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Whitepaper

Q1 2022

***GLOBAL OIL MARKETS SET
TO RETURN TO 100 MBPD IN 2022***

FUJAIRAH

Opportunities & Challenges?



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All Content Harvested from Feb. 24th Workshop

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Fujairah is Coming Off a Record Year

Capt. Salem Al Hmoudi, Director, Fujairah Oil Industry Zone

After a bumper two years of Covid pandemic disruption and despite all the turbulence, Fujairah is coming off a record year in terms of liquid bulk throughput. We saw many new developments in 2021, starting with Brooge Energy announcing it was moving forward with construction of its proposed Phase 3 refinery and storage expansion at its existing terminal operations. We also saw ICE Futures Abu Dhabi (IFAD), in partnership with ADNOC, launch the Murban oil futures contract, and they selected Fujairah as the energy hub for the physical settlement for this. ADNOC has expressed that it sees Fujairah at the center of its strategy to go beyond the border of the UAE – a tipping point between producers, exporters, and traders, where basically supply meets demand.

And 2022 has kicked off with no shortage of new surprises regionally and globally, and of course, most notably with the Ukraine crisis, and oil prices soaring above \$100 a barrel. The drawdown of global oil inventories to well below 5-year averages, the lack



of spare oil production capacity and limited investment in the sector in recent years, is also helping keep crude at these 8-year highs. This elevated oil price of course will bring both challenges and opportunities, which in some ways perfectly sums up the outlook for the year ahead.

The increased oil revenue will

underpin spending in major national infrastructure projects, such as the UAE railroad connecting all seven emirates. It will also bolster the determination of Abu Dhabi to raise oil production capacity towards its goal of 5 million barrels a day. The increase in OPEC+ production quotas is already seeing more oil flowing from the region every month, although admittedly the steep backwardation in the market is resulting in less of it heading for storage. Still, Fujairah is closer to a major expansion of its crude oil storage capacity with the ADNOC underground caverns moving towards completion. At the same time, refineries are planning expansions, and container shipping is likely to get a boost when the Etihad Rail connects to the city. Two other UAE companies – Ecomar Energy Solutions and Brooge Petroleum – are investing further in storage and refining facilities in Fujairah, while Uniper Energy DMCC, one of three refineries in the Fujairah Oil Industry Zone, may also boost its refinery output. Meanwhile, a dry bulk export facility to ship from Fujairah’s Dibba is set to open later in 2022, providing a boost to bunkering activities, and LNG bunkering may soon be introduced. ■

36%
No

64%
Yes

Oil & Gas was the best performing on NYSE in Q4 – Tellurian Chairman said only yesterday it’s now imperative for financial institutions to increase their exposure to hydrocarbons to avert looming supply shortage: Will They?

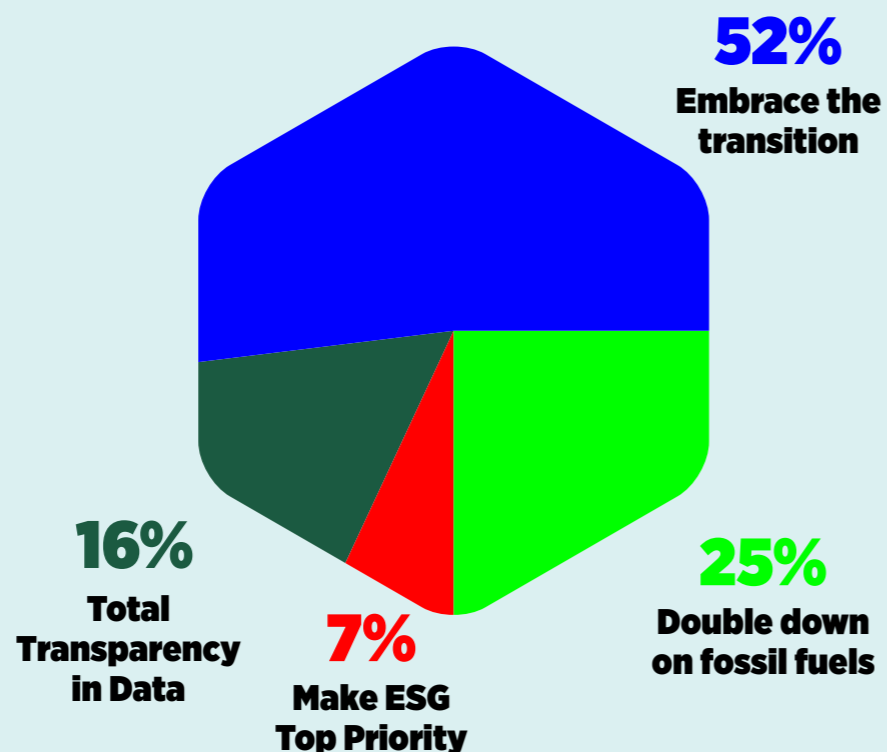
EXECUTIVE SUMMARY

“100 Million Barrel Market at \$100 Oil with Record Backwardation: How Should Fujairah Leverage this Triple Peak in 2022?”

Oil prices that rallied 50% in 2021 are powering further ahead this year, accentuated by the crisis in Ukraine, the collapse in global oil inventories, the lack of spare oil production capacity and limited investment in the sector in recent years. As world leaders prepare to gather in Egypt in November for COP27 to advance the fight against climate change, global oil demand is expected to bounce back above the key level of 100 million barrels a day last seen before the Covid-19 pandemic.

Fujairah, with its strategic position outside the Strait of Hormuz, has risen rapidly in the last two decades to become the third-largest global bunkering port after Singapore and Rotterdam. Its port has become a ‘One Stop Shop’ for the maritime industry. Fujairah Oil Tanker Terminals (FOTT) is the UAE’s premier hub location for bunkering and oil trading activities, handling crude oil and refined products imported and exported by 13 international terminal storage companies. FOTT operates a total of nine main berths, 14 wing berths and

What is the most important next step for Fujairah to take advantage of what might be the foothills of the final oil boom?



“As companies and policy makers set ambitious carbon neutral pledges, care must be taken to maintain energy security and affordability, so the journey must be a balanced one, allowing conventional oil and gas fuels to sit alongside lower carbon alternatives.”

Capt. Salem Al Hamoudi, Director, Fujairah Oil Industry Zone

two dedicated barge berths, handling vessels ranging from 3,000dwt to 200,000dwt, and a VLCC jetty capable of handling both fuel oil and crude oil vessels from 87,000dwt to 330,000dwt.

Registering record volumes of liquid bulk throughput in 2021, the Port of Fujairah is forecast to experience yet another busy year, given incremental crude trade out of the Middle East and the UAE, rising production from OPEC producers, and an expansionary drive by regional refineries and storage terminal operators. With oil prices surpassing \$100 in early March, and forecast to remain elevated during the year, investment into both conventional and new energy fuels is set to increase. With inflation hitting its highest rate in decades around the world, energy and commodities appear to be a smart investment. ADNOC’s recent investments in drilling-related equipment and services, supporting its strategy to boost crude oil production capacity to five million barrels per day by 2030 and drive gas self-sufficiency for the UAE, should also filter through as an advantage for the port.

The oil refining and storage industry is also at a crossroads as the energy transition gathers pace. Fujairah is ideally placed to balance

what the market needs in this regard. The UAE was the first nation in the region to announce ambitious renewable energy programs. In 2006, it set a 7% target for renewables in its energy mix. This target is now 24% and expected to be achieved in the next two years. Again, Fujairah can adapt and align itself to help the country reach these critical goals. But as companies and policy makers set ambitious carbon neutral pledges, care must be taken to maintain energy security and affordability, so the journey must be a balanced one, allowing conventional oil and gas fuels to sit alongside lower carbon alternatives.

The UAE can leverage its natural geographical and cheaper feedstock advantage to become a hub for product-led arbitrage trading in the region. The increased availability and transparency of Fujairah’s inventory and storage data can also cement its position as a global market maker, encouraging trading arms of global firms to relocate offices to the emirate.

So, looking ahead, what challenges does Fujairah face, as global oil markets and demand return to a post-Covid world and what opportunities exist to be seized?

3rd is Fujairah’s ranking in the list of the world’s biggest bunkering hubs.

#1 In 2021, Fujairah Oil Tanker Terminals (FOTT) and Fujairah handled a record high amount of oil throughput across all the jetties – at more than 120mn metric tons.

8.2mn metric tons of bunkering volumes was achieved in 2021, with a similar level expected this year.

4,570 vessels called at the Port of Fujairah in 2021, up slightly on the level in 2020.

2022 will see the completion of Etihad’s Railway project, which includes a connection to the container terminal.

11mn cubic metres-plus of oil storage capacity was achieved last year.

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INSIGHTS

Dave Ernsberger Global Head of Commodities Pricing S&P Commodity Insights



Fujairah can play a significant role in balancing a new fuels supply mix.

Serious imbalances have emerged in the last two years in the global energy and commodity markets, that are institutional and systemic in nature. We had the catastrophic loss of demand in 2020, which also triggered a more meaningful discussion around the energy transition, and now at the end of that two-year cycle, we've realized we don't have enough energy to supply markets globally in a secure and affordable way. Fujairah is well positioned to deliver on a continued supply of critical traditional fuels like low and high sulphur marine fuels, and newer fuels like ammonia and LNG.

Opportunity for finance in product differentiation

There's clearly a need for investment in new fuel markets. The carbon intensity of different fuels and different locations is an innovation in the market that will help direct investment into lower carbon intensity activities. Fujairah can play a leading role in that conversation by measuring the carbon intensity of the industrial activities and supply chains that pass through the port, and by doing so, attract the investors it needs.

Data and transparency key to attracting investment

The more data that's available to the global market about what's happening in Fujairah, the greater the confidence and activity from other actors in the marketplace. The new IFAD Murban futures contract having its nomination point as Fujairah for example demonstrates that the global market is confident in the hub as a critical piece of the infrastructure and transparency on what's moving in, moving out and moving around the region.

Tight market should ease by end of 2022

The market remains very tight today, but conditions should normalize by the end of the year. The best cure for high prices is always high prices and, likewise, the best cure for a strong backwardation is the market's response to meeting that short-term call for supply. However, the response from US independent producers has not been as forthcoming as it was before the pandemic. The only capacity at the top of the chain is what remains in OPEC Plus. Prices should fall back below \$100 if the Ukraine crisis eases and as we head into a seasonally slower time for demand in Q2. But even if the market rebalances, there's no chance of oversupply coming back.

INSIGHTS

Kieran Gallagher Regional Product Head Vitol Bahrain E.C



There's a renewed focus for trading companies relocating to region

Much of this interest is directed towards the UAE and with that, Fujairah as the main trading hub. A lot of the ancillary support, banking structures, legal structures are here, as well as the technical expertise with regard to tankage. And this is all being supported by the additional refinery capacity coming on in the region.

New arbitrage opportunities

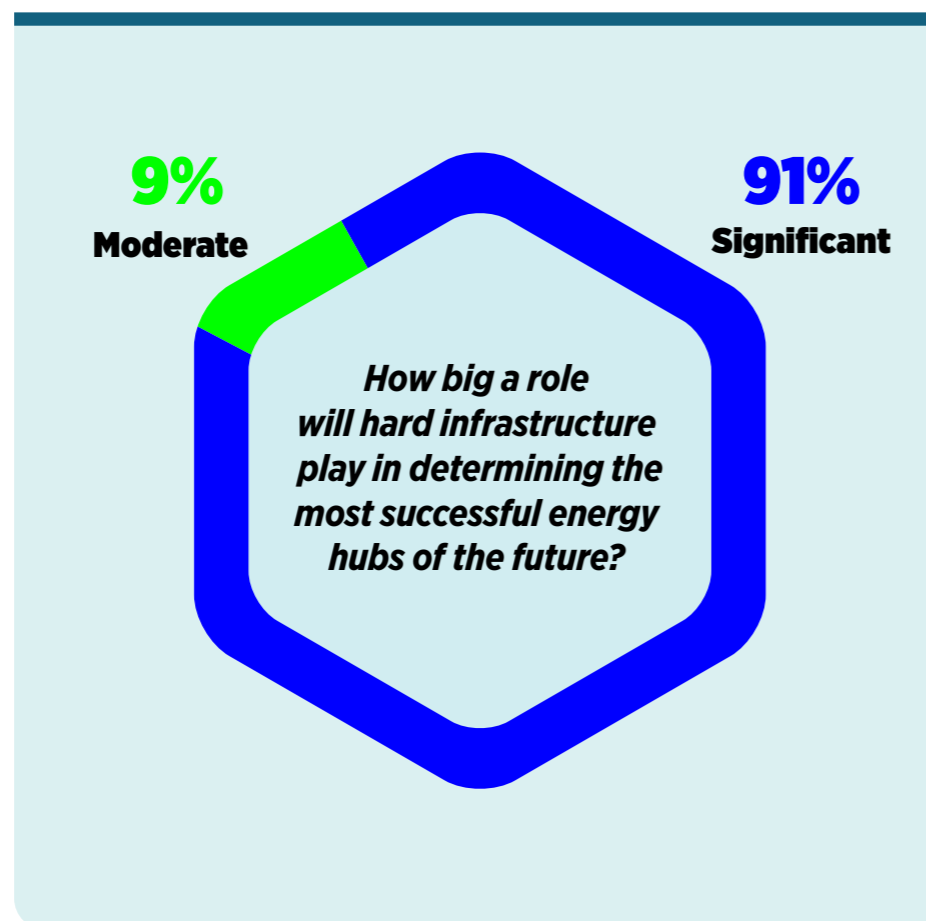
After a year of super contango, we've seen a huge drawdown in stocks. The steep backwardation in the market does present a challenge to the Port of Fujairah and its stakeholders. Still, there are opportunities in such challenges, such as the conversion of tanks to ammonia for different arbitrage. The additional refinery capacity coming onstream in the Gulf, and poor refining economics in other parts of the world because of high feedstock prices, ultimately gives Fujairah a natural geographical advantage. Product-led arbitrage trading in the region is going to grow, for example, into the Mediterranean and Africa. A more recent example surfaced during the first two months of this year. Chinese product exports were incredibly low, creating a pull on Middle Eastern products to the Far East. So, Fujairah can also be a base arbitrage hub going forward and not limit itself to the traditional contango storage role of the past few years.

EXECUTIVE SUMMARY

“It’s the Economy, Stupid! Energy Crisis in Europe Reminds us that Successful Energy Hubs of the Future will be all about Infrastructure, Stupid?”

Some international energy giants have been shying away from investing in hard infrastructure projects (notably for fossil fuels) as part of their ongoing efforts to lower their carbon footprint, as per the Paris Agreement. Equally, not investing in hard infrastructure that lies at the heart of immediate energy security – notably oil and gas – can jeopardize energy security, for renewables are still developing. Such vulnerabilities are being seen in Europe’s gas network amid Russia’s invasion of Ukraine, for example (*see box: Europe’s balancing act*). Therefore, sustaining financial support for hard infrastructure for fossil fuels is pivotal to preserving, and indeed improving, energy security in the near-term.

This certainly applies to energy hubs, including the Port of Fujairah, the world’s third largest bunkering hub. The same critical importance also applies to ensuring operations at energy hubs are extremely well integrated, as streamlined processes tend to attract more customers and



“The idea of a hub actually extends not only in the oil context, but in the future context around hydrogen and hydrogen carriers.”

Jared Pearl, Chief Commercial Officer at VTTI

investors. After all, ultra-convenience is king. Of course, some hard infrastructure projects at energy hubs may become harder to finance and roll out, as funds for greener energy currently tend to be more attractive on a political and reputational basis. For one, the banking sector can be reluctant to finance oil-related projects unless a valid case is made, with behemoth oil and gas companies most likely to secure large, competitively priced investments. The good news is that investing is not a problem for the Port of Fujairah, with its position near the Strait of Hormuz – a strategic shipping lane where approximately 18mn b/d of crude is shipped – supporting its global importance. The Port’s long running reputation for efficiency and proactivity to support new markets also continues to pay dividends.

Hard infrastructure also naturally plays into energy hubs being able to keep pace with the evolving energy basket. Growing global demand for

LNG and hydrogen – the former far more proven than the latter – means that energy hubs need to update their offering, including building the associated infrastructure. This is critical to not only supporting energy security and greener energy markets, but also to remaining competitive on the global stage – and therefore attracting high-profile customers and investors. For example, the Port of Fujairah has primarily been a bunkering and blending storage location, but that too is evolving as ADNOC and the Port explore LNG bunkering. This proactive stance has been further consolidated by ADNOC’s launch of the Murban crude futures contracts, which offers a rival pricing benchmark and a hedging opportunity for traders. Amid rising energy demand, globalization 4.0, and the acceleration of the energy transition, the energy hubs that can offer integrated, evolving, and relevant solutions in 2022 and beyond will lead the pack.

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5mn b/d
is what the UAE is aiming to increase its oil production capacity to by 2030.¹

240GW
of offshore wind capacity in the EU is expected to be produced by 2050.²

\$45mn
worth of infrastructure investments are planned by Fujairah Oil Terminal.³

50%
is the estimated decline in global energy investments, with today’s \$350bn down from almost \$700bn in 2014.⁴

Sources: ¹News agencies; ²US Department of Energy; ³Reuters News; ⁴Saudi Aramco CEO

Europe’s balancing act

Russia is Europe’s largest natural gas supplier, accounting for 40% of Europe’s gas imports. When gas prices in Europe reached record highs, some analysts pointed to Europe’s strict energy transition policies as they reduced the emphasis on investment in hydrocarbon infrastructure. Now, Russia’s invasion of Ukraine has pushed Europe to once again re-evaluate its dependency on Russia’s gas imports as prices rise ten-fold in some areas. Patrick Pouyanné, the CEO of TotalEnergies, recently highlighted the deep-rooted problem of Europe’s insufficient alternative infrastructure for gas or LNG imports. This has left Europe vulnerable, highlighting the need for countries to be able to hedge their energy supplies – and thus, consider their hard infrastructure investments – in order to hedge against geopolitical instabilities.

INSIGHTS

Jared Pearl
Chief Commercial Officer
VTTI



VTTI is expanding its infrastructure in global hubs to follow increasing oil trade flows in the Arabian Gulf, as the region builds and operates new refineries. This will partially make up for the loss in output from large refineries elsewhere, once they stop operations. At present, getting access to capital in order to fund this move is not an issue thanks to a diversified mix of shareholders, including oil companies, such as ADNOC. Oil flows will remain dominant at energy hubs at least until the next decade, as technology for alternative fuels is yet to scale up. But in the future, energy hubs will not just be about oil, but also clean hydrogen and hydrogen carriers, for example.

INSIGHTS

Neil Robertson-Jones
Head of Corporate Banking
National Bank of Fujairah



Investments in hydrocarbons will likely increase, as the energy transition is a long-running endeavor. The rise in investment is inevitable, despite the global call to support green energy. This is necessary, however, as the energy transition will take time and money. Hydrocarbons can help provide energy security while the transition gets underway. Banks prefer short-term financing, but it also depends on the company's profile and focus. Some companies in the Middle East have greater capacity than others, for example. Meanwhile, other, smaller operators can find it more difficult and expensive to secure long-term financings.

INSIGHTS

Captain Mousa Morad
Managing Director
Port of Fujairah



Trust Fujairah: we are unique with many opportunities to offer. Big companies can trust Fujairah and work with the Port and partners, like Aramco and ADNOC. We cannot draw an analogy between Singapore and Fujairah. In Fujairah, we are short of crude tankage, and we are doing more studies to build the kind of infrastructure we lack. We have 11mn cubic meters of crude and oil products storage capacity at Fujairah, but just 3.5 million cubic meters of crude storage is in use right now. Activity at the Port will pick up when new refineries come online, for example. We are unique in terms of cost (compared to Singapore and Rotterdam), we have lower taxation, plus ADNOC's increasing presence at the Port. We are betting on all these factors to grow our services in the future.

INSIGHTS

Tony Quinn
Operating Partner, Prostar Capital &
CEO, Tankbank International



Invest in old oil to get the new oil: the energy transition will only take place if it gets the required funding from existing oil and gas activities. Some energy companies have announced their unwillingness to invest in fossil fuels, but this is where they are making all their money. If they put that money into the transition, we could get closer to the final [environmentally friendly] products that still need to be finalized, such as with ammonia and clean hydrogen. The shipping industry, which is our big customer, is the demand factor in this. As for the future infrastructure investments in Fujairah, this will depend on what clients want. For instance, we are not going to build more tanks or more infrastructure unless our clients demand it. If there is demand, we will ask for financing. We are all waiting to see what we need to store in order to meet future demand. It will take us two years to build a tank, but it might take ten years to formulate the associated policy. The market is becoming extremely competitive, as we have recently seen in Singapore, for example.

WORKSHOP: TOP 10 RECOMMENDED ACTION POINTS

- **Balancing Act** – Fujairah can play a significant role in balancing the fuels supply mix in the region, continuing to supply critical traditional fuels like low and high sulfur and marine fuels, while adding new and less carbon intensive fuels like ammonia and LNG.
- **Energy Security** – To maintain energy security and affordability, a balanced approach must be found to allow oil and gas fuels to sit alongside lower carbon fuels. If not, ambitious carbon neutral pledges by companies and policymakers risk triggering more investment away from old fossil fuels, causing shortages and price spikes.
- **Energy Transition** – Fujairah can play a leading role in the transition and fuel innovation conversation by measuring the carbon intensity of industrial activities and supply chains that pass through its port, and by doing so, will attract more interest from the financial community.
- **Arbitrage Hub** – The region's availability of competitive feedstock prices and expanding refinery capacity enable Fujairah to establish itself as an arbitrage hub going forward, adding to its principal position as a storage hub.
- **Infrastructure Investment & Expansion** – Fujairah should capitalize on the elevated oil price outlook and position itself for continued infrastructure investment and expansion.
- **Invest in Hydrocarbons & Related Infrastructure** – Some energy companies are shying away from fossil fuels, yet this is where the bulk of their profits lie – profits that are also needed to support R&D for a successful energy transition. Plus, continuity of the hydrocarbon market in the near-term is key to sustaining energy security during the energy transition, which will run up to 2050 at least.
- **Expand Operations to Include LNG Bunkering** – LNG is a global growth market and Fujairah is no different. For example, state-owned Abu Dhabi National Oil Co (ADNOC) is considering an LNG bunkering project to serve LNG-fueled ships located either in Fujairah or Jebel Ali. Any plans for LNG operations must consider that it is a transition fuel, so its relevance will be reduced at some point (though not before 2050).
- **Finance New Energy Infrastructure Projects** – Demand for energy in the Middle East and worldwide is rapidly rising at the same time as the global environmental agenda is calling for fewer fossil fuels. Therein lies the need for the Port to facilitate and support the growth of new energy types, such as renewables. In turn, this strengthens the entire energy basket over the long-term.
- **Embrace Hydrogen Markets** – The growth of a clean hydrogen market in the Middle East and worldwide must be factored into the Port of Fujairah's long-term offering, such as a fuel or storage. While many questions about this budding market still need to be answered, notably relating to cost, it is extremely likely that it will play a key role in the long-term decarbonization of fuels.
- **Establish clear policies to guide companies' development and help spur ambition.** Greater clarity will support companies' navigating supply-demand dynamics and regulatory requirements, for example. This will support current operations, as well as give companies - existing and potential - greater visibility on future trends, enabling them to proactively respond.



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