich. I don't think inflation is under control. There are people trying to raise capital at 20 plus percent. It's just not sustainable. There is no capital that's available for this industry. The consensus from traders is that we are going

to see significant crude draws in Q4, and that prices will rise, but very few expect us to reach \$100. At the moment, the market is not pricing in an escalation in the Mideast conflict. Prior to the events in the region, volatility was running at about 15%. It then went to 32%, but the price action was quite muted. Of course, if the situation escalates further, prices could rise. ■







# How will Arbitrage Flows Evolve in 2024?



Jonathan Leitch, Director of Insight, Kpler

**T**he past months have seen crude markets remain supported amid a double whammy of rising global crude demand and declining supplies. The latter has largely come on the back of stronger OPEC+ management, with the group's largest producers – Russia and Saudi Arabia – announcing production cuts, and others keeping compliance strong. This has kept global balances tight, which has led to lower global crude stocks. Nevertheless,

we see trouble brewing ahead for crude markets, with a lengthening in the global crude balance expected to keep markets slightly oversupplied over the first half of next year. This will keep crude prices pressured, which in turn will call for further OPEC management, with our base case expecting Saudi Arabia to extend current production cuts into May/June of next year until balances begin to tighten once again.

### Non-OPEC Medium, Heavy Crudes to Keep Europe Well Supplied

While an extension of Saudi Arabia's unilateral production cut will keep global medium to heavy crude supplies tight, with around 80% of Saudi Arabia's crude production comprising heavier barrels, an expected ramp up in production across several Latin American countries, such as Guyana and Brazil, as well as rising supply from Canada, will offset a large

## Guyana and Brazil emerged as the two countries that have helped replace Russian barrels across Europe, with flows from both countries to the continent reaching new highs in 2023

portion of this and prevent tightness across medium to heavy crude markets. In fact, the latter three non-OPEC+ countries all produce medium to heavy grades, with Guyana's third FPSO, Payara, which will come on stream in November, expected to produce crude comprising an API gravity of only 28°. This is good news for European refiners, which have had to deal with expensive medium-density grades and tight middle distillate markets over the last year.

Guyana and Brazil emerged as the two countries that have helped replace Russian barrels across Europe, with flows from both countries to the continent reaching new highs in 2023. Considering that both countries will see a ramp up in production over the next twelve months, we can expect this trend to continue, keeping Europe well supplied. The expected increase in the availability of medium-sour grades across Europe will, however, keep sweet-sour spreads very volatile and medium crude differentials pressured. Additional downward pressure may come from an expected ramp up in crude demand in Nigeria, with the Dangote refinery closing in on its start-up date. Dangote is a complex refinery with a Nelson

complexity index of 10.5, and once fully operational, the plant will not only be fed by Nigerian and regional crudes, but also by imported grades in the 32-34° API range. Next to Forcados, Escravos, and Bonny Light, the feedstock mix should include grades from Angola (Cabinda, Plutonio), Gabon (Rabi), Sudan (Nile Blend), Middle East (Arab Light, Oman grade, Upper Zakum) or even Mexico (Isthmus).

### Refiners in Americas Ramp Up

This compares to the Americas, where we see a reshuffling in heavy crude markets, with Mexico's Dos Bocas starting up early next year and the TMX pipeline expansion coming online between Q1 and Q2 2024. We see test runs at the Dos Bocas refinery beginning Q1-2024, with an expected ramp-up in production from Q2-2024 onwards. Considering that the refinery will run on domestically produced grades, particularly heavy sour Maya, we see the availability of these grades declining over time, possibly even slightly before this, as Pemex may choose to fill its crude stocks in preparation for a possible ramp-up at the refinery. The ramp-up of the Dos Bocas refinery could spell trouble for US refiners that rely

heavily on heavy sour Maya, although a ramp up in imports from Venezuela may offset this entirely.

The decline in the availability of Maya will benefit crudes comprising similar attributes, which are also consumed across the region, such as Cold Lake Blend from Alberta. This is coming when we already see additional upside for the latter grade coming from the TMX pipeline expansion, which has recently received regulatory approval to deviate from its previous route. This decision will help speed up construction by several months, and we expect to see the pipeline expansion project commence between Q1 and Q2 next year.

Even though the rise in competing grades from Venezuela will add some downward pressure to Maya and WCS Hardisty differentials, we see prices for the Canadian benchmark remaining robust as large amounts of the grade will be shipped to the USWC, a region that Maya typically does not flow to (may reach 30-50 kbd sporadically). One grade that does flow into the USWC, however, is Ecuador's heavy sour Napo, which probably be partly displaced by Albertan crude and pushed to other destinations next year, with a likely destination being China. ■

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## SAUDI ARABIA

### *Macro-economic Outlook in 2024*

Insights by Jadwa Investment

**T**here is intensive speculation around Saudi Arabia's oil production stance: specifically, when it might begin to unwind the 1 million b/d cut to output made earlier in the year. We believe that the Kingdom will remain cautious, given its concerns

about the darkening economic outlook in the US, Eurozone and China. Thus, we think that the Kingdom will delay reversing the cut until the US Fed is in rate-cutting mode, which would lend support to risk assets, including oil. This easing is unlikely to occur before the

second half of 2024.

While on the subject of oil policy, we would caution investors against getting hung up on Saudi Arabia's budget "breakeven" oil price. Such a price is difficult to pin down given that it is determined in part by how much oil revenue

Aramco decides to withhold for its own investment purposes (and this changes from year to year). Its importance to domestic economic activity has also been diluted by the Public Investment Fund's own spending, which is less wedded to oil prices. And, the authorities now appear content to run fiscal deficits in the medium term as they push on with Vision 2030 investments—that at least was the projection in their pre-budget statement for 2024. All in all, the notion of a breakeven price is both hard to define and something of a red herring.

Turning to domestic economic activity, while overall GDP growth has been dragged down by the oil output cuts, there is no doubt that the nonoil economy is booming. Non-oil GDP grew by 6.1% in the second quarter, year-on-year, a significant pickup on the 5.4% registered in Q1. Despite the attention accorded to the Kingdom's "giga projects", the main growth driver is consumption, which in turn is being supported by female labor force entry, greater financial inclusion, and a buoyant tourism sector. Indeed, tourism is set to be one of the main success stories of the Vision 2030 project. The authorities have relaxed restrictions around religious tourism, allowing them to spend more time – and money – in the Kingdom, while also intensifying marketing efforts targeting GCC and European tourists. Tourism earnings climbed to a



**Tourism earnings climbed to a record \$12 billion in the second quarter and have much further room to grow given the rollout of tourist infrastructure and entertainment options"**

record \$12 billion in the second quarter and have much further room to grow given the rollout of tourist infrastructure and entertainment options.

At Jadwa, our main concern with the Vision 2030 agenda is financing. Banking sector deposits are around \$650 billion, which is simply not enough to fund all the projects in the program. Foreign direct investment inflows have disappointed, with potential investors still wary of an investment environment that can get tangled up in red tape. Foreign inflows into the stock market have likewise been underwhelming, with investors usually citing a lack of liquidity in the Tadawul. Despite having the region's biggest market capitalization, the Tadawul's

turnover is low, mainly because of the PIF's substantial holdings of stock that it seldom trades. This leaves debt as the most realistic tool for raising the necessary capital. Saudi Arabia's external debt stock is extremely low, with sovereign debt at less than 10% of GDP, leaving plenty of "headroom" for additional issuance. Granted, interest rates are higher than they were, but are set to soften in the second half of next year. Greater use of government guarantees could also help to get difficult-to-finance infrastructure projects moving. There is no shame in using the public sector's balance sheet to galvanize economic development if the private sector is unwilling to: that is, after all, how Japan and South Korea got their economies moving. ■

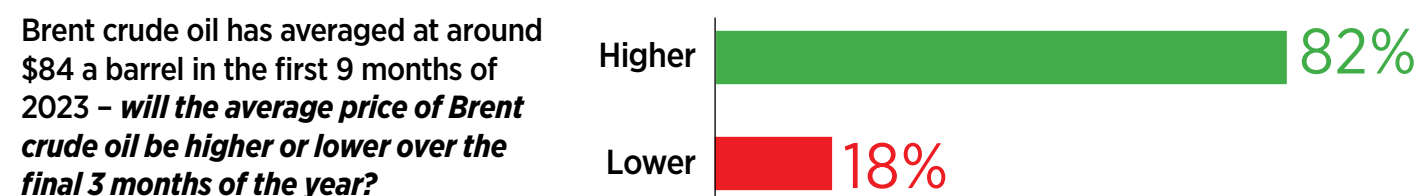


### SURVEY

# Taking the Market's Pulse amid Geopolitical Upheaval

Exclusive results from 250+ senior stakeholders in the Middle Eastern energy market

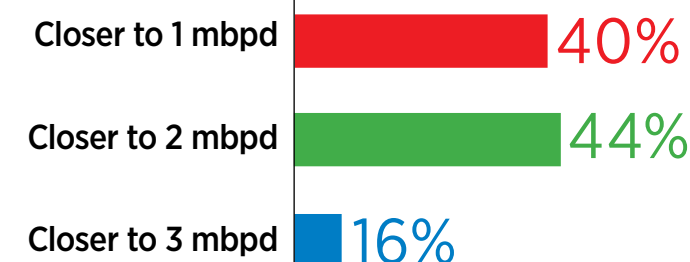
- Peter McGuire, CEO, XM Australia
- Marc Ostwald, Chief Economist & Global Strategist, ADM Investor Services International



**PETER** That 82% really demonstrates what we've seen in the last couple of months, which has been a huge move to the upside since the start of July. And then we gave back some of that gain when it hit \$95. There are so many moving parts to this equation in terms of how we look at the next two months leading into the end of the year. But I won't be surprised if \$95 to \$100 is very achievable considering market sentiment, the geopolitical war premium built in, and overall bullish tones to the upside.

**MARC** The result doesn't surprise me. For the bulk of this year, we've been focused much more on demand and now we've started swinging back to looking at supply, for example with people asking questions about the excess supply which has been available from Iran. I still think the demand factor is there though and the other thing which worries me a little is the derivatives market, in that there is a very strong skew to this survey result, even if some of the froth had been taken off. So, I think what we're in for higher levels, but in a very, very choppy market.

World oil demand is expected to grow by 2.4 million b/d in 2023 but next year forecasts are indicating it could be half of that – closer to 1.2 million b/d – *what do you expect world oil demand growth will reach in 2024?*



**MARC** The first thing to observe is that most of the forecasts for this year were wrong, and they'll probably be wrong next year. But the fact of the matter is that Chinese oil demand has been extraordinarily high and held up. Whether that remains into next year is a different question, but I would still expect we could get an upside surprise. On the other side of the coin, the only thing which we have got right this year is that Europe is headed for a recession. There's no question about that. There are fundamental issues in transitioning Europe. It's not a competitive environment. The US is doing well

Oil demand will soar 15% to 216 million barrels over the next two decades. This forecast comes a few weeks after the IEA said oil demand would peak by 2030. *Do you think these forecasts are based more on concrete research data with the rise in energy security priorities, or the politics of the Energy Transition?*

**MARC** That result certainly surprises me. I think the different views that we get every month from OPEC, the EIA and the IEA are basically always a function of local specifics. The IEA forecasts are heavily influenced by Europe, which wants to be seen to be doing the right thing in terms of Energy Transition. I would lean more towards the OPEC forecast than the IEA, simply because you don't see the scaling up or incentives in Europe; it's all stick and no carrot and so hydrocarbons are also going to be ruling the day for a lot longer than European governments would like.

and is probably going to be better than most people are expecting. I still see the fundamental problem is that we want more in the way of Energy Transition, but there isn't any capacity, there isn't any scalability and any demand pull that we've got is going to have to be met by traditional hydrocarbons. We are vulnerable to supply disruptions and so the supply side is going to be absolutely key, but the demand side should also hold up better than most people think.

**PETER** We're very conscious about interest rate policy and inflation and whether we are at the end of the rate cycle. If we look back to nine months ago, we were saying there'd probably be rate cuts starting now, but there is a big chance you're going to see a rate hike in November. How that impacts GDP, demand and equity prices is a question but when you look at the general demand picture in the US, and in China, India and Africa, I just see exponential growth. OPEC's 116 million b/d demand forecast for 2045 could possibly end up being conservative because there's probably even more demand that we've got to be realistic about. Shorter-term, I think that 2024 is going to be a relatively strong year.



**PETER** That result is a surprise. I think the mood in Asia is a very different mindset to Europe. If we look at countries like Indonesia, Malaysia, China and India, which make up such a huge component of the world population, that can't be dismissed, in addition to emerging economies in Africa or South America - they will all want mobility. When we look at consumption patterns and data sets, we should be mindful that it's easy to get it wrong, quite simply because we're looking at current data and there are so many inputs that need to be considered to get to that end result. ■



# CHAPTER 2

## UAE AND FUTURE INDUSTRY



# Fujairah is a Frontrunner to Become One of the UAE's Hydrogen Oases



H.E. Sharif Salim Al Olama, Undersecretary for Energy and Petroleum Affairs, UAE Ministry of Energy & Infrastructure

The UAE anticipates that by the year 2031, we will be producing around 1.4 million tons of hydrogen per annum - both green and blue. We are taking measurable steps in terms of delivering what we anticipate will be a major contributor to our vision for diversifying our energy mix. We have around seven projects that are currently at different levels of maturity. Today, there's only grey hydrogen in our

refineries and the quantities are very limited. But we have test sent blue ammonia cargoes to Europe and Japan through ADNOC. We are also working on studies to produce pink hydrogen, capitalizing on the heat from our nuclear reactors. As part of the hydrogen strategy, we have identified hydrogen oases - one in Ruwais and one is KIZAD, Abu Dhabi. I see Fujairah as a frontrunner to become one of these future

hydrogen oases. It is the third biggest bunkering port in the world, with significant storage facilities and has all the infrastructure required to enable hydrogen. Fujairah's geographical location and access for shipping routes is also key; it could allow us to import all the equipment we need to produce hydrogen and allow us to export to the likes of Japan, South Korea, and others. Today, only blue hydrogen is

While the UAE's energy infrastructure is highly advanced, it continues to evolve as the country pursues its strategic goals of energy diversification, sustainability, and economic diversification away from a heavy reliance on fossil fuels – *should the UAE integrate the country's legacy energy infrastructure with the development of the new low-carbon energy infrastructure?*



Source: From 250+ delegates EMF

economically feasible, so this is where we are going to start, eventually transitioning into green as we've seen done in Europe.

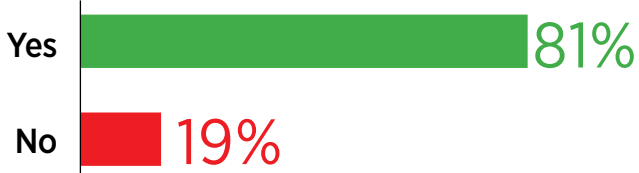
**Main challenges to the UAE developing a hydrogen hub?**  
One has been cost. When the UAE started with renewable

energy back in 2006, the kilowatt hour was around \$33. Today, it's about \$1.32, so a big improvement. That is critical for green hydrogen because you need cheap energy to produce that. Today, green hydrogen is sold in the market at around \$6 to \$8, which is still excessive. We are trying

to find solutions through R&D to bring that cost down. The other challenging aspect is transportation and distribution. From a customer perspective, the UAE has established many international partnerships with countries like Germany, Japan, India, and South Korea. By 2030, Japan will require around 2.1 to



The updated UAE Energy Strategy aims to promote the deployment of renewable and nuclear energies, enhance energy efficiency, increase local clean energy capacity, and encourage investments in the country's renewable and clean energy sector – *Will existing industries be held accountable to decarbonize their activities as part of the 2050 national strategy?*



Source: From 250+ delegates EMF

“Today, green hydrogen is sold in the market at around \$6 to \$8, which is still excessive”

3 million tons of hydrogen, rising to 12 million tons by 2040 and up to 20 million tons by 2050. And you could multiply those amounts two or threefold for India. We are exchanging information on technologies with these countries and understanding what policies and regulations they have established for a hydrogen economy. Certification is another important factor. Eventually, when we are to export hydrogen, these requirements need to match with the importing country. We are talking to international organizations like the IPA and also the EU Commission, to establish a standards certification process to enable us to export.

**Is integration of UAE infrastructure required for realizing these ambitions?**

We have seen different approaches taken by ADNOC such as storing CO<sub>2</sub> in salt domes, in aquifers and even

Several GCC countries have interconnected their power grids to facilitate the exchange of electricity, along with some cross-border gas pipelines – *should the UAE prioritise integrating the national energy network, infrastructure and power grids across the seven Emirates to ensure industrial development across the country?*



Source: From 250+ delegates EMF

using CO<sub>2</sub> for mineralization and injecting it into rock formations. Today in the GCC, we have an Interconnection Authority (GCCIA) that provides three major benefits - emergency support, a reserve spending reserve and electricity trade. We took that model and recently announced the formation of an electricity market in the UAE with four major authorities. The idea is to allow trade and competition between these authorities to bring down prices and be more efficient. This is just the first phase. We want to expand further to heavy industries that consume a lot of power and give them the opportunity to buy the cheapest and most efficient power available in the market.

**Will there be stricter decarbonization requirements for industry going forward?**

The UAE has launched a demand supply national management program which includes four sectors - industry, transportation, buildings and agriculture. The target is a reduction of 40% in power consumption and 50% in water consumption, which would save the country around AED 226 billion by the year 2050. As example, in the transportation sector, we have huge plans to develop infrastructure for EVs so that they can reach 50% of the country's total car fleet by 2050. In the industry sector, we have done a comprehensive study on the 50 biggest plants in the UAE and put ten recommendations on how they can improve their energy efficiency. ■

# Scale & Distribution Key to Hydrogen Industry Success



Robin Mills, CEO, Qamar Energy

We need to bring down the cost of producing both blue and green hydrogen. It's about building an industry. Today, green hydrogen is less than 1% of global hydrogen production. The first challenge is scaling up and doing what the UAE and others have done very successfully in solar power and wind. The transport side of hydrogen is even more challenging. The Middle East is not going to be a centre of sending pure hydrogen to Japan and Europe. The real opportunity here is producing a product that generates a

much broader based economic growth. Ammonia is the first step. It is a fertilizer but can also be a fuel for green steel and other green materials, methanol, and chemicals - all kinds of downstream products which are much easier to transport around the world and that also generate much more value locally. It's going to be a competitive business. Green hydrogen needs open land, sun, port access. A lot of countries have that – the UAE, North Africa, Australia, parts of South America. So, to be a winner, you have to create advantages – in infrastructure,

good regulation, technology, access to finance.

**Decarbonisation Accountability**

It's a very serious commitment within government companies. Everybody sees where they have to be - by 2030, 2040 and 2050. There are some elements of a strategy for hydrogen and carbon capture, which will serve the power sector and industrial sector. The price element is also critical to give the right incentive. There's likely to be a carbon price in the UAE of some kind, for hydrogen and carbon capture and storage. ■



# East of Suez Markets and the Role of Fujairah

### Shifting Trade Flows

Traditional oil arbitrage flows have shifted dramatically since the onset of sanctions and price caps on Russia. Urals crude used to head to Europe, but this has all but ceased. Russian crude and product exports to the UAE rose from 13.35 million barrels in 2021 to over 60 million barrels in 2022. Gasoline exports almost doubled from about 22,000 b/d to 40,000 b/d January to August this year, while gasoil exports rose almost five-fold from 10,000 b/d to 52,000 b/d. Indian and Chinese refiners have been buying discounted Russian Urals, and refining and selling it as gasoil exports, particularly to Europe, where the shortfall is found. India's economy and demand for crude is expanding, with its multi-faceted renaissance industrialization benefiting from the investment pivot by western countries, looking to reduce their reliance on China as a manufacturing center. Fujairah is well positioned to handle these opportunities of increased flow volumes to the new centers of incremental global economic growth east of Suez.

### Infrastructure for Alternative Fuels

Demand for HSFO, VLSFO and gasoil bunker fuel demand from Fujairah is set to grow unless it is replaced by alternative fuels. LNG bunkering has potential in the medium to long term, along with methanol, ammonia, and green hydrogen, but regulations and tax regimes are key for decisions to be made. Ethanol and ammonia would require an expansion of the existing installed infrastructure capacity in Fujairah. Port jetty infrastructure also does not yet cater for these commodities – only mainstream fuels. Cruise liners are starting to have more bunkering demand for alternative fuels, but it is mostly bulk carriers that use Fujairah as a port today and those are likely to stay on fossil fuels for a while. In addition, investments in alternative



bunkers of any kind, would require long-term offtake contracts and a clear line of sight on size of demand.

### Unlocking Sustainable Finance for the Energy Transition

To attract funding for clean fuel technologies, countries should use data to generate a baseline for the reductions being made in carbon emissions and improved efficiencies. In an ideal world, nations can strive to build a basket of energy sources - oil and gas, solar, wind, hydrogen, nuclear – earning carbon credits and therefore attracting finance from international consortiums of investors. The UAE is a good example of a country that both invests outwardly and receives FDI for Energy Transition technologies. China has become a leader in investment for electric vehicles, battery technology and solar panels and will be ideally placed to make similar sustainable investments in emerging economies of the Global South that need it most. ■

*Content harvested from Roundtable hosted by*

**S&P Global**  
Commodity Insights

**S&P Global**  
Commodity Insights



As climate goals loom closer, a lot hangs in the balance. You need to know that the decisions you make today, can drive rapid decarbonisation - and keep your business thriving. At S&P Global Commodity Insights, we know that to be part of the energy solution, we must work together. Our interconnected Essential Intelligence brings you the complete view of global energy and commodities markets. So you can feel confident that every move you make, powers progress.

Power progress today.

**Seek & Prosper™**





*"The Port of Fujairah's significance cannot be overstated. Its strategic geographical position and cutting-edge infrastructure have been invaluable. ADNOC's onshore 360-kilometers crude oil pipeline from the Habshan oil fields in Abu Dhabi to the ADNOC underground strategic stocks oil storage in Fujairah, is testament of the existing synergy between our organizations. In short, the growth narrative of Fujairah and ADNOC are intrinsically intertwined, promising a future teeming with mutual growth, innovation, and success."*

**Philippe Khoury, Executive Vice President, Sales & Trading, ADNOC Group**

*"Our oil terminal in Fujairah has really been a turnaround story and it has become one of the top performing terminals in the market. We were very comfortable making the investment in Fujairah because of the significant and more importantly, very well-structured growth that's been shepherded by His Highness, the Port of Fujairah, and the Fujairah Oil Industry Zone."*

**Tyler Baron, Chief Executive Officer, Minerva Bunkering**



## Measuring Emissions Critical First Step to Achieving Net Zero Targets



**Hatem Al Mosa, CEO, SNOG**

**T**he UAE has set 2050 as its target date to achieve net zero. Our target at SNOG is 2032, which is ambitious. As one step, we plan to build our own 60-megawatt solar power plant. We have also initiated studies on how to convert our gas consuming equipment to run on electricity. To be able to achieve net zero, we must also be able to measure emissions today and have them verified and reported by independent parties. SNOG has issued a GHG emissions report for 2021 and 2022 internally, to establish a baseline and we're in the process of getting it verified by an independent third party, after which it will be published. We hope to set

an example for the industry on transparency of emissions.

### **Integrating Gas Storage Infrastructure**

Sharjah has its own gas storage facility and plant that's designed originally to manage the variations for seasonal demand and supply for SEWA. But ideally you also want to make this available for the entire country's energy security. Ras Al Khaimah has its own gas demand and supply variability issues. So, with our recent agreement with RAKGAS, RAK will have access to Sharjah's gas storage facilities to retrieve gas when they need it. ■





### Collaboration Will Enable UAE to Shape a Sustainable, Energy Efficient World



H.E. Saif Humaid Al Falasi, Group CEO, ENOC Group

It is important to identify opportunities and challenges within the energy sector locally and regionally. Energy is the lifeblood and cornerstone of our modern society. At ENOC Group, we work across multiple segments and ensure that demand is met across every aspect of the energy value chain. This includes processing feedstock into products such as jet fuel, gasoline, diesel, naphtha, LPG and much more. These are usually stored at our terminal and marketed to a diverse customer base across the UAE and internationally. This showcases our commitment to elevating the

national energy resources that will benefit UAE residents, while we actively work towards a more sustainable and eco-friendly future. As we explore the latest trends in the energy markets, from the transition to renewable resources, and to the complication of supply and demand, let's keep in mind the UAE vision - not only as an energy leader but also as being responsible for our planned future. Together through collaboration, we can learn from this pioneering effort and continue to drive progress and shape a more sustainable and energy efficient world. ■



## Delivering the world's energy needs today and tomorrow

Vitol is a leader in the energy sector with a presence across the spectrum: from oil through to power, renewables and carbon. Chartering circa 6,000 sea voyages every year, it trades 7.4 million barrels per day of crude oil and products, 13.7 million mt LNG per annum and has contracted sales of 1,500 TWh of natural gas each year.

Vitol's clients include national oil companies, multinationals, leading industrial companies and utilities. Founded in Rotterdam in 1966, today Vitol serves clients from some 40 offices worldwide and is invested in energy assets globally including: gas to power production, thermal and renewable power plants with circa 1.2 GW of capacity, more than 17 million m<sup>3</sup> of storage globally, 500,000 barrels per day of refining capacity, over 7,000 service stations and a growing portfolio of transitional and renewable energy assets. Revenues in 2022 were \$505 billion.

[vitol.com](https://vitol.com)



# Major Milestones in Murban Futures in 2023

## Insights by ICE Futures Abu Dhabi

ICE Murban Crude Oil futures, based on ADNOC's flagship crude oil, began trading on ICE Futures Abu Dhabi (IFAD), located in Abu Dhabi Global Market, in March 2021 with the support of ADNOC and nine of the world's largest energy traders. Since then, the contract has continued to grow, reflecting how customers are finding value and liquidity in the markets ICE has worked to develop.

Volumes in ICE Murban futures have been strong in 2023, up 68% year-over-year, with open interest up 9%. The contract hit a series of trading records in July and August 2023, with 252,549 Murban contracts traded during August. Murban futures also reached their second highest trading day since launch, on August 3, 2023, with 17,084 contracts traded.

These volume records are part of the 4 million Murban crude contracts that have traded since the launch of IFAD, equivalent to 4 billion barrels of the crude oil. The contract is traded by a participant base of over 140 from across the US, Europe, Asia and the Middle East, demonstrating the global audience for Murban today.

Additionally, moving the official selling price for Murban to forward pricing based on ICE Murban futures has helped to open the crude to a wider range of participants worldwide. To see Murban trading at these record levels shows how the market is utilizing the futures contract and the price signals it sends, as well as using it as a mechanism to deliver Murban barrels.

Each month, customers use the Murban futures contract to take physical delivery of Murban crude from the ADNOC Terminal in Fujairah in the UAE. At the July expiry, 11 million barrels of Murban crude headed for delivery, the second highest since trading began.

The contract complements ICE's global oil complex of over 700 futures and options contracts, covering multiple geographic locations. This provides participants with delivery at the point of consumption, capital efficiency and inter-commodity spreads between ICE exchanges. ■

## MURBAN CRUDE TRADE

**4mn**

Total Murban crude contracts traded since launch of ICE Futures Abu Dhabi

**4bn**

Total barrels of crude oil traded since launch of ICE Futures Abu Dhabi

**140**

number of countries participating in trading



# CHAPTER 3

## THE ENERGY TRANSITION





# COP28 – Hopes And Expectations



**H.E. Dr. Nawal Al-Hosany, Permanent Representative of the UAE, International Renewable Energy Agency**

**O**ne of the core pillars of the UAE COP Presidency will be fixing finance. There are commitments that have been made for years and decades, that have not been

fulfilled; we want developed countries to honour those. The UAE has demonstrated what financing and creating real solutions for climate mitigation can do. We are an oil and gas

leader country, but we also want to maintain our leadership in the whole energy sector. As an example, we knew very early on that renewables would be part of the energy mix. Today,



Masdar is one of the biggest renewable energy companies in the world, investing in the UAE and abroad. That investment in leading edge technology did not only create solutions and opportunities, but also led to the acceleration of adoption of renewables around the world. Today, we have renewable energy such as solar, cheaper than traditional energy sources. Technology will only advance if you make the right investment in research and development and in large scale solutions and projects, and by creating the financing mechanisms that make those solutions viable.

**Do countries participating in COP accept that not 'one size fits all'?**

We have always said that it needs to be a just transition. What works as a solution for

**We want to cut emissions, but not growth”**

renewables in the UAE, does not necessarily work for other countries. Geothermal energy works in Iceland but does not work for countries that don't have the same environmental conditions to pioneer those solutions. We must create a road map for different countries in different ways and we need to understand what those differences are.

**Is there coordination within the energy sector on a cleaner energy pathway?**

The sector has always been about competition, but when we started talking about decarbonization, it became a collaboration. We now see CEOs personally committing

to decarbonization. The sector understands that it needs to collaborate on a sustainable future. GCC governments now see clean energy solutions as opportunities to create new jobs and grow their economies. We want to cut emissions, but not growth. Policy frameworks should also enable an investment environment for private companies. The private sector also can't succeed without the support of international financial institutions. And lastly, the sector should engage with society. Most companies are investing heavily in spreading awareness and educating the public on the work they are doing as part of the Energy Transition. We have a very well-informed global customer and well-informed youth nowadays, who are very selective on the sectors that they are going to engage. ■



# PORT OF FUJAIRAH

## – Protecting the Environment?

Insights by Fujairah Oil Tanker Terminals

Strategically located on the Eastern seaboard of the United Arab Emirates, approximately 70 nautical miles from the Straits of Hormuz, Fujairah continues to be a key shipping hub for the UAE and wider region. It acts as an economic link between east and west, opening up the markets of the Indian subcontinent and East Africa to local and international goods.

The Port of Fujairah is the Middle East's premier hub and trade location for liquid bulk cargo products, from crude oil, gasoline, diesel to bunker fuel and lube oils. Its strategic location attracts Gulf and international NOCs, IOCs and global traders. They value the state-of-the-art infrastructure, economies of scale, the wide range of independent liquid bulk storage terminals and other service providers. It is also known to be one of the top three bunkering hubs in the world.

By playing such a vital role, the Port had to fulfill its commitment toward protecting the environment, which has been one of the main derivatives when it came to operating the facilities. The Port of Fujairah has been implementing many initiatives in line with the UAE

**The Port of Fujairah has been implementing many initiatives in line with the UAE vision to reduce the carbon footprint without affecting the sustainability of business”**

vision to reduce the carbon footprint without affecting the sustainability of business.

One of those initiatives is the concept & design of the Matrix Manifolds at Fujairah Oil Tanker Terminals (FOTT). The Matrix Manifolds were designed in a way to connect all storage terminals with a minimum number of oil berths, with full connectivity between them. The design was based on many factors which included, but was not limited to, pollution protection and spill prevention. This prevents the release of harmful fumes with enhanced control over emissions. They also protect against oil spills as these are closed systems with full containment which facilitate the collection of rain & washing water.

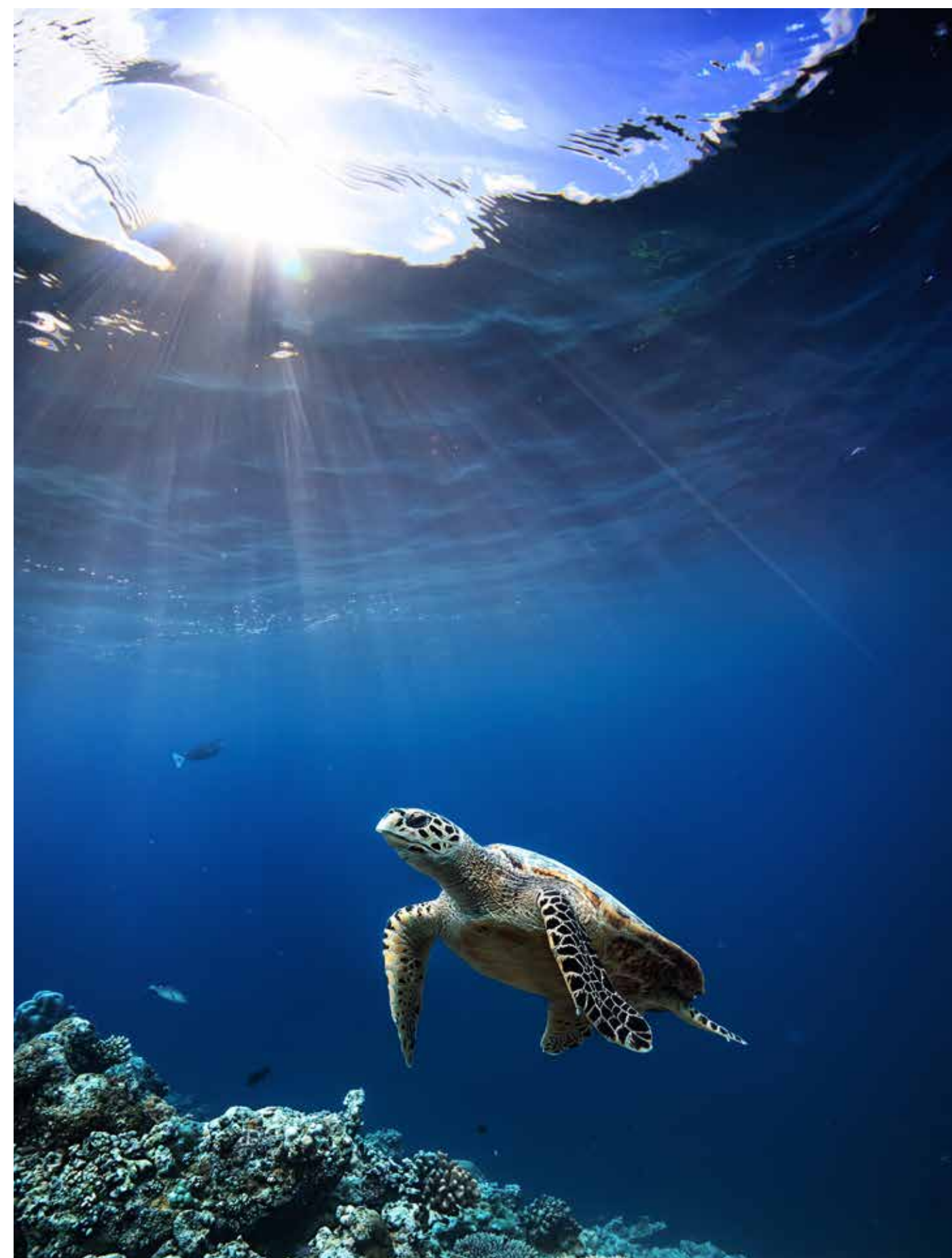
Banning the discharge of soot from ships with open loop scrubbers in Fujairah waters is also one of the important initiatives which was necessary to protect the marine life. Another initiative was building

a dedicated green service harbour for the Port's crafts and service boats, providing shore power and a sewage reception facility.

Furthermore, the port replaced all traditional lighting around and inside the port with LED lights which helped in reducing electricity usage.

The port has also been implementing the idea of transformation toward digitalization by moving from paper-based processes to a digital workflow. One of the key factors to achieve this is the initiative of establishing a port community system.

The ports future tugs will be a hybrid type that are fuel-efficient which operate using electric motors and diesel engines. Hybrid tugs help in reducing fuel consumption, minimizing the release of greenhouse gases and ultimately reduce air pollution, especially when charged by renewable energy sources. ■





# GCC Positioned to Act as CO<sub>2</sub> Storage Hub



**Dr. Yousef Alshammari, CEO & Head of Energy Research,  
CMarkits & Senior Research Fellow, Imperial College London**

**W**e have seen some amazing technology demonstrations in Saudi Arabia, the UAE, and Qatar on the feasibility of CO<sub>2</sub> storage at very economic levels. In fact, the region can act as a major hub for this, for CO<sub>2</sub> capture, and as a carbon sink for major economies of the OECD. OPEC has said that we need \$14 trillion of investment in oil by 2045. My view is that we also need to see investments in clean oil to be able to achieve Net Zero targets within oil and gas as a part of the

transition path. All stakeholders will need to participate, and this is an important opportunity for oil and gas companies to grab at the next COP28 in this region.

For the Energy Transition to happen, we should follow a sustainable oil and gas path.

The oil and gas industry has always been essential for the growth of economies. We need all stakeholders at the table, including fossil fuels which make up more than 80% of the global energy mix, to solve climate change. There

are many technologies that can be deployed, including in carbon capture and hydrogen. The progress achieved in carbon capture has been very slow, mainly because there's a weakness in how to support it at all levels, both in the government and private sector. We haven't seen enough of a push on regulation or on implementing the necessary tools for projects to be economically viable, bankable, and financed so that the technology can be scaled up. ■

# ACCELERATING TOWARDS NET ZERO

Marking a new chapter in ADNOC's transformational journey to a lower carbon future, we have brought forward our Net Zero ambition to 2045 and aim to achieve zero methane emissions by 2030.





## NAVIGATING RISK AND EFFICIENCY

### *The Role of Logistics and Marine Assurance in the Oil and Gas Industry?*

**L**ogistics and marine assurance play a crucial role in the oil and gas industry to ensure the safe and efficient transport of hydrocarbons from production facilities to refineries or distribution points. While

supply chains have become more resilient, any disruptions can still have far-reaching consequences on energy security, economic stability, and geopolitical relations. Increasingly stringent environmental regulations are

requiring oil and gas companies to reduce their carbon footprint. Logistics plays a critical role in optimizing routes and transportation modes to reduce emissions, while marine assurance ensures compliance with

environmental standards, such as emissions controls and ballast water management. Climate change is also challenging operations due to the increasing variability of weather conditions. That implies the necessity of the adoption of advanced safety protocols and flexible and adaptable work environments to ensure continuity of supply. Just as oil and gas companies have set targets, road maps and strategies to reduce emissions, so too should logistics companies and all the stakeholders involved, demonstrate a commitment to sustainability.

#### Collaboration on Future Fuels

The opportunities for transitioning to sustainable alternative fuels in shipping are vast. There has been ample investment into proven technologies in biofuels and various other feedstocks but there's still a way to go for fuels such as hydrogen and methanol. One sticking point is a lack of common standards in infrastructure for handling different carriers that use different fuels. Companies could collaborate more on technology so that they drive towards common standards, enabling them to move more quickly to cleaner energy fuels together.

#### Optimisation, Digitalisation

Advanced data analytics and digital technologies can play a key role in helping to reduce costs, optimise operations and improve efficiencies in the maritime sector. One challenge lies in the disparity between older vessels which may be going out of service, versus investment in newer fleets. Ports and docking systems are also becoming more advanced; the Fujairah manifold matrix is a case in point, handling several terminals, but this can represent both an opportunity and a challenge. Also, some ports are unable to manage ships which are above a certain deadweight, while others can. Such issues of compatibility in infrastructure need to be resolved. The tendency is for ports to be more strategic in their investment, but they also need to think commercially like industry and digitalize or else they run the

risk of customers possibly turning elsewhere. Still, while digitization should be embraced to maximise HSE and operational efficiencies, we must remember that this is a transition and cannot happen overnight.

#### Dark Fleet Risks

There's always been a 'dark' or 'grey' fleet in play, but the sanctions on Russian oil have accentuated those volumes. It has also highlighted how vessels being used for those voyages are not part of the regular inspection program, so standards might be slipping. They tend to be old ships that would otherwise be scrapped, increasing the probability for a major environmental event to occur. And that in turn hikes insurance rates for all maritime fleets.

#### Cohesion in Regulation

Policies are changing fast in different sectors of the energy industry. As the maritime industry is extremely fragmented, it makes regulation more complex. One dynamic is that today, 70% of tankers are owned by investment houses, whereas previously, the sector was predominantly family-owned which made for a more cohesive approach to adopting change. Regulation is critical to push a somewhat resistant industry in the right direction, but timescales and targets should also be set in a realistic manner. ■

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# How to Finance Increasingly Complex Energy Markets?



**Marc Ostwald, Chief Economist & Global Strategist,  
ADM Investor Services International**

**T**oday, 82% of global power supply is hydrocarbon sourced. The challenge of trying to find a balance between boosting financing for the transition to renewable energy, while ensuring that upstream and downstream investment for hydrocarbon supply remains sufficient to ensure that oil and gas prices do not spike, is immense. This was never going to be easy, but with the sharp upward shift in interest rates and input costs, high levels of government debt, fracturing global trade and supply chains allied with deepening geopolitical tensions, it has become even more complex.

The real challenge for renewables is that prior transitions from wood to coal to oil were driven (over time) by the fact of lower costs and greater reliability and efficiency, which at the current juncture is simply not the case with renewables. The tobacco industry has survived despite a hostile regulatory and financing environment, and one might add that the current 'big oil'

M&A mania does not suggest any serious financing hurdles in the hydrocarbon sector, even if increased consolidation also implies lower E&P in the medium-term, above all to mitigate some of the risk of 'stranded assets'.

### Calls for Hybrid Financing

By contrast, the task of raising finance for renewables faces a complex array of issues. Traditional bank finance typically looks for evidence of long-term contracts, and by extension cashflows on which to secure lending, or alternatively assets. But with renewable technologies either in their infancy or still in relatively early stages of development, long-term contracts are few and far between; the longer-term pricing trends are largely

unknown, as is the shelf life of any given asset, with the risk of technological developments superseding early-stage projects, and such infrastructure projects are also capital intensive. Therefore, there is a clear need for innovative hybrid financing to meet these challenges, but also to establish a much clearer regulatory backdrop, as well as suitable fiscal incentives. In that respect, it is generally agreed that divergent regulatory trends in Europe and North America run the risk of creating a minefield which will likely impede progress in implementing the energy transition. In fashioning suitably balanced incentives, it can also be said that the US Inflation Reduction (IRA) and indeed the CHIPS acts, offer a lot of 'carrots' and not enough 'stick', and that the EU directives have too much stick,

and not enough carrots, in no small part because the latter is in the provenance of national governments. Supranational development banks are and will be critical in the provision of finance, and governments could also look to set up national energy transition and infrastructure banks, and might look to repurpose central bank QE holdings as seed capital. Central banks might also consider easing capital requirements on bank lending for the energy transition as an incentive, though this would have to be rigorously supervised. ■



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# CHAPTER 4

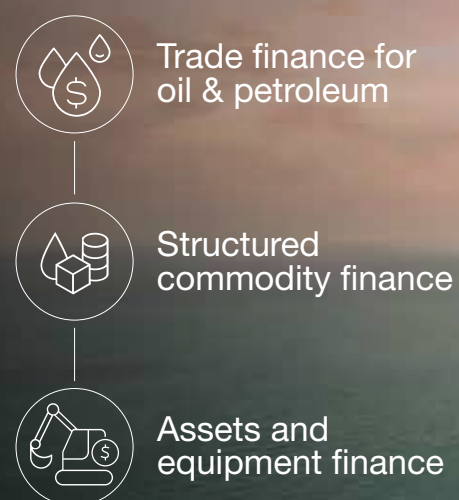
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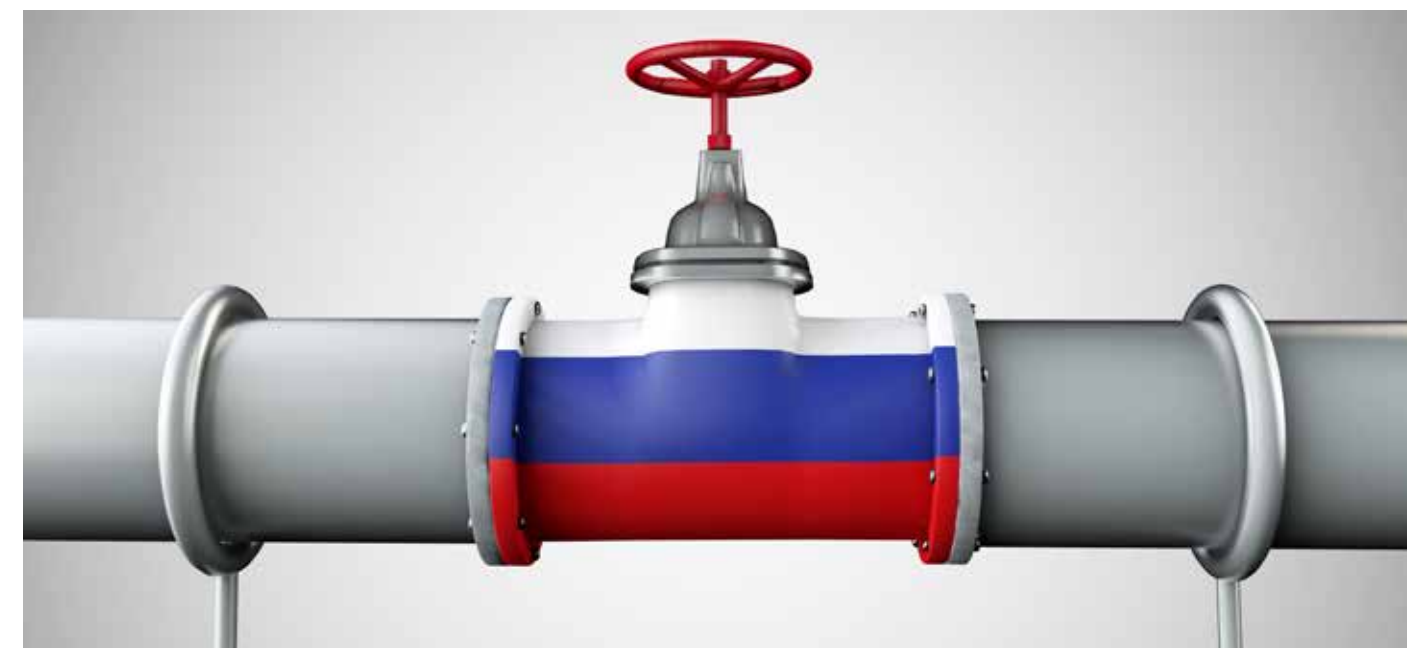


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# Outlook for the Russian Oil Industry Under Continued Sanctions?



**Tatiana Mitrova, Research Fellow, Center on Global Energy Policy; Visiting Research Fellow, Oxford Institute of Energy Studies; Distinguished Research Fellow, Institute of Energy Economics, Japan**

**T**he impact of 18 months of sanctions on Russia has been mixed. It has limited the country's market access, technological development, and partnerships. The oil industry has struggled to get spare parts and consumables, short-term operational challenges compounded by further uncertainty over future sanctions and attracting investment. And despite high oil prices and revenues in 2022, Russian oil companies' available capital is expected to decrease due to, state imposed taxes to finance Russia's sharply increasing military expenditure,

higher interest rates, and pressure for social spending.

However, the implications of sanctions have not been as dramatic as many Western experts and politicians were expecting. Russian oil exporters have managed to divert crude oil exports from the west to China, India, and North Africa. The oil price discounts have reduced profitability, but Russian oil companies have managed to build a new chain of intermediaries, new shipping and insurance providers, to considerably increase its dark fleet, in addition to developing alternative financial tools to

support transactions.

The oil industry has adapted to these new conditions and is feeling quite confident overall. Although oil and gas revenues have dropped this year from the peaks of 2022, prices have recovered in recent months. Still, sanctions have made the global oil market far less transparent.

Looking ahead, the Russian oil industry has the necessary components to sustain production, and it has an adaptable and skilled workforce. The key constraints and uncertainties will be how strict sanctions implementation is and the trajectory of global demand. ■





# Energy Risks and Opportunities in a Dynamic Geopolitical Landscape



**Mehmet Ögütçü, Group CEO, Global Resources Partnership & Chairman, London Energy Club**

### Global energy game-changers

We are entering an era of heightened macroeconomic uncertainty and an investment and trading environment, marked by rising geopolitical risk, efforts to change traditional balance of power and trading routes, advances in pioneering technologies like AI, and an increasingly challenging trade-off between growth and

inflation. The energy world is set to change significantly by 2030. The phenomenal rise of clean energy technologies such as solar, wind, electric cars and heat pumps is reshaping how we power everything from factories and vehicles to home appliances and heating systems. More than 60% of embodied energy that is traded across international

borders today occurs in traded products of energy intensive and other manufacturing industries. The carbon intensity of traded goods is projected to substantially decrease in the 1.5°C scenario, as the composition of energy, transitions from one dominated by fossil fuels today to one of mostly renewable electricity in 2050.

### Geopolitical shifts

Energy has always been bound to geopolitics. The conflict in the Middle East comes as countries continue to contend with the effects of the global energy crisis that erupted last year with Russia's invasion of Ukraine. The Energy Transition is also transforming global geopolitics, with global efforts to combat climate change increasingly reducing dependence on oil, and triggering new competition among economies, creating winners and losers in a new energy order.

The widening rift between China and the US has exposed fundamental differences in the two countries' energy paths. China is moving at a breakneck pace to wean itself off domestic coal and imported oil, by investing in renewables for electricity and electric vehicles for transport.

Additional US and EU barriers to imports of Chinese solar equipment, batteries and EVs could spur stronger efforts by Beijing to juice up domestic demand, to the extent that alternative export markets don't emerge in the Global South or elsewhere. China has huge capacity to manufacture such equipment already in place.

## The widening rift between China and the US has exposed fundamental differences in the two countries' energy paths"

The US is falling behind on renewables installation. Its shale reserves portend a slower move off oil and gas and an inward-looking energy industry with a potentially stronger-for-longer fossil fuel component. Russia will probably remain dependent on China as a customer, even as that market shrinks. And uncertainty clouds the positioning of the Gulf Arab states, complicated by events in Israel and Gaza.

### New trading routes

The pivot towards renewable energy is reshaping international trade. As of 2021, worldwide trade of clean energy products – such as solar panels and wind turbines – reached an all-time high of around \$370 billion. China meets nearly a third of global solar PV demand via exports to Europe and Asia. Germany, Denmark, and



China command two-thirds of wind turbine component exports. China, Germany, and the U.S. supply half of the world's EV batteries. Together with Japan, South Korea, and Belgium, these countries are revolutionizing transportation, paving the way for a fossil-fuel-free future on our roads. Supply chains are reshaping, as new deals are struck along political lines, and companies prioritise contracting with trusted suppliers. Companies are reducing risk in their supply chains and improving flexibility by setting up more localised manufacturing hubs.

Keeping a watchful eye on all these rapidly changing global dynamics will be crucial to companies and governments as they chart their future energy strategies. ■

## RUSSIA SANCTIONS

11

number of sanctions packages on raw materials that the EU has imposed on Russia

34

number of critical or strategic raw materials such as titanium and nickel, that still flow freely from Russia to Europe

€13.7bn

value of imports of critical and strategic raw materials by the EU from Russia between March 2022 to July 2023



# Geopolitics in a US Presidential Election Year & Impact on Energy Policy?



**Rachel Ziemba, Founder, Ziemba Insights & Adjunct Fellow,  
Center for a New American Security**

**T**he US political cycle, already well under way, will complicate the country's response to a range of global crises, leaving US foreign policy more reactive to global shocks, especially in the Middle East. Key priorities of the administration include avoiding a pre-election surprise, avoiding being drawn into further conflicts, managing competition with adversaries, and trying to build

critical supply chains. And all of this needs to be done with the risk of fiscal drag. Building coalitions for key priorities such as Ukraine assistance as well as domestic policies will become more difficult. In turn Congress will push for changes in sanctions enforcement, especially the claw back of Iranian revenues, but major changes are unlikely to be successful in the short-term.



### Sanctions Enforcement

This will add new friction but fail to change the major contours. Intermediaries willing to be nimble are the big winners. Global oil trade involves longer travel times, more intermediaries and occasionally shipping and re-export, increasing costs and benefiting those involved in shipping. This trend will likely continue. We expect some token G7 enforcement of the price cap and moves to increase regulation via the International Maritime Organization on shipping safety, but these impacts are likely to be marginal as the US is not willing to do secondary sanctions. Similarly in Iran, the pressure to restrict energy revenues is rising, especially from Congress, but the illicit nature of the trade complicates enforcement. New volumes are unlikely, but reining in recent volumes will be tough, especially as the US government is trying to target its pressure on China and buy time for the US economy to resume growth.

### National elections breed uncertainty

The coincidence of elections in other major economies, both allies and adversaries, will add to uncertainty, especially as these come at a time of market tightening due to supply cuts. This leaves the US more vulnerable to quick fixes such as use of the SPR, fuel blends and other policies. Elections will increase the tendency of

**Coalitions developed will become more inconsistent, trade deals will be limited by local demands and inflation will risk prompt quick fix price controls and export restrictions, adding volatility to markets"**

countries to seek their own interests, taking advantage of the shifting global order. Coalitions developed will become more inconsistent, trade deals will be limited by local demands and inflation will risk prompt quick fix price controls and export restrictions, adding volatility to markets.

### Fiscal shadow on economies

Meanwhile economic growth globally is set to weaken in 2024 as higher interest rates crimp demand. A recession is not certain, but a slowdown is likely. Despite this, project finance will keep financing costs elevated for both fossil fuel and renewable power. The US Industrial policy has offset this drag so far via semiconductor projects, battery plants and other IRA supported policies, which leaves the US better protected from the rates drag than its peers. Fiscal deadlock, possible as early as 2024, could undermine this trend, especially if businesses wait to see if incentives are renewed or aim for sub-national signals.

Some trends are here to stay despite the electoral cycle. Efforts to reduce the role of China in supply chains will continue - a Republican administration will be less willing to spend on industrial policy and domestic jobs and more focused on trade

restrictions. These measures may limit the use of AI and high-tech applications of US technology in the energy sector in third countries.

### Possible policy reversals

By 2025, Iran and Venezuela relief may fade, tightening the oil market, while the Republicans may try to dismantle the oil price cap as it grants discounts to Asian and emerging economies. We don't see a GOP presidency being much more interested in trade deals, but deals on critical minerals are possible. Gridlock on permitting reform may be reduced, which could be positive for fossil fuel projects, mining, and renewable projects. A Trump Presidency Part 2, would lead to significant attempted policy shifts, and less coordination within the government. If not a rule by tweet, the efforts to drain the swamp may bring inconsistencies across the inter-agency process, and less clear guidance to business. On the issue of renewable energy projects, partial compromises are likely eventually, given the job creation benefits including in GOP-friendly states, with only partial cuts. However, the political climate adds uncertainty for businesses who are greenlighting long-term projects. ■





# PAKISTAN

## *Caught in the Crossroads of Oil & Geopolitics?*



**Osama Rizvi, Energy & Economic Analyst, Primary Vision Network**

In an era where a butterfly's flap in one part of the world can set off a tornado in another, the intricate web of global connectivity has never been more evident. This

phenomenon, often referred to as the 'butterfly effect', aptly illustrates the delicate interplay of local actions and their global repercussions. Nowhere is this more pronounced than in the

realm of energy and geopolitics, with Pakistan serving as a compelling case study.

Pakistan stands at a pivotal juncture, navigating the intricacies of its energy

**25%**  
of Pakistan's import bill is  
oil and oil products

**165,000 b/d**  
domestic oil production  
versus 500,000 b/d  
requirements

**0.001%**  
land used so far for  
solar power

**Pakistan stands at a pivotal juncture, navigating the intricacies of its energy landscape against the vast tapestry of global geopolitical dynamics"**

landscape against the vast tapestry of global geopolitical dynamics. Recent data paints a stark picture: a 17% decline in oil and a 6% drop in gas reserves within a mere year. This significant depletion underscores the urgent need for diversification and reduced dependency on non-renewable resources.

A deep dive into the nation's energy mix reveals a pronounced reliance on thermal energy, accounting for 58.8% of the total. While the Economic Survey of Pakistan 2022-23 provides a glimpse of diverse energy sources, the modest 6.8% from renewables like solar, wind, and biomass emerges as a beacon for potential expansion. These sources not only promise economic advantages but

also herald a path towards environmental sustainability.

However, it's imperative to recognize that Pakistan's challenges are not insular. They mirror broader global issues, with intertwined and complex global policies often producing ripple effects that disproportionately burden countries like Pakistan. This interconnected landscape accentuates the need for international policymakers to grasp the delicate balance of global energy and geopolitical dynamics.

### **Opportunities to Seize in Oil and Gas**

Given Pakistan's significant exposure to international energy markets, where the majority of its energy needs are



imported, there's a pressing need for strategic hedging and anticipation. By doing so, Pakistan can mitigate the losses it often incurs due to volatile global energy prices. Moreover, there's a clarion call for Pakistan to ramp up its Exploration & Production (E&P) activities. Investing in E&P not only ensures energy availability but also addresses a myriad of the nation's challenges, from economic to infrastructural.

The economic ramifications of the current energy choices are palpable. With electricity prices surging by over 90% in the past five years and a heavy reliance on imported energy sources, the repercussions are felt across sectors. The rise in car prices, leading to a decline in petrol sales, is a testament to this.

Yet, amidst these challenges, a silver lining emerges. Pakistan boasts over 3,000 TCF gas resources in its shale horizons, and the discovery at the KUC-1 pilot well in Hyderabad in 2020 offers a glimpse of the nation's untapped potential. Furthermore, global rankings place Pakistan 17th in shale gas reserves, signaling a promising avenue for exploration.

While Pakistan's energy challenges echo wider global issues, there's an onus on both national and international policymakers to fathom these complexities. Crafting tailor-made policies, bolstering E&P activities, and employing strategic hedging against global market volatilities will be instrumental in charting a sustainable and prosperous path forward for Pakistan and the broader global community. ■



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