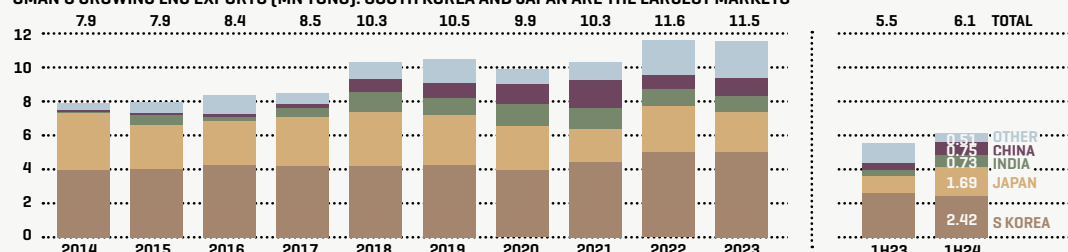


## UPSTREAM OIL &amp; GAS

## Oman Eyes LNG Boost To 15.2mn t/y By 2029

Oman is joining Qatar and Abu Dhabi on the path to LNG expansion, announcing plans for a fourth train, taking total capacity to 15.2mn t/y by 2029. The move will enable Oman to tap into its plentiful gas reserves and signals its confidence about its place in the future global LNG market. **Page 2**

OMAN'S GROWING LNG EXPORTS (MN TONS): SOUTH KOREA AND JAPAN ARE THE LARGEST MARKETS



## POWER &amp; WATER

## Neom's Bold Green Power & Water Plans

Neom's power and water subsidiary Enowa sees the blank canvas as a huge opportunity to build a 100% renewably-powered city. **Page 12**

## GEOPOLITICAL RISK

## Israel Killings Risk Regional Retaliation

All eyes are on Iran to see how it responds to Israel's audacious assassination of Hamas political leader Ismail Haniyeh in Tehran this week. **Page 10**

## POWER &amp; WATER

## Kuwait Power Woes : No End In Sight

Kuwait's power sector is in urgent need of more capacity. With only minimal additions on the way, shortfalls will continue through 2026, and likely beyond. **Page 14**

## UPSTREAM OIL &amp; GAS

## Adnoc's Upper Zakum Closes In On 1mn B/D

Adnoc's Upper Zakum shipments are up, with capacity set to rise further to 1.2mn b/d by 2027. But exports are down with record volumes refined domestically. **Page 4**

## UPSTREAM OIL &amp; GAS

## Israel's Leviathan Eyes Further Boost

Israel's Leviathan partners have approved the \$500mn FEED budget for expansion to 2.1bn cfd and this week revealed plans for a further boost to 2.35bn cfd. **Page 5**

## ECONOMY &amp; FINANCE

## Cyprus LNG Import Snafu Deepens

Cyprus' decade-long LNG import drama has descended into farce with the Chinese contractor quitting and the EU demanding its funds back. **Page 15**

## CORPORATE

## Eni Bearish On Egypt LNG, Eyes Cyprus Tie-In

Amid Egypt's overall gas shortage, Eni expects no LNG export cargoes for some time but eyes early-2025 FID for 2027 tie-in of Cyprus' Cronos. **Page 6**

## CORPORATE

## Qatar Quits Promising South African Asset

South Africa Block 11B/12B was one of QatarEnergy's most promising overseas finds. But a regulatory stand-off has seen it join operator TotalEnergies in quitting. **Page 7**



# Oman Eyes Fourth LNG Train Taking Capacity To 15.2mn t/y By 2029

*Oman announced plans to build a fourth LNG train at its facility in Sur. The move will enable Oman to tap into its plentiful gas reserves and signals its confidence about its place in the future global LNG market.*

Oman has been saddled with what then oil minister Muhammad al-Rumhy in 2018 called the “nice problem” of having more gas supply than demand (MEES, 7 September 2018). Recent upstream success in gas exploration and development means that for at least the past two years the country has had to throttle back on production for lack of an outlet.

This has forced Oman’s largest hydrocarbon producer state-led Petroleum Development Oman (PDO) to act as a swing gas producer, tamping down its own output in recent years to make space for IOCs.

To remedy this “nice problem,” Oman is moving forward with an expansion of its LNG capacity operated by Oman LNG (Oman Investment Authority 51%, Shell 30%, TotalEnergies 5.54%, Korea LNG 5%, Mitsui 2.77%, Mitsubishi 2.77%, PTTEP 2% and Itochu 0.92%).

On 27 July, Oman’s Ministry of Energy and Minerals announced the development of a fourth LNG liquefac-

tion train with a capacity of 3.8mn t/y to be built alongside the three existing 3.8mn t/y trains at the Qalhat Industrial Complex in Sur (see map), bringing the site’s total capacity to 15.2mn t/y.

The three existing trains have typically operated at somewhat above their 11.4mn t/y nameplate capacity since 2021, Oman LNG says.

“The addition of a new LNG train is a key component of Oman’s strategy to solidify its position as a leading producer and exporter of liquefied natural gas in the global market,” energy minister Salim al-Aufi says. “By leveraging our existing infrastructure and resources, we aim to capitalize on the growing demand for clean energy sources while also contributing to the diversification and long-term sustainability of Oman’s economy.”

The new train is due online “by 2029,” with the government “now progressing with finalizing the Front-End Engineering Design (FEED) Study,” according to the ministry announcement, adding that “this critical step is expected to pave the way for the project’s

Final Investment Decision (FID).”

Although slippage is possible, a five-year timeframe is feasible for Oman. When the third train was added two decades ago, it took two years for Oman to award EPC contracts following its announcement and then another three years before it was finally inaugurated (MEES, 20 January 2004 & MEES, 17 April 2006).

## MORE LNG, SHORTER DEALS

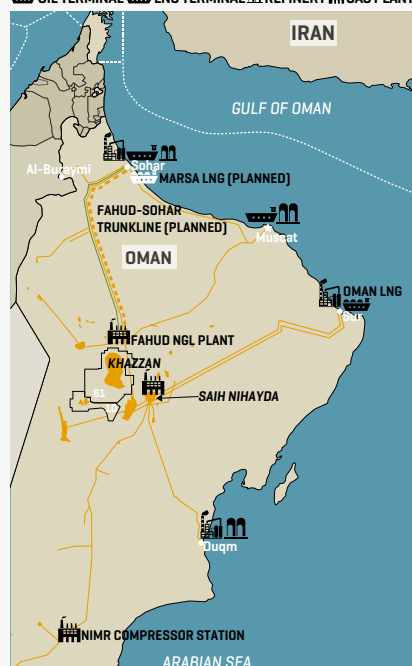
Oman has been maxing its LNG exports in recent years, pushing its liquefaction trains to run above their nameplate capacity. Last year, Oman LNG exported 11.5mn t/y for the second year in a row. For the first half of this year Oman exported 6.1mn tons LNG, up 11% from the same period last year, according to data intelligence firm Kpler (see chart 1).

Exports almost entirely head east, with South Korea remaining Oman’s

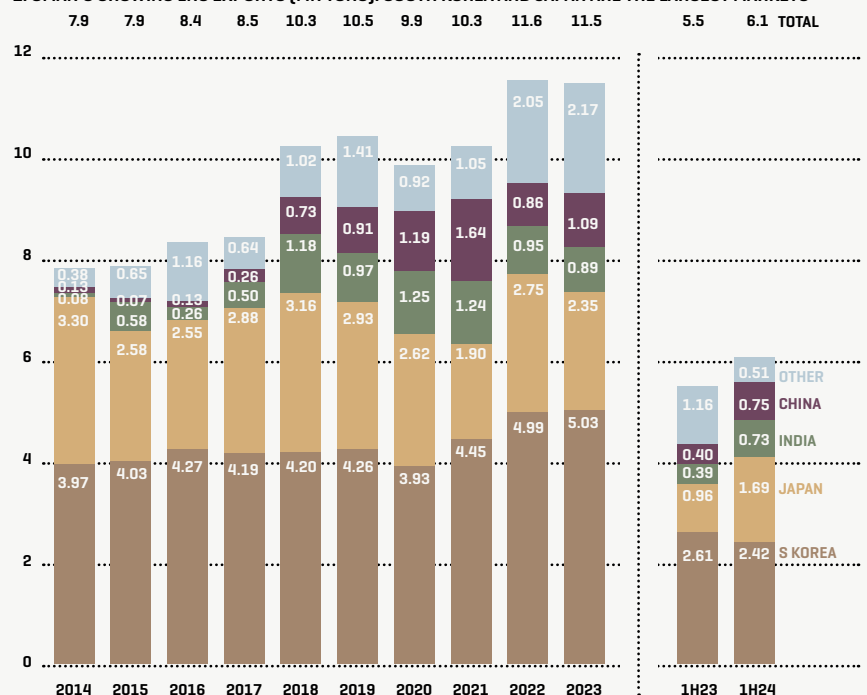
Continued on – p3

### OMAN’S GAS PIPELINE PROJECTS

■ GAS FIELD/PIPELINE ■ NGL PIPELINE ■ PETCHEMS PLANT  
■ OIL TERMINAL ■ LNG TERMINAL ■ REFINERY ■ GAS PLANT



### 1: OMAN’S GROWING LNG EXPORTS (MN TONS): SOUTH KOREA AND JAPAN ARE THE LARGEST MARKETS



SOURCE: KPLER, MEES.

## Continued from – p2

largest customer followed by Japan which imported 1.61mn tons for the first half of this year (see p17). Exports to India totaled 700,000 tons over 1H 2024, putting it on course to break 2018's 1.2mn ton full year record.

Nearly all of Oman LNG's exports are sold under mid- and long-term contracts (94%) with only a small amount sold on the spot market. The company successfully marketed nearly all of its capacity last year through a flurry of deals (MEES, 1 September 2023). It was notable at the time that Oman was switching from 15-20 year contracts to shorter term 5-10 year agreements (MEES, 3 March 2023).

Energy Minister Aufi emphasized this shift in comments to local media last month. "We took all the observations and lessons learned from the old contracts," said Mr Aufi. "Many countries are transitioning to renewable and clean energy, and this technology is advancing rapidly. They do not want to commit to long-term liquefied gas purchase contracts only to find halfway through that they need to exit the contracts."

However, the decision to invest in a fourth train underlines that Oman sees strong LNG demand stretching well beyond 2030.

## RECORD DEMAND, AND GROWING

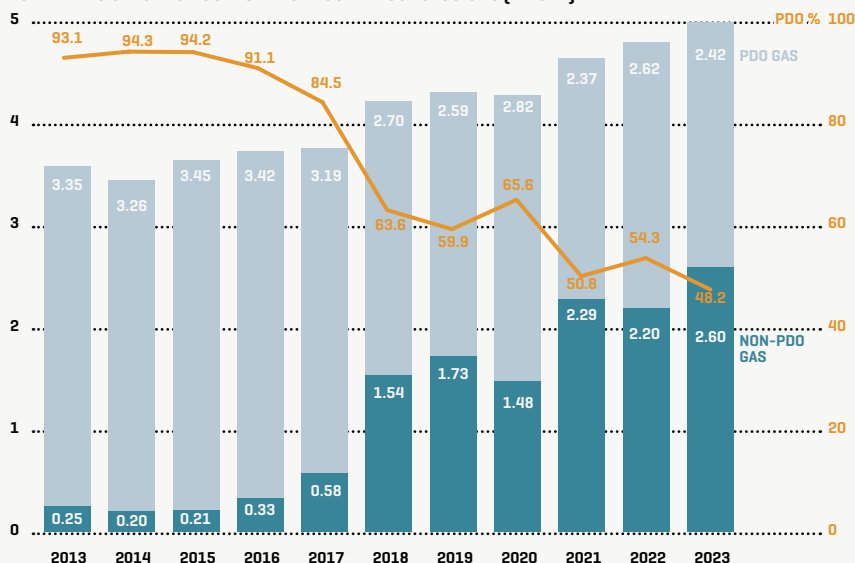
LNG is a key engine of accelerating gas demand in Oman. Already this year the country hit new records for gas consumption from both the 'industrial' segment — of which LNG is the key element — and power sector (MEES, 26 July).

The addition of a fourth train at Qalhat will require an estimated 560mn cfd (5.8bcm/y) of gas feedstock, a 15% increase on current industrial demand. Currently, Oman LNG says it consumes 1.5bn cfd (15.5bcm/y) of gas, implying post-expansion demand of over 2bn cfd.

"There will have been a lot of discussions about what to do with the gas from all of the earlier discoveries. Do we encourage local industry, do we go for LNG, or can we do all of the above?" the ministry's former marketing chief Ali al-Riyami, tells MEES. "If renewables go well, this will also free up more gas to be used," he adds.

As well as expanding its LNG footprint, Oman is also looking to leverage its gas resources to boost local industry. Early 2024 saw the start-up of the 230,000 b/d Duqm refinery, the nascent industrial hub's first major project (MEES, 9 February). The Duqm plant consumes around 100mn cfd (1bcm/y) of gas, according to gas transportation company OQGN. There are also plans to integrate a petrochemicals facility with the refinery, which if approved will add approximately

2: PDO'S SHARE OF OMAN GAS OUTPUT HAS DROPPED BELOW 50% AS IT MAKES SPACE FOR OUTPUT FROM IOC-LED CONCESSIONS (BN CFD)



SOURCE: PDO, NCSI, MEES.

100mn cfd of additional gas demand.

Further down the line is Shell's planned blue hydrogen project at Duqm, dubbed Blue Horizons. According to an announced award for ammonia technology from US firm KBR, the estimated size of the blue hydrogen plant would be around 200,000 t/y (MEES, 26 July). Back-of-the-envelope calculations put the required gas feedstock for a plant that size at around 60mn cfd. Meanwhile, Total earlier this year took FID on the 1mn t/y Marsa LNG bunkering facility, which will need another 150mn cfd (MEES, 26 April).

Longer term, industrial development plans focus on using renewable energy, either directly or through green hydrogen, but will likely need natural gas as a transition fuel.

Vulcan Green Steel, a 5mn t/y project under the umbrella of Indian parent company Jindal Steel, aims to eventually use green hydrogen in its production processes (MEES, 20 October 2023). But according to the firm it will initially run on natural gas from 2026 until green hydrogen is available.

Demand is also set to surge in Oman's power sector. According to grid operator OETC, peak demand is expected to reach 11GW in 2028, a 36% increase from 8GW in 2023. Gas-fired power plants will provide the majority of the power to meet this demand, with Oman facing a decision on extending the contracts for key plants to keep the lights on in future (MEES, 14 June).

## UNCAPPING GAS OUTPUT

Boosting gas demand is crucial for Oman if it is to fully capitalize on its gas reserves and continue to attract international players into its upstream. Recent discoveries and developments in Oman's upstream sector have seen gas production soar, but the growth is capped not

by upstream limitations but by demand.

The country has experienced a gas 'renaissance' since 2017 when BP brought online the massive Khazzan gas development. With the second phase Ghazeer expansion successfully added, the field now produces 1.5bn cfd, some 37% of the country's current non-associated gas output.

Added to this is new output from the Shell-led Block 10, which started up in January 2023 and has been ramping up towards 500mn cfd this year (MEES, 20 January).

More may be added in neighboring Block 11 where Shell is pursuing "a very aggressive exploration campaign over the next two years," Shell Oman country chair Walid Hadi told MEES, adding "we're confident that we will add more molecules to our resource base" (MEES, 22 December 2023). In nearby Block 12, TotalEnergies contracted local firm Abraj Energy last December to drill two gas wells in a campaign beginning in Q1 (MEES, 22 December 2023).

With burgeoning output elsewhere and limited outlets for production, PDO has been forced to act as a swing producer and limit its gas output. The state-led firm used to provide nearly all of the country's gas. But recent data suggests the company is producing less than half of the country's gas output, dropping to just 48% last year (see chart 2).

In 2023, PDO produced a total of 2.4bn cfd, including associated gas which was used internally. While the company did not publish a breakdown of associated and non-associated gas, MEES estimates PDO produced 2.0bn cfd of non-associated gas. Now with a fourth train on the cards, PDO may be able to look forward to production increases at the end of the decade. Then again, if Block 11 and 12 development goes well, it may be forced to continue shutting in sizeable quantities. ♦♦





**A**dnoc shipped 985,000 b/d of its Upper Zakum crude grade to domestic and external markets in July. This is the highest figure since October 2023, and marks the third consecutive monthly increase according to Kpler data (see chart).

Upper Zakum (34° API, 1.75% Sulfur) is exported from Zirku Island, around 80km offshore, and volumes are primarily from the Upper Zakum offshore concession (Adnoc 60%, ExxonMobil 28%, Inpex 12%). Recent shipments are in line with the concession's 1mn b/d capacity, which Adnoc plans to increase to 1.2mn b/d as part of its broader 5mn b/d 2027 target.

Traditionally, all Upper Zakum production has been exported, but following the completion of Adnoc's Crude Flexibility Program (CFP) upgrades to the 417,000 b/d Ruwais West refinery enabling the refinery to run on heavier grades, significant volumes are now being refined domestically. Volumes are supplied to Ruwais on tankers, with shipments beginning in September and gradually ramping up. Upper Zakum has now essentially displaced Murban from the refinery, with shipments to Ruwais hitting a record 397,000 b/d in June before dipping to 300,000 b/d last month.

This has freed up Murban (40° API, 0.7% Sulfur) which was previously refined domestically to be exported, with availability of the grade at record levels (MEES, 28 June) – key buyer Japan took a record 592,000 b/d of Murban for Q2. Adnoc also has the flexibility to refine third party crudes at Ruwais, which would result in additional Upper Zakum exports. It received cargoes of Iraq's Basrah Heavy (24° API, 4% Sulfur) in April and May (1mn barrels each month), but from June onwards has only received domestic crudes (MEES, 26 April).

### UPPER ZAKUM EXPORT REBOUND

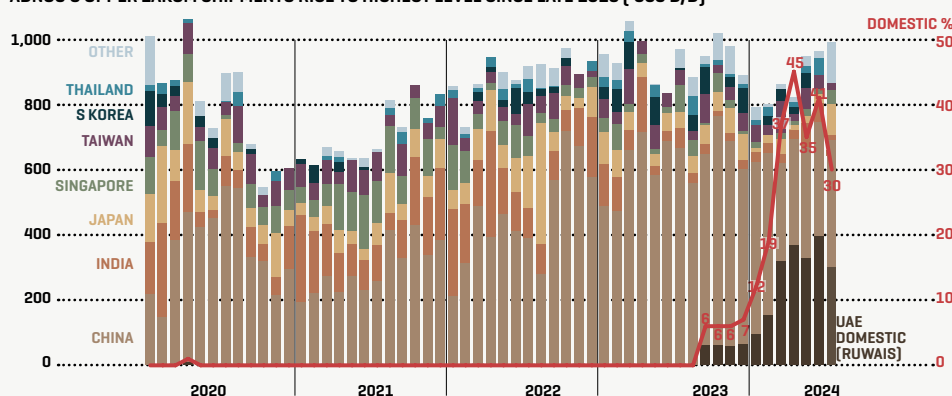
Ruwais is now absorbing a large proportion of total Upper Zakum shipments. As a share of total flows, domestic shipments hit a record 45% in April, but as total Upper Zakum shipments have been increasing since then, this has been trending down and dropped to 30% for July. Of total 985,000 b/d b/d shipments, 300,000 b/d was delivered to Ruwais for the month.

The July export figure of 686,000 b/d was the highest monthly figure since January's 698,000 b/d, and considerably more than April's low-point of 455,000 b/d. But despite the increases, Upper Zakum exports remain well down on last year's average of 925,000 b/d thanks to the CFP completion.

Total exports over the year-to-date are down by a third to 606,000 b/d, with Taiwan the only major buyer not to have had Upper Zakum supplies cut sharply. The biggest drop has come from the largest buyer of Upper

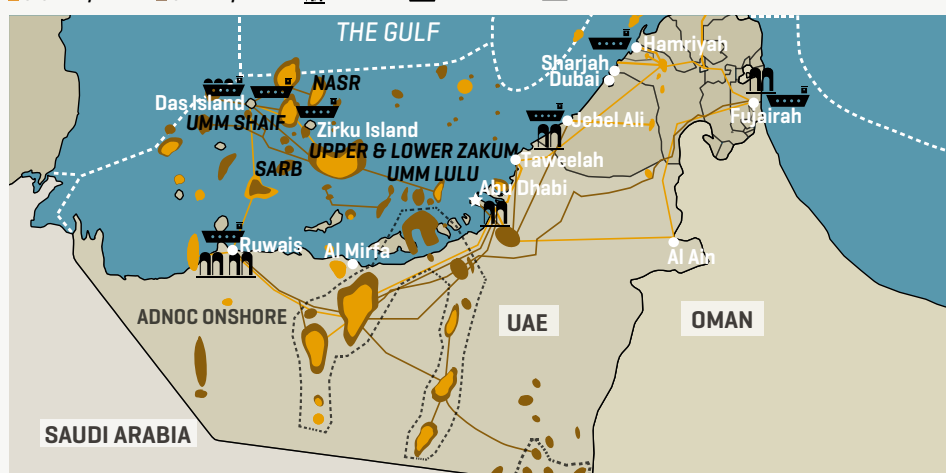
ADNOC'S UPPER ZAKUM SHIPMENTS RISE TO HIGHEST LEVEL SINCE LATE 2023 ('000 B/D)

SOURCE: KPLER, MEES.



### ADNOC KEY OIL AND GAS INFRASTRUCTURE

■ GAS FIELD/PIPELINE ■ OIL FIELD/PIPELINE 🏭 REFINERY 🚢 OIL TERMINAL 🚢 LNG EXPORT TERMINAL



Zakum, China, where volumes have slumped from 612,000 b/d to 391,000 b/d over the period. One of the largest Chinese buyers had been the 800,000 b/d ZPC refinery (51% owned by Rongsheng), but the finalization of a deal with Aramco for up to 480,000 b/d last July led to ZPC slashing imports of Upper Zakum.

The steep reduction in Upper Zakum exports earlier in the year exacerbated a tightening market for medium-sour crudes, but the recent increase in volumes now comes amid a weakening market for such grades. The recent opening up of the Trans Mountain pipeline has enabled an influx of Canadian medium-heavy volumes to be shipped from the US West Coast to China and other Asian markets (MEES, 5 July), while Saudi Aramco has increased its allocation to Chinese term customers for August loading.

Upper Zakum is deliverable into the key regional Platts Dubai medium-sour pricing benchmark, alongside Murban, Al Shaheen, Oman and Dubai. The Dubai price is set by the lowest-priced component of the basket, which has traditionally been Upper Zakum. More recently, Upper Zakum's role in setting the price has reduced, but a recent report by Renaissance Energy Advisors (REA) says that the grade returned to setting the price in July. ♦♦

### ADNOC'S SARB FIELD HITS 140,000 B/D CAPACITY

Adnoc says that production capacity at the Satrah al-Razboot (Sarb) field has reached 140,000 b/d, claiming a 25% increase "through the implementation of industry-leading advanced digital technologies."

The field is part of the Sarb & Umm Lulu concession (Adnoc 57%, TotalEnergies 20%, OMV 20%, Socar 3%) which has total production capacity in excess of 250,000 b/d. OMV reports net production of 50,000 b/d for the first half of the year, indicating total output of 250,000 b/d.

Adnoc says that remote monitoring, smart well operations and production management technologies which are integrated at the remote control center enable optimized real-time decision-making and yielding reduced operational costs and emissions. Upstream Executive Director Abdulmunim Saif al-Kindy says that "by deploying industry-leading technologies at Sarb field, we have increased production capacity while enhancing the safety, sustainability and efficiency of our operations, strengthening Adnoc's position as one of the world's lowest-cost and least carbon intensive energy producers."

# Chevron Close To Leviathan Expansion, Further Boost To 2.35bn cfd Under Study

*Israel's Leviathan partners have taken the next step towards 2.1bn cfd capacity expansion. 2.35bn cfd is next.*

**U**S major Chevron (39.66%, op) and its Israeli partners NewMed Energy (45.34%) and Ratio Energies (15%), at Israel's key 1.2bn cfd Leviathan field on 31 July approved a \$500mn budget to launch Front-End Engineering Design (FEED) for expansion of output capacity to 2.1bn cfd by 2019.

And both NewMed and Ratio, in separate 1 August filings, say the partners "are also exploring the possibility of laying a fourth subsea transmission pipeline" which would boost capacity to 2.35bn cfd. MEES learns this is part of the 'Phase 1B' expansion.

Having earlier this year approved \$75mn for the Phase 1B pre-FEED study, and having received guidance on how much gas they will be permitted to export by Israel's Energy Ministry (MEES, 28 June), the partners this week approved a further \$429mn budget to include the "procurement of long lead items," with an eye on taking a final investment decision (FID) during 1H25.

"To this end the Leviathan partners are promoting, inter alia, negotiations at various stages with potential customers, both in the domestic market and for export," NewMed says. If FID is taken during the estimated timeframe, NewMed says first gas from Phase 1B will be "between mid-2028 and mid-2029."

In the meantime, the Leviathan partners are also working on boosting capacity to 1.4bn cfd with the construction of a third flowline from the field to the platform, which is due to be ready by mid-2025 (MEES, 7 July 2023).

NewMed has made little secret that the partners will target Egypt as the key customer for increased volumes – and Cairo is desperate to take as much regional gas (and LNG) as it can get its hands on amid an ongoing gas crunch, importing a record 1bn cfd from Israel in 1H24 (MEES, 19 July).

"We are expecting more than 21bcm [2.1bn cfd] connectivity between Israel and Egypt by 2027, 2028 that will support phase two of Leviathan," NewMed CEO Yossi Abu said earlier this year (MEES, 24 May).

Previously-touted plans for FLNG-based Leviathan expansion now look unlikely (MEES, 19 April),

## ISRAEL GAS INFRASTRUCTURE & EXPORT FLOWS

■ GAS FIELD/PIPELINE ■ LNG EXPORT TERMINAL



not least due to the high perceived security risk (MEES, 19 July).

Chevron earlier this year took FID on expanding its other Israel field, Tamar, from 1.1bn cfd to 1.6bn cfd on the back on an expanded sales deal with Egyptian state-backed offtaker Blue Ocean Energy (MEES, 23 February).

## IN GOOD COMPANY

Chevron isn't the only firm expanding offshore Israel. London listed Greek firm Energean on 23 July took FID to develop the 1.2tcf 'Katlan discoveries' made in 2022 (MEES, 26 July). Here the firm plans 30km tieback of the Athena and Zeus fields to the 8bcm/y Energean Power FPSO, which currently processes around 600mn cfd of Karish and Karish North gas. Energean is also eyeing potential exports to Egypt, but it would require Israeli government approval.

Start-up of the Katlan fields is slated for 1H 2027 but that could be delayed if TechnipFMC, which has been contracted to perform key subsea EPCI work is spooked by the current escalation between Israel and Lebanon's Iran-back Hezbollah (see p10). ♦♦

## LIBYA CRUDE OUTPUT AT 11-YEAR HIGH...

Libya's crude output averaged 1.24mn b/d for July according to MEES estimates, the highest monthly figure since June 2013. This comes as drilling activity in recent months has approached post-revolution highs, with NOC claiming output gains across several concessions.

On a daily basis, the 1.277mn b/d output figure reported by NOC on the 25 July is also the highest in at least a decade.

Though instability is never far away (MEES, 5 July), one black cloud seems to have cleared. The local branch of NOC's key foreign drilling partner SLB in June threatened to quit the country over unpaid dues (MEES, 14 June). But speaking on his firm's Q2 earnings call on 19 July CEO Olivier Le Peuch namechecked Libya as an expected "growth engine" for the company going forward.

## ...BUT GAS DOWN...

Gas output has been faring less well. Recent figures reported by NOC imply average output of around 1.15bn cfd for June and July. And, with domestic demand rising with soaring summer temperatures, exports to sole market Italy have collapsed. Italian network operator Snam reports receipt of just 65.7mn m<sup>3</sup> (75mn cfd) of gas in July. June's 73mn cfd was the only lower figure in the past six years (MEES, 26 July).

The slump in volumes appears to at least in part be linked to ongoing work by operator Eni to upgrade Libya's key Mellitah processing complex to enable the tie in of new wells from the \$8bn 'Structures A&E' expansion project (MEES, 14 June).

## ...AS KEY PROJECT DELAYED

However first gas here has been put back, with Eni in its Q2 results on 29 July revealing that first gas is not now expected until 2027, back from the previous 2026 timeline for initial 'Structure A' volumes (MEES, 18 August 2023). Indeed, with only the smaller, 190mn cfd, Structure A increment now listed as a 2027 start-up, the inference is that the larger 600mn cfd 'Structure E' has been pushed back from 2027 to 2028 or beyond.





# Eni Expects No Egypt LNG For Foreseeable Future, Eyes Cyprus Tie-In

*Eni's Egypt gas output edged up for Q2 but is way down on earlier years on slumping Zohr output. Amid Egypt's overall gas shortage, it expects no LNG export cargoes for some time but eyes early-2025 FID for 2027 tie-in of Cyprus' Cronos.*

**E**ni, Egypt's top gas producer, ended a run of four consecutive quarterly declines as its output in the North African state edged up 1% to 1.219bn cfd for Q2. But this was still the second lowest since mid-2020 with average 1H output of 1.213bn cfd down 10% year-on-year and 19% below the peak first half figure of 1.492bn cfd hit in 2021 (see chart). Back then gross output from the firm's key Zohr gas field (Eni 50%op) was 2.96bn cfd: it has since slumped to 1.85bn cfd on water breakthrough.

Eni ascribes the modest Q2 bump to it doing its best to boost output in light of Egypt's overall gas and power shortages. Egypt's overall gas output remains on a firm downward trend hitting a seven-year low 4.996bn cfd for May (MEES, 12 July).

## NO LNG, STRAINED RELATIONS

Recent months have been marked by a not-so-private fallout between Eni and Cairo, a relationship that new oil minister Karim Badawi has been tasked to mend. He has already received assurances that the firm is planning to ramp-up exploration efforts while Cairo has also recently ratified the award of two offshore Mediterranean blocks awarded to Eni last year (MEES, 12 July).

Eni also has a 50% operator's stake at the 5mn t/y Segas LNG export facility at Damietta on the Mediterranean. Here the firm has received no assurance that it will be able to export LNG in the near term, given Egypt's large overall gas deficit.

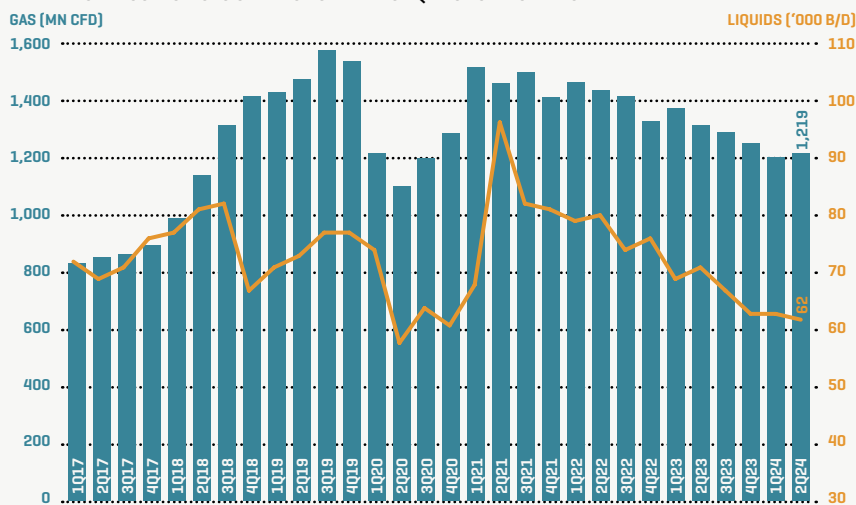
"We cannot rule out that a few cargoes may be exported next winter. But for sure, it is not very likely," exploration chief Guido Brusco told his firm's Q2 earnings call on 26 July, adding that Eni's assessment of this is based on media reports with zero communication received from Egyptian officials.

For now Egypt remains very much a net gas importer, having awarded tenders for 26 LNG cargoes for Q3 delivery on top of 1bn cfd imports from Israel. Despite this, the country continues to be plagued by rolling blackouts (MEES, 26 July).

## CYPRUS GAS TIE-BACK PLANNED

With Zohr in decline, and new

## ENI NET EGYPT OUTPUT: GAS UP FRACTIONALLY FOR Q2 BUT OIL DOWN AGAIN



SOURCE: ENI, MEES.

exploration yet to kick off, Eni's next substantial boost to its Egypt output could well come from the Chevron-operated 2.8tcf (gas in place) Nargis find (Chevron 45%op, Eni 45%, Tharwa 10%).

Here, Chevron eyes an appraisal well around the turn of the year. Under a best-case scenario for Egypt, a development plan would then follow. However, Chevron and Eni are likely to first press for improved fiscal terms including a higher gas price (MEES, 7 June).

Beyond this, MEES understands that Eni could take FID early next year on tie-back development of its 2022 2.5bn cfd Cyprus Cronos find to the under-utilized Zohr offshore infrastructure just 90km to the southeast. First gas is slated for 2027.

That said, Mr Brusco is equivocal on the prospects of either Cronos (Eni 50%op, TotalEnergies 50%) or other potential future developments rekindling Egypt's stalled hopes of using its two LNG liquefaction plants to become an East Med gas export hub.

"In terms of the attractiveness of Egypt as a potential [gas/LNG] hub, clearly there is this potential. Egypt has capacity in LNG, capacity of liquefaction, capacity of processing but this requires alignment between many stakeholders, private, but also government. I know that Egyptian government is working on that but – I mean – it is

quite a long journey," Mr Brusco says.

## SHELL BOOST?

One firm currently drilling and looking to boost output is UK major Shell, operator of Egypt's other liquefaction plant, the 7.2mn t/y Idku facility. The firm is currently drilling three wells as part of Phase 10 of its West Delta Deep Marine (WDDM) project, having recently extended its contract with Italy's Saipem for the Scarabeo-9 drillship. The extension is for a further three wells that will form Phase 11 of the project (MEES, 15 March).

Phase 10 comes with a spending commitment of \$222mn, with Shell hoping the phase will help add 150-200mn cfd of gas to waning current 300mn cfd output – way down from 2008's 2bn cfd peak.

## ENI OIL DOWN

Whilst Eni's Egypt gas output was up, albeit marginally, for Q2, oil output was down again at 62,000 b/d, the lowest quarter since 4Q 2020 and down more than a third from its 2021 peak of 96,000 b/d.

Eni's Egypt oil output is split between the Western Desert and the Gulf of Suez, with the latter assets, which produce around 40,000 b/d (gross), touted for sale earlier this year (MEES, 5 April). ♦♦

# Qatar Walks Away From Promising South African Asset

*QatarEnergy has made a number of exploration successes overseas, with South Africa's Block 11B/12B one of the most promising. But with South Africa yet to pass a new oil and gas law, QatarEnergy and its partners have walked away.*

**S**ince 2018, QatarEnergy has been staking out its position as an international oil company on the world stage, beyond its role as a national oil company. Its international upstream strategy has focused on low-cost farm-ins and partnerships in offshore exploration assets.

"We want to be with the main players," QatarEnergy CEO Saad al-Kaabi told MEES in 2019, "we don't see ourselves as a national oil company per se anymore, we look at ourselves as like any other IOC" (MEES, 1 November 2019).

Currently, Qatar holds offshore exploration stakes in 15 countries across Africa, South America, and North America as well as the Eastern Mediterranean. Only a few of these are currently operational. QatarEnergy has a 15% share in TotalEnergies E&P Congo which operates the Moho Nord and Moho Phase-Ibis projects that combined produce 140,000 b/d of oil. Qatar also nets modest volumes from the Shell-operated Parque das Conchas license in Brazil and from Exxon-operated assets in Argentina's Vaca Muerta shale play.

The Qatari firm's other producing asset is Brazil's Sepia field. QatarEnergy, alongside its partners, made the final investment decision for the second phase of the field development in May. The joint venture between Petrobras (30%op), TotalEnergies (28%), Petronas (21%), and QatarEnergy (21%) signed a contract for the construction of a 225,000 b/d floating production storage and offloading (FPSO) unit in addition to the already operating 180,000 b/d unit.

## SOUTH AFRICAN HURDLE

On 29 July, erstwhile operator TotalEnergies (45%) announced it was withdrawing from South Africa's Block 11B/12B following the 1 July decision of Canadian Natural Resources International to quit its 20% stake. QatarEnergy (25%) has also quit alongside Total, according to Africa Energy which remains at the asset via its 49% stake in South African consortium Main Street 1549 (the remaining 10%).

In announcing its exit, Total said that despite making the 2019 Brulpadda discovery and 2020's Luiperd holding combined resources of around 1bn barrel of oil equivalent

of gas and condensate (an implied 5tcf or so of gas), these "could however not be turned into a commercial development as it appeared to be too challenging to economically develop and monetize these gas discoveries for the South African market."

Total in 2022 said it was "negotiating the marketing conditions for gas and condensate with the South African authorities" (MEES, 21 April 2023). Given the geological promise of the asset, the challenges of monetizing appear to lie with the regulatory environment.

Africa Energy says that "Despite the challenges and delays encountered so far, the Company remains confident that the Block 11B/12B resources can be commercially developed."

## PUNISHING NEGOTIATIONS?

Negotiations between TotalEnergies and South African authorities had dragged on.

Africa Energy says that Total filed a provisional fast-track development plan in September 2022 and that it expected approval "12-18 months after application" with FID to follow shortly afterwards. But progress has failed to materialize.

Both Total and QatarEnergy declined to comment to MEES, whilst Africa Energy says QatarEnergy "did not provide any reason for their departure." But, given South Africa's current dire need for gas, and the success of the exploration phase, the hurdle appears to have been the contractual negotiations between the partners and the government.

In a 30 July opinion piece, executive chairman NJ Ayuk of industry group Africa Energy Chamber claims South Africa's oil ministry may be seeking to punish oil majors for exiting key investments in the country's downstream.

Total divested its 36.36% share in the 108,500 b/d Natref refinery in December and Shell announced in May its withdrawal from downstream operations including the 180,000 b/d Sapref refinery mothballed in 2022.

Whatever the reason, the loss of the South African fields is a blow to QatarEnergy's plans to expand globally. But it retains big hopes elsewhere.

## 2024: QUICK OFF THE BLOCKS

The majority of the company's overseas investments remain exploration blocks and so far this year QatarEnergy has followed through on increasing its global footprint. In May, it took 40% shares in Egypt's giant deepwater Cairo and Masry exploration blocks alongside Exxon which

holds 60% operator stakes (MEES, 17 May). QatarEnergy's investments add to the four assets it already held in Egypt: a 40% share in North Marakia, a 33% stake in Eni-operated East Port Said, and 17% stakes in Blocks 3 & 4 in the Red Sea.

QatarEnergy (40%) is also partnered with Exxon (60%, op) further north, offshore Cyprus in Blocks 5 and 10 where it plans to spud two wells late this year and early next. Block 10 is the site of the firm's only East Med discovery to-date, the c.3tcf Glaucus, made in 2019 (MEES, 1 March 2019).

In South America, QatarEnergy signed an 18 July deal with Chevron to take a 20% stake in block 5 offshore Suriname. This marks the company's fifth stake in the nascent oil producer's upstream sector.

The firm signed production sharing contracts for offshore blocks 6 and 8 in May 2023 after being awarded them in a 2021 bid round alongside TotalEnergies (40%op) and Suriname state firm Staatsolie (40% - MEES, 25 June 2021). This was followed by production sharing contracts signed in December for Block 65 (Shell 60%op, 40% QatarEnergy) and Block 64 (Total 40%op, Petronas 30%, QatarEnergy 30%).

## NAMIBIA: GOLDEN BLOCK

While the loss of the South African asset marks a significant setback for Qatar's overseas strategy, its crowning assets remain two blocks offshore Namibia. The firm holds a 45% stake in the Shell-operated PEL-39 block where the February 2022 Graff-1 discovery was followed up by the March 2023 Jonker-IX discovery. It also has a 30% stake in the Total-operated PEL-56 asset where the Venus-1 discovery was announced in February 2022.

Speaking about Venus, Total CEO Patrick Pouyanné said in the firm's Q2 results call on 25 July that appraisal work was finished and Total is working on the development scheme. "As you know, we have been quite clear with you it is positive. We have a lot of oil, but there is also some gas," he told the call. Pouyanné was more effusive at the beginning of 2023 when he said "I don't have words... we are maybe at the helm of a new golden block."

Speaking about Shell's Namibia assets CEO Wael Sawan struck a more cautious tone in the company's Q1 results call on 2 May. As the company is continuing appraisal drilling he says "we are not in a race here to be able to put a facility in place," he said adding "significant volume is clear, but complex in terms of the porosities and permeabilities." ♦♦



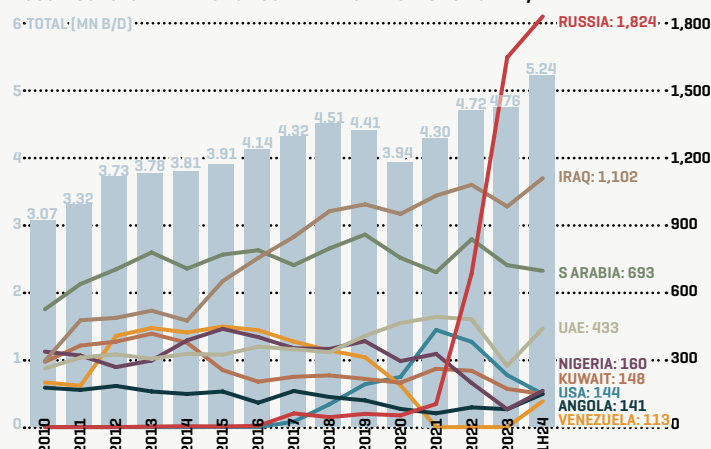
# INDIA CRUDE IMPORTS: RUSSIA SURGES AHEAD AS TOP SUPPLIER

\*India has surged up the rankings of global crude importers in recent years. Imports hit an annual record of 4.76mn b/d for 2023, making India a clear number three behind China [11.3mn b/d] and the USA [6.5mn b/d]. For 1H 2024 imports were higher still at 5.24mn b/d. Though this is essentially flat with the year-ago 1H 2023 figure, Indian oil demand and imports slumped in the second half of last year. In contrast, the IEA projects that Indian demand, and by extension imports, will remain firm through the remainder of 2024.

\*In terms of the composition of these imports, the major shift over the last two years has been the massive growth of Russia. From number nine supplier for 2021, Russia has surged to be a dominant number one since 2023, with volumes up a further 2% year-on-year at 1.82mn b/d for 1H 2024 including a monthly record 2.24mn b/d for May [see chart & table].

\*Russia's dominant 35% market share for 1H24 compares to 21% for longtime number one Iraq, which nevertheless notched up 10% year-on-year gains at 1.10mn b/d to put 2024 on pace to top 2022's annual record of 1.07mn b/d. In contrast, number three Saudi Arabia was down 14% at 693,000 b/d including a three-year monthly low 515,000 b/d for June. The UAE was the biggest gainer, up 120,000 b/d or 38% at 433,000 b/d for 1H 2024 for fourth position as Nigeria leapfrogged both the USA and Kuwait for number five.

INDIA'S TOP CRUDE SUPPLIERS ('000 B/D):  
RUSSIA SURGES AHEAD AS TOP SUPPLIER AS IMPORTS TOP 5MN B/D



SOURCE: INDIA COMMERCE MINISTRY, MEES.

INDIA 1H24 CRUDE IMPORTS ('000 B/D): TOP TWO RUSSIA AND IRAQ BOTH POST RECORDS

SOURCE: INDIAN MINISTRY OF COMMERCE, MINISTRY OF PETROLEUM & NATURAL GAS, MEES.

|                               | 1H24         | vs 1H23      | %            | 1H23         | 2Q24         | vs 1Q24      | %            | vs 2Q23      | %             | 1Q24         | 4Q23         | 3Q23         | 2Q23         | 2021         | 2022         | 2023         | Apr24        | May24        | Jun24        |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Middle East</b>            | <b>2,462</b> | <b>+42</b>   | <b>+1.7</b>  | <b>2,420</b> | <b>2,375</b> | <b>-176</b>  | <b>-6.9</b>  | <b>+268</b>  | <b>+12.7</b>  | <b>2,550</b> | <b>2,163</b> | <b>1,811</b> | <b>2,107</b> | <b>2,620</b> | <b>2,776</b> | <b>2,204</b> | <b>2,383</b> | <b>2,876</b> | <b>1,865</b> |
| % of total                    | 47.0         | +0.8         |              | 46.2         | 45.3         | -3.5         |              | +3.4         |               | 48.8         | 47.7         | 45.0         | 41.9         | 60.9         | 58.8         | 46.3         | 46.3         | 47.6         | 41.1         |
| Iraq                          | 1,102        | +98          | +9.7         | 1,004        | 1,069        | -65          | -5.8         | +93          | +9.5          | 1,135        | 1,050        | 849          | 977          | 1,025        | 1,073        | 977          | 947          | 1,394        | 866          |
| % of total                    | 21.0         | +1.9         |              | 19.2         | 20.4         | -1.3         |              | +1.0         |               | 21.7         | 23.2         | 21.1         | 19.4         | 23.8         | 22.7         | 22.2         | 18.4         | 23.1         | 19.1         |
| Saudi Arabia                  | 693          | -109         | -13.6        | 802          | 634          | -118         | -15.7        | -78          | -11.0         | 752          | 672          | 593          | 712          | 687          | 830          | 717          | 841          | 546          | 515          |
| % of total                    | 13.2         | -2.1         |              | 15.3         | 12.1         | -2.3         |              | -2.1         |               | 14.4         | 14.8         | 14.7         | 14.1         | 16.0         | 17.6         | 15.1         | 16.3         | 9.0          | 11.3         |
| UAE                           | 433          | +120         | +38.2        | 313          | 426          | -14          | -3.1         | +202         | +90.2         | 440          | 282          | 183          | 224          | 483          | 472          | 273          | 288          | 634          | 357          |
| Kuwait                        | 148          | -56          | -27.4        | 203          | 151          | +7           | +4.7         | +16          | +11.4         | 144          | 126          | 147          | 136          | 256          | 248          | 170          | 172          | 224          | 57           |
| Qatar                         | 48           | -22          | -31.6        | 70           | 52           | +9           | +20.3        | +4           | +9.0          | 43           | 25           | 31           | 48           | 34           | 54           | 49           | 47           | 78           | 31           |
| Oman                          | 39           | +12          | +42.4        | 27           | 42           | +6           | +16.7        | +31          | +291.3        | 36           | 8            | 8            | 11           | 130          | 92           | 18           | 87           | 0            | 39           |
| <b>North Africa</b>           | <b>54</b>    | <b>+9</b>    | <b>+20.4</b> | <b>45</b>    | <b>58</b>    | <b>+7</b>    | <b>+14.3</b> | <b>+28</b>   | <b>+92.4</b>  | <b>51</b>    | <b>56</b>    | <b>38</b>    | <b>30</b>    | <b>94</b>    | <b>86</b>    | <b>46</b>    | <b>107</b>   | <b>67</b>    | <b>0</b>     |
| Algeria                       | 35           | +35          | -            | 0            | 36           | +0           | +0.6         | +36          | -             | 35           | 23           | 0            | 0            | 15           | 39           | 6            | 107          | 0            | 0            |
| Egypt                         | 19           | -9           | -31.4        | 28           | 22           | +7           | +45.7        | -4           | -14.2         | 15           | 26           | 16           | 26           | 62           | 34           | 24           | 0            | 67           | 0            |
| <b>Africa [sub-Saharan]</b>   | <b>312</b>   | <b>+120</b>  | <b>+62.4</b> | <b>192</b>   | <b>282</b>   | <b>-58</b>   | <b>-17.2</b> | <b>+144</b>  | <b>+104.4</b> | <b>341</b>   | <b>187</b>   | <b>175</b>   | <b>138</b>   | <b>522</b>   | <b>389</b>   | <b>186</b>   | <b>252</b>   | <b>401</b>   | <b>194</b>   |
| Nigeria                       | 160          | +89          | +124.8       | 71           | 126          | -68          | -34.9        | +84          | +197.7        | 194          | 84           | 92           | 42           | 320          | 194          | 80           | 125          | 125          | 129          |
| Angola                        | 141          | +52          | +57.9        | 90           | 136          | -11          | -7.3         | +61          | +81.2         | 147          | 73           | 61           | 75           | 62           | 86           | 78           | 127          | 216          | 64           |
| <b>Americas</b>               | <b>454</b>   | <b>-55</b>   | <b>-10.9</b> | <b>510</b>   | <b>479</b>   | <b>+49</b>   | <b>+11.3</b> | <b>-27</b>   | <b>-5.4</b>   | <b>430</b>   | <b>408</b>   | <b>337</b>   | <b>506</b>   | <b>789</b>   | <b>623</b>   | <b>441</b>   | <b>598</b>   | <b>340</b>   | <b>499</b>   |
| USA                           | 144          | -119         | -45.2        | 264          | 226          | +163         | +258.5       | +18          | +8.6          | 63           | 199          | 182          | 208          | 424          | 372          | 227          | 240          | 134          | 303          |
| Venezuela                     | 113          | +113         | -            | 0            | 94           | -37          | -28.3        | +94          | -             | 132          | 0            | 0            | 0            | 0            | 0            | 0            | 151          | 62           | 70           |
| Colombia                      | 85           | +20          | +31.5        | 65           | 72           | -27          | -27.0        | +1           | +1.8          | 99           | 79           | 71           | 71           | 88           | 61           | 70           | 74           | 70           | 73           |
| Mexico                        | 66           | -23          | -25.7        | 89           | 64           | -5           | -7.3         | -55          | -46.2         | 69           | 53           | 31           | 118          | 145          | 99           | 65           | 132          | 28           | 30           |
| Brazil                        | 45           | -4           | -7.8         | 49           | 23           | -45          | -66.4        | -21          | -48.2         | 68           | 77           | 30           | 44           | 81           | 65           | 51           | 0            | 45           | 23           |
| <b>Europe/FSU</b>             | <b>1,891</b> | <b>-43</b>   | <b>-2.2</b>  | <b>1,934</b> | <b>1,996</b> | <b>+209</b>  | <b>+11.7</b> | <b>-100</b>  | <b>-4.8</b>   | <b>1,787</b> | <b>1,575</b> | <b>1,536</b> | <b>2,096</b> | <b>194</b>   | <b>782</b>   | <b>1,745</b> | <b>1,794</b> | <b>2,290</b> | <b>1,903</b> |
| Russia                        | 1,824        | +43          | +2.4         | 1,781        | 1,945        | +242         | +14.2        | -18          | -0.9          | 1,703        | 1,486        | 1,519        | 1,963        | 103          | 683          | 1,642        | 1,693        | 2,240        | 1,903        |
| % of total                    | 34.8         | +0.8         |              | 34.0         | 37.1         | +4.5         |              | -1.9         |               | 32.6         | 32.8         | 37.7         | 39.0         | 2.4          | 14.5         | 34.5         | 32.9         | 37.1         | 41.9         |
| Azerbaijan                    | 55           | +6           | +13.3        | 48           | 34           | -42          | -55.7        | -13          | -27.5         | 76           | 76           | 11           | 46           | 27           | 50           | 46           | 101          | 0            | 0            |
| <b>Asia/Oceania</b>           | <b>62</b>    | <b>-71</b>   | <b>-53.5</b> | <b>132</b>   | <b>54</b>    | <b>-16</b>   | <b>-22.7</b> | <b>-103</b>  | <b>-65.8</b>  | <b>69</b>    | <b>145</b>   | <b>129</b>   | <b>157</b>   | <b>84</b>    | <b>63</b>    | <b>135</b>   | <b>19</b>    | <b>65</b>    | <b>77</b>    |
| Malaysia                      | 35           | -27          | -42.9        | 62           | 38           | +6           | +17.0        | -57          | -59.8         | 32           | 0            | 21           | 95           | 44           | 46           | 36           | 19           | 47           | 48           |
| Brunei                        | 11           | +7           | +230.1       | 3            | 8            | -5           | -41.0        | +8           | -             | 13           | 7            | 0            | 0            | 19           | 7            | 3            | 0            | 18           | 5            |
| <b>TOTAL</b>                  | <b>5,236</b> | <b>+2</b>    | <b>+0.0</b>  | <b>5,234</b> | <b>5,243</b> | <b>+15</b>   | <b>+0.3</b>  | <b>+209</b>  | <b>+4.2</b>   | <b>5,228</b> | <b>4,534</b> | <b>4,026</b> | <b>5,034</b> | <b>4,302</b> | <b>4,718</b> | <b>4,757</b> | <b>5,152</b> | <b>6,040</b> | <b>4,537</b> |
| <b>Opec</b>                   | <b>2,684</b> | <b>+177</b>  | <b>+7.1</b>  | <b>2,507</b> | <b>2,537</b> | <b>-295</b>  | <b>-10.4</b> | <b>+367</b>  | <b>+16.9</b>  | <b>2,832</b> | <b>2,320</b> | <b>1,947</b> | <b>2,170</b> | <b>2,935</b> | <b>3,041</b> | <b>2,321</b> | <b>2,631</b> | <b>2,985</b> | <b>1,994</b> |
| % of total                    | 51.1         | +3.4         |              | 47.7         | 48.4         | -5.8         |              | +5.3         |               | 54.2         | 51.2         | 48.4         | 43.1         | 68.2         | 64.5         | 48.8         | 51.1         | 49.4         | 44.0         |
| <b>Crude Output</b>           | <b>588</b>   | <b>+4</b>    | <b>+0.7</b>  | <b>584</b>   | <b>584</b>   | <b>-7</b>    | <b>-1.1</b>  | <b>-5</b>    | <b>-0.9</b>   | <b>591</b>   | <b>584</b>   | <b>587</b>   | <b>590</b>   | <b>599</b>   | <b>590</b>   | <b>585</b>   | <b>592</b>   | <b>585</b>   | <b>577</b>   |
| <b>Refinery runs (mn b/d)</b> | <b>5.34</b>  | <b>-0.02</b> | <b>-0.4</b>  | <b>5.36</b>  | <b>5.38</b>  | <b>+0.09</b> | <b>+1.6</b>  | <b>+0.09</b> | <b>+1.7</b>   | <b>5.30</b>  | <b>5.16</b>  | <b>5.11</b>  | <b>5.29</b>  | <b>4.82</b>  | <b>5.08</b>  | <b>5.25</b>  | <b>5.28</b>  | <b>5.44</b>  | <b>5.42</b>  |
| <b>Oil Demand (mn b/d)</b>    | <b>5.29</b>  | <b>+0.17</b> | <b>+3.3</b>  | <b>5.12</b>  | <b>5.28</b>  | <b>-0.00</b> | <b>-0.0</b>  | <b>+0.18</b> | <b>+3.4</b>   | <b>5.29</b>  | <b>5.00</b>  | <b>4.75</b>  | <b>5.11</b>  | <b>4.33</b>  | <b>4.75</b>  | <b>5.00</b>  | <b>5.31</b>  | <b>5.28</b>  | <b>5.26</b>  |

## JAPAN CRUDE IMPORTS: UAE OVERTAKES SAUDI AS TOP SUPPLIER FOR 1H 2024

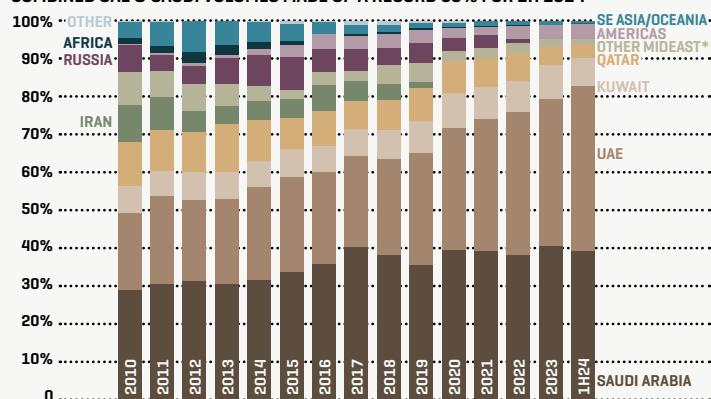
\*Japan's crude imports slid by 9% year-on-year to 2.35mn b/d for 1H 2024 putting this year on track for a new multi-decade low: 2023's 2.54mn b/d was the lowest since 1968.

\*For 2023, Saudi Arabia was Japan's top supplier with a 40% market share. But the UAE has surged well ahead of Saudi Arabia for 1H 2024. UAE volumes were up 4% year-on-year at 1.03mn b/d, more than 110,000 b/d ahead of Saudi Arabia which was down 13% at 917,000 b/d. That said, with supplies from other regions having fallen far further over the past decade, the combined market share of Japan's big two suppliers hit a record 83% for 1H 2024 [see chart].

\*Kuwait was a distant third on 171,000 b/d, down 30% amid a slump in the emirates overall crude exports as it maximizes runs at its new Al Zour refinery [MEES, 22 March].

\*Of UAE volumes, all except 2,700 b/d of Dubai crude for 1H 2024 came from Abu Dhabi, with Adnoc's flagship grade Murban top with 574,000 b/d, up 6% year-on-year for a 1H record, with Q2's 592,000 b/d a quarterly record.

**JAPAN'S CRUDE IMPORT SPLIT:  
COMBINED UAE & SAUDI VOLUMES MADE UP A RECORD 83% FOR 1H 2024**



\*OMAN, NEUTRAL ZONE & BAHRAIN FOR 1H 2024. SOURCE: JAPAN CUSTOMS, MEES.

**JAPAN CRUDE OIL & CONDENSATE IMPORTS ('000 B/D): UAE PULLS WELL AHEAD OF SAUDI FOR 1H24 WITH RECORD 44% MARKET SHARE**

|                     | 1H24         | vs 1H23       | %            | 1H23         | 2Q24         | vs 1Q24       | %             | vs 2Q23       | %             | 1Q24         | 4Q23         | 3Q23         | 2Q23         | 2021         | 2022         | 2023         | Apr24        | May24        | Jun24        |
|---------------------|--------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>MIDDLE EAST</b>  | <b>2,234</b> | <b>-262.4</b> | <b>-10.5</b> | <b>2,496</b> | <b>2,173</b> | <b>-121.9</b> | <b>-5.3</b>   | <b>-268.4</b> | <b>-11.0</b>  | <b>2,295</b> | <b>2,330</b> | <b>2,362</b> | <b>2,441</b> | <b>2,310</b> | <b>2,572</b> | <b>2,421</b> | <b>2,508</b> | <b>2,011</b> | <b>2,006</b> |
| % of total          | 95.2         | -1.2          |              | 96.4         | 95.7         | +1.0          |               | -0.7          |               | 94.7         | 92.5         | 95.3         | 96.4         | 92.7         | 94.1         | 95.1         | 95.6         | 95.3         | 96.4         |
| <b>UAE</b>          | <b>1,029</b> | <b>+36.2</b>  | <b>+3.6</b>  | <b>993</b>   | <b>1,008</b> | <b>-41.4</b>  | <b>-3.9</b>   | <b>-33.4</b>  | <b>-3.2</b>   | <b>1,050</b> | <b>936</b>   | <b>1,044</b> | <b>1,041</b> | <b>873</b>   | <b>1,037</b> | <b>991</b>   | <b>1,191</b> | <b>974</b>   | <b>860</b>   |
| Murban              | 547.4        | +30.1         | +5.8         | 517.3        | 591.6        | +88.4         | +17.6         | +36.7         | +6.6          | 503.2        | 463.7        | 562.9        | 555.0        | 462          | 513          | 515          | 667          | 557          | 551          |
| Das                 | 378.6        | +65.6         | +21.0        | 312.9        | 339.4        | -78.3         | -18.8         | -3.3          | -1.0          | 417.7        | 329.4        | 359.1        | 342.7        | 254          | 301          | 329          | 448          | 336          | 235          |
| Upper Zakum         | 53.8         | -25.9         | -32.5        | 79.7         | 44.9         | -17.9         | -28.5         | -11.2         | -19.9         | 62.8         | 81.8         | 66.9         | 56.0         | 85           | 150          | 77           | 69           | 32           | 34           |
| Mubarratz           | 31.5         | +3.7          | +13.2        | 27.8         | 27.3         | -8.4          | -23.5         | +0.0          | +0.1          | 35.7         | 27.0         | 28.4         | 27.3         | 33           | 29           | 28           | 5            | 47           | 30           |
| Umm-Lulu            | 14.7         | -19.9         | -57.4        | 34.6         | 4.9          | -19.7         | -80.2         | -33.8         | -87.4         | 24.6         | 23.3         | 21.7         | 38.7         | 22           | 27           | 29           | 3            | 2            | 10           |
| <b>Dubai</b>        | <b>2.7</b>   | <b>-17.5</b>  | <b>-86.5</b> | <b>20.3</b>  | <b>0.0</b>   | <b>-5.5</b>   | <b>-100.0</b> | <b>-21.8</b>  | <b>-100.0</b> | <b>5.5</b>   | <b>10.8</b>  | <b>5.4</b>   | <b>21.8</b>  | <b>16</b>    | <b>17</b>    | <b>14</b>    | <b>0</b>     | <b>0</b>     | <b>0</b>     |
| <b>Saudi Arabia</b> | <b>917</b>   | <b>-138.5</b> | <b>-13.1</b> | <b>1,056</b> | <b>883</b>   | <b>-68.2</b>  | <b>-7.2</b>   | <b>-84.8</b>  | <b>-8.8</b>   | <b>951</b>   | <b>1,084</b> | <b>918</b>   | <b>968</b>   | <b>974</b>   | <b>1,040</b> | <b>1,028</b> | <b>1,035</b> | <b>758</b>   | <b>860</b>   |
| Arab Extra Light    | 388.0        | -78.3         | -16.8        | 466.2        | 351.1        | -73.8         | -17.4         | -54.7         | -13.5         | 424.9        | 486.5        | 415.5        | 405.7        | 386          | 400          | 459          | 450          | 303          | 302          |
| Arab Light          | 331.2        | -40.5         | -10.9        | 371.7        | 311.4        | -39.6         | -11.3         | -31.3         | -9.1          | 351.0        | 398.4        | 307.1        | 342.7        | 379          | 424          | 362          | 382          | 227          | 327          |
| Arab Heavy          | 128.3        | -26.5         | -17.1        | 154.8        | 148.7        | +40.8         | +37.9         | -2.4          | -1.6          | 107.8        | 135.5        | 135.7        | 151.1        | 142          | 156          | 145          | 165          | 130          | 151          |
| Arab Medium         | 31.7         | +10.9         | +52.4        | 20.8         | 33.7         | +3.9          | +13.3         | +17.8         | +11.8         | 29.7         | 26.8         | 31.4         | 15.9         | 33           | 30           | 25           | 38           | 60           | 1            |
| Arab Super Light    | 37.9         | -4.1          | -9.7         | 42.0         | 38.1         | +0.4          | +1.1          | -14.2         | -27.2         | 37.7         | 37.2         | 28.1         | 52.4         | 34           | 31           | 37           | 0            | 38           | 77           |
| <b>Kuwait</b>       | <b>171.4</b> | <b>-72.2</b>  | <b>-29.6</b> | <b>243.6</b> | <b>168.7</b> | <b>-5.3</b>   | <b>-3.1</b>   | <b>-62.1</b>  | <b>-26.9</b>  | <b>174.0</b> | <b>181.9</b> | <b>225.7</b> | <b>230.8</b> | <b>208.6</b> | <b>221.0</b> | <b>223.5</b> | <b>156.9</b> | <b>175.5</b> | <b>173.5</b> |
| Kuwait Export Blend | 157.8        | -52.8         | -25.1        | 210.7        | 162.1        | +8.5          | +5.5          | -36.0         | -18.2         | 153.6        | 148.8        | 192.6        | 198.1        | 199.0        | 198.8        | 190.5        | 156.9        | 165.7        | 163.5        |
| Kuwait Super Light  | 13.5         | -19.4         | -58.9        | 32.9         | 6.6          | -13.8         | -67.5         | -26.0         | -79.7         | 20.4         | 33.1         | 33.1         | 32.7         | 9.6          | 23.5         | 33.0         | 0.0          | 9.8          | 10.0         |
| <b>Qatar</b>        | <b>88.0</b>  | <b>-54.5</b>  | <b>-38.2</b> | <b>142.5</b> | <b>87.2</b>  | <b>-1.8</b>   | <b>-2.0</b>   | <b>-45.7</b>  | <b>-34.4</b>  | <b>88.9</b>  | <b>101.7</b> | <b>121.1</b> | <b>132.9</b> | <b>194.7</b> | <b>199.5</b> | <b>126.8</b> | <b>92.2</b>  | <b>88.0</b>  | <b>81.3</b>  |
| Qatar Land          | 55.7         | +3.6          | +7.0         | 52.0         | 44.0         | -23.4         | -34.8         | -10.4         | -19.2         | 67.4         | 53.9         | 48.9         | 54.4         | 65.0         | 80.7         | 51.7         | 44.4         | 39.0         | 48.6         |
| Qatar Marine        | 21.7         | -31.9         | -59.5        | 53.6         | 27.6         | +11.7         | +73.5         | -9.5          | -25.5         | 15.9         | 26.4         | 37.5         | 37.0         | 35.9         | 54.7         | 42.7         | 16.3         | 33.6         | 32.6         |
| Al Shaheen          | 10.6         | -24.7         | -70.0        | 35.4         | 15.6         | +10.0         | +177.5        | -23.0         | -59.5         | 5.6          | 21.4         | 26.8         | 38.6         | 79.1         | 60.7         | 29.7         | 31.5         | 15.4         | 0.0          |
| <b>Oman</b>         | <b>13.7</b>  | <b>-19.5</b>  | <b>-58.7</b> | <b>33.1</b>  | <b>10.9</b>  | <b>-5.5</b>   | <b>-33.5</b>  | <b>-27.6</b>  | <b>-71.6</b>  | <b>16.4</b>  | <b>16.3</b>  | <b>38.1</b>  | <b>38.5</b>  | <b>14.2</b>  | <b>30.6</b>  | <b>30.1</b>  | <b>16.6</b>  | <b>0.0</b>   | <b>16.6</b>  |
| <b>Neutral Zone</b> | <b>12.3</b>  | <b>-5.6</b>   | <b>-31.4</b> | <b>17.9</b>  | <b>15.1</b>  | <b>+5.5</b>   | <b>+57.8</b>  | <b>-9.6</b>   | <b>-38.9</b>  | <b>9.5</b>   | <b>4.8</b>   | <b>4.8</b>   | <b>24.7</b>  | <b>8.0</b>   | <b>8.6</b>   | <b>11.3</b>  | <b>15.4</b>  | <b>15.2</b>  | <b>14.7</b>  |
| <b>Bahrain</b>      | <b>2.6</b>   | <b>-8.4</b>   | <b>-76.3</b> | <b>11.0</b>  | <b>0.0</b>   | <b>-5.2</b>   | <b>-100.0</b> | <b>-5.3</b>   | <b>-100.0</b> | <b>5.2</b>   | <b>5.3</b>   | <b>10.5</b>  | <b>5.3</b>   | <b>35.3</b>  | <b>35.0</b>  | <b>9.4</b>   | <b>0.0</b>   | <b>0.0</b>   | <b>0.0</b>   |
| <b>AMERICAS</b>     | <b>96.4</b>  | <b>+30.7</b>  | <b>+46.7</b> | <b>65.7</b>  | <b>78.0</b>  | <b>-36.9</b>  | <b>-32.1</b>  | <b>+16.5</b>  | <b>+26.8</b>  | <b>114.9</b> | <b>157.2</b> | <b>80.8</b>  | <b>61.5</b>  | <b>50.2</b>  | <b>89.8</b>  | <b>92.6</b>  | <b>84.5</b>  | <b>87.2</b>  | <b>61.9</b>  |
| USA                 | 66.4         | +27.8         | +72.1        | 38.6         | 46.6         | -39.6         | -45.9         | +17.8         | +61.7         | 86.2         | 100.3        | 35.8         | 28.8         | 8.1          | 27.4         | 53.5         | 42.8         | 67.5         | 28.9         |
| Ecuador             | 30.0         | +2.8          | +10.5        | 27.1         | 31.3         | +2.7          | +9.6          | -1.3          | -4.1          | 28.6         | 46.0         | 44.9         | 32.7         | 40.1         | 51.1         | 36.4         | 41.7         | 19.7         | 33.0         |
| Australia           | 7.6          | +0.3          | +4.5         | 7.3          | 9.9          | +4.5          | +85.3         | -2.0          | -17.2         | 5.3          | 11.1         | 17.0         | 11.9         | 4.5          | 6.3          | 10.7         | 21.4         | 4.4          | 4.0          |
| Indonesia           | 3.9          | -1.8          | -32.2        | 5.7          | 6.0          | +4.2          | +238.5        | -2.2          | -26.6         | 1.8          | 6.8          | 1.7          | 8.2          | 3.0          | 1.0          | 5.0          | 10.3         | 7.7          | 0.0          |
| Vietnam             | 3.2          | +1.8          | +123.4       | 1.4          | 3.3          | +0.2          | +5.6          | +3.3          | -             | 3.1          | 6.0          | 14.7         | 0.0          | 5.5          | 10.5         | 5.9          | 0.0          | 0.0          | 9.9          |
| Brunei              | 1.7          | -3.2          | -64.9        | 4.9          | 0.0          | -3.4          | -100.0        | -3.2          | -100.0        | 3.4          | 3.3          | 3.3          | 3.2          | 3.1          | 3.2          | 4.1          | 0.0          | 0.0          | 0.0          |
| Russia              | 0.0          | -4.1          | -100.0       | 4.1          | 0.0          | -             | -             | -             | -             | 0.0          | 0.0          | 0.0          | 0.0          | 89.3         | 35.5         | 2.0          | 0.0          | 0.0          | 0.0          |
| <b>TOTAL</b>        | <b>2,347</b> | <b>-243.9</b> | <b>-9.4</b>  | <b>2,591</b> | <b>2,270</b> | <b>-153.3</b> | <b>-6.3</b>   | <b>-261.7</b> | <b>-10.3</b>  | <b>2,423</b> | <b>2,518</b> | <b>2,480</b> | <b>2,532</b> | <b>2,493</b> | <b>2,734</b> | <b>2,544</b> | <b>2,624</b> | <b>2,110</b> | <b>2,081</b> |
| o/w Opec            | 2,130        | -180.2        | -7.8         | 2,310        | 2,075        | -109.5        | -5.0          | -189.8        | -8.4          | 2,184        | 2,207        | 2,193        | 2,265        | 2,076        | 2,311        | 2,254        | 2,399        | 1,923        | 1,908        |
| Opec %              | 90.7         | +1.6          |              | 89.2         | 91.4         | +1.3          |               | +1.9          |               | 90.1         | 87.6         | 88.4         | 89.5         | 83.3         | 84.6         | 88.6         | 91.4         | 91.1         | 91.7         |

SOURCE: METI, MEES CALCULATIONS.



# Israeli Assassinations Risk A New Wave Of Regional Retaliations

***All eyes are on Iran to see how it responds to Israel's audacious assassination of Hamas political leader Ismail Haniyeh in Tehran this week. The killing has escalated the risks of a wider conflict, with oil prices rising accordingly.***

A red banner, symbolic in Iran of vengeance after a major assassination, was raised at the Jamkaran Mosque in the City of Qom just a day after the 31 July assassination in Tehran of Hamas political leader Ismail Haniyeh. Mr Haniyeh had been in Tehran for the inauguration of Iran's new President Masoud Pezeshkian and also met with Supreme Leader Ayatollah Ali Khamenei.

Israel, in keeping with its normal silence on such incidents, has not claimed the attack. But there is no doubt who was behind it. Israel has previous form for carrying out bold assassinations of prominent figures linked to Iran, although this marks the first assassination of such a leading political figure on Iranian soil. Mr Haniyeh was at a state guest house adjacent to the Saadabad Palace which is used for government ceremonies and for which the IRGC provides security. The New York Times reports that the bomb had been placed up to two months previously.

The Israeli government has vowed to kill all Hamas operatives and leaders involved in the 7 October assault on its territory, and on 1 August announced that it has verified the death of Hamas' shadowy military-wing commander Muhammed Deif in a July strike in Gaza. Israel has now eliminated two of the group's most prominent figures. Hamas has yet to confirm Mr Deif's death.

## IRAN VOWS REVENGE

On 1 August, US Secretary of State Antony Blinken said "It's urgent that all parties make the right choices in the days ahead," but Mr Khamenei has left observers in no doubt that Iran intends to hit back against Israel.

"The criminal, terrorist Zionist regime martyred our dear guest [Mr Haniyeh] on our territory... We see avenging his blood our duty," he said in a 31 July speech. Hamas too has vowed retaliation.

Jamkaran's banner was previously raised before Iranian retaliatory strikes on a US base in Iraq following the assassination of IRGC Quds Force Commander Qassim Soleimani in 2020 and more recently before Iran carried out its first-ever direct attack on Israel in April following the latter's strike on its consulate in Damascus which killed high-ranking IRGC officers (MEES, 19 April).

It's unclear how Iran can meaningfully hit

back at Israel itself. While Israeli Prime Minister Benjamin Netanyahu is unpopular with many senior US politicians, the US remains a staunch defender of Israel and, as it did in April, would use its regional military assets to intercept any Iranian strikes against Israel.

With the assassination coming just hours after his inauguration, it puts Mr Pezeshkian in an extremely difficult position. The powerful IRGC will be agitating for a response, but the new president campaigned on a platform of reviving nuclear talks with the West in the hopes of easing crippling sanctions and improving the economy. His victory was therefore seen as a setback for the IRGC.

If Iran is to exact a meaningful response, the likeliest way in which it could successfully do so would be through its proxy groups in the region. However, the New York Times citing IRGC members present at a 31 July national security meeting, reports Mr Khamenei's preference for a direct strike on Israel.

Twelve hours before Mr Haniyeh's assassination, Israel also claimed responsibility for a 30 July drone strike on Hezbollah's south Beirut stronghold, killing Fuad Shukur, the Lebanese group's top military commander. The attack was in retaliation to a rocket strike that killed 12 Druze children in the Israeli-occupied Golan Heights. Hezbollah has denied involvement. Iran's Fars News revealed that an Iranian military advisor was also killed with Mr Shukur.

Israel has prepared contingency plans for its energy sector should another front with Hezbollah open in the north (MEES, 19 July). Hezbollah's strategy has largely been a war of attrition against Israel in support of Gaza, with both parties engaging in frequent tit-for-tat attacks. But these unwritten rules have now been tossed following the Golan attack and the Beirut strike.

Whilst Hezbollah chief Hassan Nasrallah had managed to keep his group in check, it will now be under pressure to react, while in Iraq, Iran backed militias have recently broken months of détente by renewing attacks on US forces in the country, leading to an American strike south of Baghdad on 30 July. With Yemen's Houthis seething after Israel's raids, Iran's 'axis of resistance' needs no persuasion to step up attacks.

However, US Secretary of Defense Lloyd Austin said on 31 July that he does not "see a return to where we were several months ago" when the US troops in Iraq and Syria were under daily barrage. "I don't think war is inevitable," he adds in reference to a pollable broader regional conflict, "There's always room and opportunities for diplomacy."

## GAZA PEACE TALKS DERAILED

Mr Haniyeh's Tehran assassination

would appear to have derailed hopes for a Gaza ceasefire in which Hamas would release Israeli hostages in return for urgently-needed humanitarian relief for Gazans. Optimism had been rising that Washington, Doha and Cairo were closing on a deal.

Since abandoning his position as Hamas' leader in Gaza, 62-year old Mr Haniyeh acted as its most senior political leader and mouthpiece to the outside world, largely moving between Qatar, Turkey and Iran.

A founding member of Hamas and a protégé of its spiritual leader Ahmed Yassin who was assassinated in 2004, Mr Haniyeh was jailed by Israel in the 1980s and 1990s, then expelled in 1992 to Lebanon.

In 2006, he served briefly as Palestinian PM after Hamas won legislative elections against rival group Fatah, but armed conflict between both sides and the ensuing Israeli security intervention saw Hamas consolidate its power in Gaza, ruling the strip with a heavy-hand.

He was considered one of the more doveish Hamas elements, hence his involvement in negotiating a ceasefire in Gaza despite the loss of his sons and several grandchildren to Israeli strikes in April. But ultimate political power over the group is widely believed to lie with his successor as Hamas leader in Gaza Yahya al-Sinwar – considered, alongside Mr Deif, as chief architect of the 7 October attack.

Opting to assassinate Mr Haniyeh in Tehran serves to embarrass Iran, but his presence there opened up an opportunity which Israel took. Israel has reportedly assured his host-nation Qatar, which enjoys strong ties to Washington and houses its troops, that it will not assassinate Hamas leaders on its soil. Israel also refrained from killing Mr Haniyeh in Turkey, a Nato member, out of concern of further deterioration in Israeli-Turkish relations.

## BAPTISM BY FIRE

Iran's expected retaliation will also serve to strengthen the IRGC's grip over domestic affairs following the recent election of the reformist-aligned Mr Pezeshkian (MEES, 12 July).

Before the assassination, attention was on the President's potential nominees to fill the foreign affairs portfolio with media reports pointing to former deputy foreign minister and chief nuclear negotiator Abbas Arghachi. Mr Arghachi and former foreign minister Javad Zarif were key players in reaching Iran's 2016 nuclear deal with the West. The late foreign minister Hossein Amir-Abdollahian was an IRGC-favorite and enjoyed access to the Supreme Leader. ♦♦

# Montfort Plans August Restart Of Fujairah Refinery

**T**rading firm Montfort aims to restart its 67,000 b/d Fort Energy refinery in Fujairah this month. The refinery has been offline since May as the conflict in Sudan has shut off access to its primary feedstock – South Sudan’s Dar Blend (26° API, 0.12% sulfur) (MEES, 26 July).

Montfort bought the refinery from Germany’s Uniper last year, alongside the Private Office of Sheikh Ahmed Dalmook Al Maktoum (MEES, 14 July 2023). Alongside the neighboring 80,000 b/d Vitrol Refinery, the Fort Energy plant is a key producer of IMO-compliant very low sulfur fuel oil (VLSFO), and its closure has resulted in an increase in VLSFO imports to Fujairah as a result.

Montfort’s Head of Corporate Affairs Joya Chehab says that “Montfort and The Office of H.H. Sheikh Ahmed Dalmook Al Maktoum remain committed to the refinery and take a long-term view on managing the refinery. As with any refinery there will be fluctuations in production over time due to a variety of usual operational and market factors.” It’s unclear what Montfort’s plans are for sourcing alternative feedstock, but Ms Chehab says “we do have supply arrangements in place.”

## RETURNING TANKS

“The Montfort group has a broad range of profitable businesses and investments, of which the refinery is only a minor part. The trading and shipping businesses continue to do well. As a result, the Montfort group is financially robust,” says Ms Chehab.

As well as operating the refinery, Montfort also leases storage tanks at three terminals in Fujairah to support its trading and bunkering operations. MEES understands that the three terminals are VTTI, MROTC and Mena Terminals (formerly GTI Fujairah).

However, multiple sources say that Montfort has handed back the six dirty products (fuel oil) tanks that it leased from Mena Terminals. Mena Terminals was purchased by the Mercantile & Maritime Group of regional trading veteran Murtaza Lakhani last year, and in addition to the six dirty products tanks totaling 230,000 m<sup>3</sup> (1.45mn barrels) capacity it also has eight clean products tanks totaling 120,000 m<sup>3</sup>.

“I can confirm that all dirty tanks are gone” says one industry source, adding that “they’ve retained the gasoline operation.” Another notes “I heard they returned fuel oil tanks, but they kept Mogas [motor gasoline].” In response to a question over returning the tanks, Ms Chehab says “our strategy is to optimize our storage requirements through long term, short term, and spot storage arrangements to address the different grades and quantities, of course this necessitates changes over time.”

The decision to return the tanks doesn’t appear to be directly linked to any problems with the refinery, “bear in mind there’s tankage under Montfort and there’s tankage under Fort Energy,” notes a source. They add that it’s difficult to say whether the move reflects any operational difficulties for Montfort, and that “the market is backwardated and many players have slowed down their activities.” ♦♦

## Port Sudan De Facto Capital, Refinery Planned

Sudan’s army-led government is seeking new oil and electricity projects in the Red Sea city of Port Sudan, which is becoming the center of government for the war-torn country with Libya-style partition the new reality (MEES, 12 April).

The government led by the Sudanese Armed Forces (SAF) announced on 29 July that oil minister Mohieddine Saeed would lead a delegation of Sudanese oil and electricity companies to China in late August, proposing several projects including “building a new refinery in Port Sudan.”

This would mark “serious steps” towards “restoring Sudan’s oil [sector] to its original state,” the ministry said.

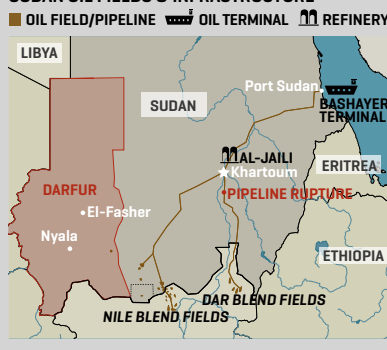
After losing most of the capital Khartoum to the rival paramilitary Rapid Support Forces (RSF) early on in Sudan’s 15-month conflict, the army command and government officials relocated to Port Sudan on the Red Sea (MEES, 12 July).

Their area of control has since been focused on the east and south-east of Sudan, including the country’s 750km Red Sea coastline (see map).

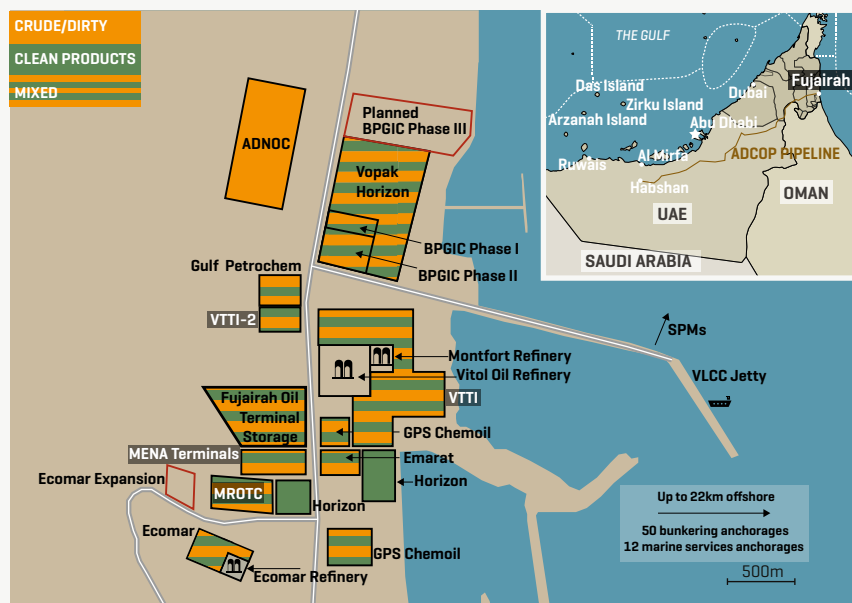
The ministry also said the proposals will include “rehabilitating” the 100,000 b/d al-Jaili refinery north of Khartoum, which “was destroyed by the war” (MEES, 24 May). Both rivals have blamed each other for extensive damage to the country’s only large-scale refinery, including several explosions and fires that have damaged fuel storage tanks (MEES, 2 February).

In July 2023, just three months into the conflict, operations came to a complete halt at the key facility, which covered 60% of domestic oil products demand prior to the war, according to government figures.

### SUDAN OIL FIELDS & INFRASTRUCTURE



### FUJAIRAH OIL STORAGE FACILITIES AND REFINERIES





# Neom's Sustainable Power & Water Plans: Enowa CEO Speaks With MEES

*Saudi Crown Prince Muhammad bin Salman plans for Neom to be the 'land of the future'. Neom's power and water subsidiary Enowa sees the blank canvas as a huge opportunity to build a 100% renewably-powered city unencumbered by legacy hydrocarbon-focused assets. Enowa CEO Peter Terium sat down with MEES to discuss the project.*

**T**he city of Neom is one of the most prominent symbols of Saudi Arabia's Vision 2030. First announced by Crown Prince Muhammad bin Salman in 2017 as "the land of the future, where great minds and talents can create ground-breaking ideas and think outside the box," Saudi Arabia is investing billions into developing the city on its north-western coast.

Satellite imagery shows a hive of activity, with construction clearly stepping up over the past year. Key contracts are being awarded, including a recent \$1bn contract for the development of Terminal 1 of the 'Port of Neom' at Duba. However, the viability of some of Neom's most audacious goals, such as a 170km long, 500-meter high "mirrored architectural masterpiece" (The Line), has been questioned by many, and Bloomberg reports that Neom is expected to be allocated 20% less than its targeted budget for this year. What is undeniable is that the government's desire to build a radically new city continues to attract attention around the globe.

Central to the development of Neom is Enowa, which has responsibility for developing a 100% renewable power and water system for the city. Neom has been established as a closed joint stock company, wholly owned by sovereign wealth fund PIF. Enowa in turn is a wholly owned, but separate, subsidiary of Neom.

"Enowa is the energy and water company of Neom. And our mission is to build a sustainable water and renewable energy system for the whole of Neom," CEO Peter Terium tells MEES. "We are a separate part of Neom, and this makes it easier to interact with suppliers, partners, customers, and also allows us to have a dedicated board that focuses on the energy and water aspects, whereas the board of Neom, of course has a much, much broader remit."

Financing for Enowa's capital intensive projects flows from PIF to Neom and on to Enowa. In implementing its projects, the firm works alongside a number of major counterparties; "we also work a lot with the Ministry of Energy, who basically manages the whole energy ecosystem in KSA, as well as the regulator Sera, it also includes Aramco

on certain aspects and SEC on the energy side. On the water, it's the same and also Mera [Ministry of Environment, Water and Agriculture] and the National Water Company."

The ultimate plan is for Neom to be 100% renewable by 2030, but in the interim it will receive electricity from thermal power plants further down the coast. A contract was signed with SEC and Hitachi Energy in May 2023 for the development of up to three high voltage direct current (HVDC) links with combined capacity of 9GW, with the first 3GW link due to be operational in 2027 (MEES, 18 August 2023). As for water, Neom will initially receive desalinated water from an existing plant at Duba, just outside Neom.

Creating a 100% renewably-powered city has never been done before. But while there is no precedent for this, Mr Terium notes "it's not that we are doing things that are so groundbreakingly new, but they are groundbreaking because they are at such a scale."

## BLANK SLATE DEVELOPMENT

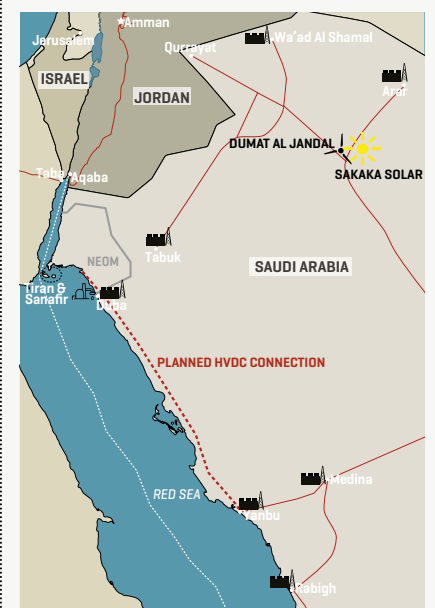
As governments around the world chase net zero targets, they will have to overhaul their existing power generation, transmission and distribution networks at great expense in order to supply low-carbon electricity to their industrial facilities and populations. With a 2060 net zero target, Saudi Arabia is no exception to this and the Saudi Electricity Company (SEC) invested \$9.85bn in its transmission and distribution systems last year (MEES, 22 March).

Neom, however, has a chance to do things very differently. As a brand-new city being built from scratch there is no existing infrastructure to overhaul. While this means the task at hand for Enowa is challenging, it also means that Enowa is free of the encumbrances of legacy energy infrastructure designed to supply energy from thermal power plants.

One of the big challenges countries are facing as they switch out thermal power plants for renewables is grid stability. Thermal plants' gas and steam turbines store energy in rotating generators (rotating mass), which reduce fluctuations in the grid and prevent blackouts. Replacing them with solar plants and wind farms means that alternatives such as synchronous condensers

## NEOM'S DEVELOPMENT IN NORTHWEST SAUDI ARABIA

■ ELECTRICITY GRID ■ POWER PLANT ■ DESALINATION PLANT



need to be installed to maintain stability.

At Neom, this won't be a problem, says Mr Terium. "Rotating mass has been used in the past because it was convenient, it was there anyway... here the from-scratch development of a grid with the newest technologies allows us to also manage the inertia that is not there in the form of traditional turbines." He points to digital solutions to create inertia functions that you otherwise would have in a grid.

The intermittency of renewables is also an issue that must be addressed, and again Mr Terium is confident that by designing a grid specifically intended to handle 100% renewables rather than retrofitting existing infrastructure, Neom will be ahead of the game. "Intermittency comes very often and happens very quick. So your grid infrastructure, and your whole communication infrastructure needs to be built up in a way that it can handle that. Traditional energy grids don't have this." Neom's 'smart grid' will have built-in high-tech communication infrastructure to enable quick adjustments to

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cope with variances in supply and demand.

## STORAGE SYSTEMS KEY

Central to ensuring 24/7 electricity provision and grid stability is storage capacity. "It is not one silver bullet, we will have a portfolio of storages," says Mr Terium. This portfolio is expected to include a wide variety of storage-types, including traditional forms such as pumped-storage and lithium-ion batteries, as well as emerging long-duration forms. Each of the different technologies will serve a different function, creating a complementary portfolio rather than a series of discrete facilities.

Hydrogen has been touted by many as a way to manage the intermittency of renewables. Solar power for instance can be used to produce green hydrogen during the day, which can then be burned in power plants at night. However, this is not set to be a major part of the mix at Neom. "I would be a bit careful in considering hydrogen as the storage alternative," says the Enowa CEO, highlighting the conversion losses throughout the process, "that's not the most promising cost-efficient solution, but it will play a role in the whole portfolio."

Mr Terium is confident that intermittency will also be less of an issue at Neom than elsewhere given its natural attributes – attributes which led him to previously describe Neom as a "pot of gold" (MEES, 28 October 2022). Some regions are well suited to wind farms, and some are well suited to solar, but Neom is rare in being well suited to both, he says.

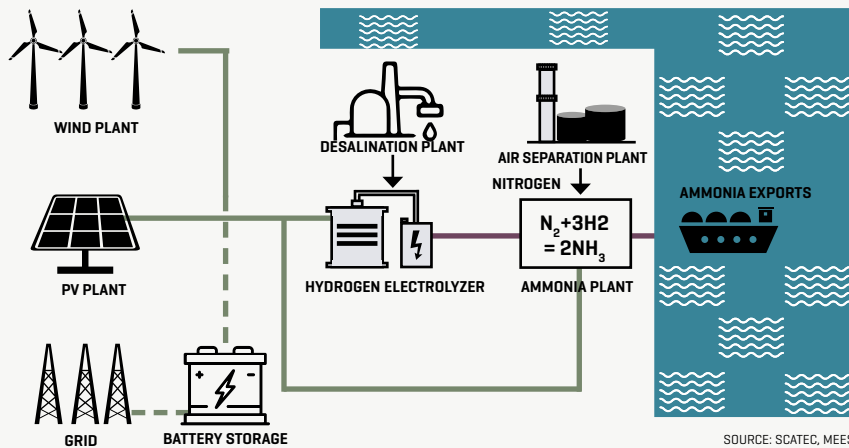
For solar, the sun provides high levels of irradiation from early morning until late afternoon, with little seasonal variation. However, wind is where Neom really stands out. "Wind here is not weather related, it is a physical phenomenon. The sun heats up the land during the day. When the night comes, that hot land gives upwards radiation to the air, and that movement of the air every evening when it gets colder is unique to just a few regions in the world, such as Neom. As a result, we have sun in the day, wind in the night."

Work is already underway to capitalize on this renewable energy potential. The Neom Green Hydrogen Company (NGHC: Neom 33%, Acwa Power 33%, AirProducts 33%) is currently developing its own solar and wind power generation plants to provide electricity for its under-development 1.2mn t/y green ammonia facility. Satellite imagery shows clear progress being made at the solar site.

As these facilities will provide electricity solely to NGHC, Enowa is tendering for separate renewables plants to power Neom. Tenders are out for the 800MW Shiqri solar plant and the 1.2GW Gayal wind farm, with Enowa currently evaluating the bids before moving into contract negotiations. The facilities are intended to begin generating renewable electricity in 2026. Enowa also plans to put out tenders for the next round of

## GREEN HYDROGEN/AMMONIA FROM TURBINE TO TANKER

POWER SUPPLY/FLOW ■ HYDROGEN CHAIN



SOURCE: SCATEC, MEES.

power projects before the end of the year. All projects will be developed on an IPP basis.

## DEMAND SIDE MANAGEMENT CRUCIAL

"The most important aspect of storage is demand side management," says Mr Terium. "When I say demand side management, it means that your customers receive a bonus, or a rebate, or a better price if their energy consumption is in line with our production of electricity."

Enowa is optimistic that it will be able to utilize this untapped storage flexibility because Neom will be its own jurisdiction, distinct from the rest of Saudi Arabia. "We're not only a special trade zone, we are a special zone that is due to have its own legislation, which means also its own energy law and regulation."

This will allow Enowa to sell electricity at cost-based commercial pricing, rather than at subsidized prices. It will also enable it to operate with dynamic pricing: "if your cost of producing electricity varies during the day, then you need to also offer tariffs that vary during the day."

Again, the from-scratch development of Neom's energy sector enables Enowa to implement such practices with much less friction than seeking to retroactively roll them out in established jurisdictions.

## GREEN HYDROGEN: EXPORT ONLY

The centerpiece of Neom's planned industrial developments is the NGHC facility, which once fully operational by end-2026 will use 4GW of electricity to produce 237,000 t/y of green hydrogen and convert this into 1.2mn t/y of green ammonia for onwards export.

All of the NGHC volumes are to be exported, with none expected to be used for local consumption. "This complex is designed so that the ammonia production and the hydrogen production and its capacities are fine tuned to each other."

Currently, Neom has one 20MW electrolyzer operational at its Hydrogen Innovation and Technology Center (HIDC). This electrolyzer is identical to the ones which NGHC will use, and was installed by the joint venture so that its staff can train on a live-model before the main plant is operational.

Last October, Enowa signed a joint

development agreement with Aramco to construct and establish a "first-of-its-kind synthetic electro fuel (e-fuel) demonstration plant." The facility will use hydrogen produced from HIDC to produce 35 b/d of low-carbon, synthetic gasoline from green hydrogen and captured carbon dioxide (CO<sub>2</sub>).

With Neom being an early-mover in the field of green hydrogen, the Enowa CEO says there is a lot of interest from hydrogen technology companies to locate in Neom "and sit close to where these things happen." Should this cluster expand and local demand for hydrogen rise, then another electrolyzer could be added at HIDC; "but its not going to be mass production. That is the domain of the [NGHC] joint venture, and they are much better at it."

## DESALINATION RETHINK

Enowa is also looking to push the technological boundaries when it comes to providing desalinated water to Neom. In 2022, it signed a joint development agreement (JDA) with Japan's Itochu and France's Veolia for a 100% renewable powered Zero Liquid Discharge desalination plant with capacity to produce 500,000m<sup>3</sup> which was planned to begin operations this year (MEES, 1 July 2022). As well as providing water, the brine was also to be used as industrial feedstock.

Mr Terium confirms that the JDA has now been cancelled, although he says that "the cooperation with Veolia and Itochu was very useful, there were a lot of learnings taken from that." Instead, he says that as a first phase, the existing Duba plant will be expanded to meet Neom's growing water requirements. One reason for this is that key technology required for the plant has not yet developed sufficiently, "there's a whole technology development from traditional evaporation into membrane based which needs to be further developed in order for us to make use of that in a good manner."

Another reason behind the decision that Mr Terium cites is the absence of a market for byproducts from the plant. "Green based materials that you would get out of processing your brine need to be sold at a green premium. And those markets are not yet mature. So, we're looking at a phasing plan that gets us there later on." ♦♦



# KUWAIT'S SUMMER POWER WOES TO CONTINUE THROUGH 2026, AND LIKELY BEYOND

*Kuwait's power sector is in urgent need of capacity additions and grid upgrades. In the absence of this, electricity imports are set to rise to 1.5GW in 2026, while Kuwait is also investigating a number of quick fixes in a bid to stave off blackouts.*

A report by a committee formed within Kuwait's Ministry of Electricity and Water (MEW) paints a dire picture for summer power provision out to at least 2026. Excerpts published by local daily al-Anbaa on 28 July show plans to hike electricity imports from around 500MW this summer to 1GW in summer 2025 then 1.5GW the year after, while also hiring power ships and installing mobile generation units for next summer in a bid to enable quick supply additions.

The failure to bring new power generation capacity online in recent years has left installed capacity stuck at 20.25GW, while electricity demand has been steadily increasing. With an aging fleet, maintenance requirements are rising and unit shutdowns are becoming frequent. An outage at the key 6GW Az Zour South power complex in June coincided with intense air conditioning usage, plunging Kuwait into a power crisis and leaving MEW no choice but to implement rolling power cuts (MEES, 21 June).

Peak load hit a new all-time high of 17.36GW on 13 July, surging past the previous record of 16.94GW set in August 2023 (see chart 1). MEW forecasts that demand will peak at 17.96GW this year. Demand could surge further to 19.03GW next year and 20.18GW in 2026.

## PUSHING THE ENVELOPE

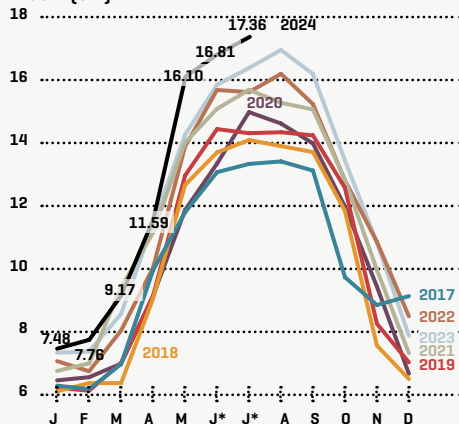
Given that available capacity is routinely well below installed capacity, this places Kuwait's electricity sector in an extremely vulnerable position. Last summer's available capacity peaked at 18.23GW, while MEW expects it to be 18.57GW this year. Both figures are below next year's expected peak demand.

Yet no new capacity is expected until summer 2026 when the 250MW 'stage-2' combined cycle expansion at the 7GW Sabiya complex comes online (MEES, 3 November 2023). No additions are expected in 2027.

MEW's available capacity figures include 281MW which is reserved for the GCC Interconnection Authority (GCCIA) network and hence is not added to peak supply. On an annual basis, Kuwait has traditionally been a net-contributor to small GCCIA swaps for grid-stabilization between member states. But that is changing this year, with summer purchases from Saudi Arabia, Qatar and Oman exceeding the contracted 500MW in June (MEES, 28 June).

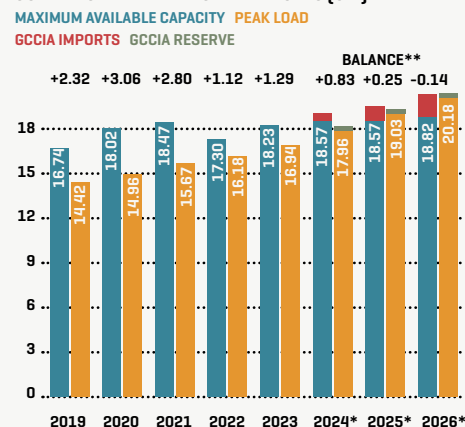
Kuwait will be pushing the envelope even with hiked imports. GCCIA imports should provide Kuwait with an overall buffer of 830MW

1: KUWAIT'S POWER DEMAND AT A NEW ALL-TIME RECORD IN JULY (GW)



\*PROVISIONAL. SOURCE: MEW, ANBAA, MEES.

2: KUWAIT FORECASTS A THIN BUFFER FOR UPCOMING SUMMERS EVEN WITH POWER IMPORTS (GW)



\*MEW PEAK LOAD FORECAST BASED ON 6% ANNUAL GROWTH. \*\*AFTER IMPORTS. SOURCE: MEW, ANBAA, MEES.

capacity over demand this summer, but even if imports double to 1GW next year, that buffer will thin to just 250MW. By 2026, even with 1.5GW of imports, demand will still outstrip capacity by around 140MW, unless Kuwait can eke out gains from its existing facilities (see chart 2).

## POWERSHIPS, MOBILE UNITS, BATTERIES

The report, however, cautions that available capacity could drop to 18.26GW as a 130MW steam turbine unit is kept on standby as supplemental reserve at the 1.1GW Doha East complex and a total of 180MW at Az Zour South is idle due to technical constraints. The latter includes seven small 27.7MW gas-fired units commissioned in late-1980s.

MEW must find capacity additions that can quickly be deployed, with the report suggesting power ships, mobile generation units and even battery storage as options. Last year, Kuwait considered renting 470MW capacity through power ships for summer 2025 (MEES, 1 December 2023). Up to 360MW of mobile generation units, the report suggests, could be connected close to existing transmission nodes to relieve peak loads and moved elsewhere if needed.

## GRID AT RISK

MEW needs to add significant generation capacity and approve contracts fast. Ongoing projects are limited, and the latest report makes no mention of the planned 900MW expansion at Sabiya. Here, the Ministry of Finance earlier this year approved an award for local firm Al Ghanim to build the expansion unit, but there has been no subsequent update (MEES, 5 April). Satellite imagery shows no sign of significant progress.

MEW has received proposals to build new plants. Kuwaiti firm Faddan General Trading, a representative of China's Dongfeng Electric Machinery, proposed building a 900MW gas-

fired plant but Anbaa's excerpt mentions no estimated cost. Another is by GE Vernova which offers to install four 288MW Frame-9 gas-fired turbines for a total capacity exceeding 1GW.

The report cautions that the grid needs upgrades at key substations, highlighting bottlenecks that could render voltage regulation at peak demand challenging. While it maintains that the likelihood of such a scenario is "minimal," the report says that losing two 400kV lines simultaneously could result in a "critical operational situation" leading to partial or full grid-shutdown.

## NO DEMAND-SIDE REFORMS

Kuwait often asks residents to reduce their electricity consumption through 'energy saving' campaigns but unlike other GCC states which have managed to trim demand growth by cutting subsidies, such an unpopular decision has yet to be taken. It remains unlikely that the dissolution of parliament would lead to a change in policy either (MEES, 17 May).

MEW's report attempts to find efficiencies elsewhere, suggesting air conditioning shut-offs in unoccupied public buildings and schools during midday peak hours. Unrealistically, it also suggests that KPC should refrain from expanding facilities to reduce its share of the load, and underutilizing its 850,000 t/y Olefins 2 plant during peak hours to save 175MW. Similarly, another 130MW is to be saved from steel plants and 320MW by stopping Sabiya's desalination facilities at peak hours.

Ultimately, the report highlights the need for an internal assessment of "legal, financial and administrative hurdles" that have caused contracting delays in past years. Also, a re-structuring of MEW's planned projects pipeline. This stands at 12GW and the ministry hopes to award 1.1GW of solar projects this year (MEES, 3 May) but there is yet any sign of the pace picking up. ♦♦



**Cyprus' decade-long LNG import drama has descended into farce with the Chinese contractor quitting and the EU demanding its funds back.**

**C**ypriot plans to import LNG are mired in controversy with the EU's European Public Prosecutor Office (EPPO) on 25 July saying it has "opened an investigation into a project for a liquefied natural gas import terminal in Cyprus, on suspicion of procurement fraud, misappropriation of EU funds and corruption."

Cyprus in 2018 snagged an €101mn EU grant towards the then-€500mn plans, of which €68.7mn has already been distributed. At the time Cypriot officials openly admitted that the configuration of the project – with the commissioning of a bespoke FSRU rather than the lease of an existing vessel – was designed to maximize the potential for snagging EU funds (MEES, 12 October 2018).

Further eyebrows were raised when Nicosia the following year awarded a single contract for both the 137,000m<sup>3</sup> FSRU and development of an onshore receiving terminal at Vasilikos on Cyprus' southern coast – two projects with very different expertise requirements – to the 'CMC' consortium grouping Chinese state firm CPPE (China Petroleum Pipeline Engineering), compatriot Hudong-Zhonghua Shipbuilding, Norway's Wilhelmsen Ship Management and Greek contractor Metron (MEES, 30 August 2019).

Almost five years on, the conversion of the Galea LNG tanker to the 'Etyfa Prometheus' FSRU has been completed but it remains moored in the Shanghai shipyard of a second Chinese state firm Cosco (MEES, 31 May). CMC in January launched arbitration proceedings in London demanding a further €200mn from Cyprus. With no movement since, on 18 July it walked away from the contract with Nicosia. CMC says it "found itself with no alternative but to terminate its contract with [Cyprus state gas infrastructure firm] Etyfa for the LNG Receiving and Regasification Terminal project at Vasilikos."

#### 'EXPORT READY' VS 'UNNECESSARY SCOPE'

The original 3Q 2022 completion target has already been and gone amid disagreements over cost over-runs and project specifications.

Cyprus has long-standing ambitions to develop its own 12tcf of gas discoveries for export (MEES, 3 May). As such, Etyfa sought to make the terminal infrastructure 'export ready' by using cryogenic pipelines. MEES understands that this stipulation led two other consortia, one led by Korea's Samsung C&T and the other by Italian gas network operator Snam, to withdraw from the tender process.

CMC disputes that cryogenic pipelines were specified in its contract, slamming "extra-contractual" demands from Etyfa for "scope that is unnecessary and/

or inappropriate for an import facility."

#### RISING COSTS

CMC claims that changes to the project specifications are the reason it has demanded additional payments on top of the original €500mn which consisted of €290mn for the FSRU and receiving terminal and €210mn to operate the project for 20 years (MEES, 30 August 2019).

In 2022 CMC requested, and received, a further €25mn from Nicosia. Cyprus' Audit Office disputes the validity of this payment, along with irregularities during the award and tender process, which also form part of the EPPO investigation. This alongside €17mn in legal and other costs have raised the overall project's cost to €542mn, the Audit Office estimates. CMC's claims imply a substantially higher figure.

President Nikos Christodoulides, who served as government spokesman and foreign minister under the previous administration which awarded the project, has been quick to distance himself from the whole saga and has even gone as far as saying CMC "should never have been awarded" the project, given the "unwarranted delays" and demands for extra payments.

Energy Minister George Papanastasiou, who is from a different party to the president and has no links to the previous administration, has remained silent on any possible past transgressions or charges of corruption, as have other MPs and politicians as they fear any statements made on the matter could be used against Nicosia in the ongoing London arbitration case.

Indeed, along with the ongoing EPPO investigation, and EU demands for the return of the €68.7mn even before the investigation concludes (Nicosia says it will respond within 30 days), local police have also begun a criminal investigation into the matter.

MEES understands that Nicosia has to-date paid CMC €245mn including €180mn for the FSRU.

But whilst Nicosia says it has paid CMC too much, this is not the view of the Chinese-led consortium. The project's "four-year history [is] characterized by wrongful withholdings and delayed payments. No contractor can be expected to work indefinitely on credit," CMC says.

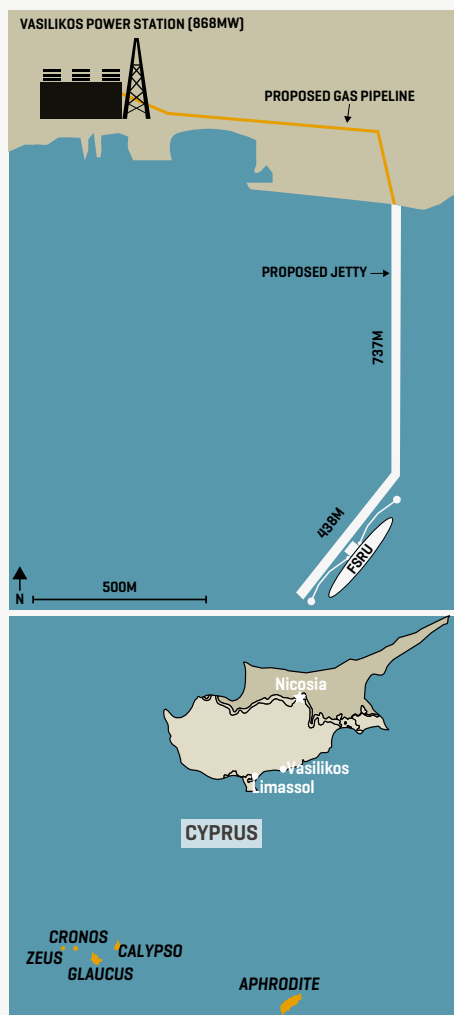
#### NOW FOR 'PLAN-B'?

Whilst CMC has walked away from the Cyprus-based portion of the project, with Etyfa on 19 July taking ownership and control of the jetty and onshore facilities, the fate of the FSRU is unclear. "We will attempt to take receipt of the FSRU but it may not be as simple as the facilities in Cyprus," Mr Papanastasiou tells MEES.

The two most likely outcomes would be a financial settlement under which CMC delivers the vessel to Cyprus, or else lengthy arbitration. As such Mr Christodoulides says Nicosia may look to lease an FSRU at least as an interim solution.

Norway's Hoegh LNG in 2020 offered to

#### CYPRUS LNG IMPORT TERMINAL



lease Cyprus an FSRU that would utilize the jetty at the adjacent Vitol-led VTTV terminal, as an interim solution (MEES, 1 May 2020).

VTTV's MD at the time is current energy minister Papanastasiou who championed the proposal.

However the onshore portion of 'Plan B' would now see the 50% complete receiving terminal completed by its sub-contractors, local firm Multimarine Services and Greek firm Spanopoulos Group.

Mr Papanastasiou tells MEES that the remaining work on the terminal will take between six to eight months at a cost of around €40mn. He adds that Nicosia could open up the process to other sub-contractors to see if they can complete the project sooner and at a lower cost as Cyprus looks to expedite the switch out of burning fuel oil and diesel for power generation, for which it is currently paying the EU hefty fines for not meeting carbon emission-related targets.

The site of the Vasilikos receiving terminal is next to the island's key 868MW Vasilikos power plant, where two 220MW CCGT units were completed in 2012 in anticipation of gas feedstock but have since been running on diesel in less efficient single cycle mode. Cyprus' 2023 fuel mix was 78.6% oil and 21.4% renewables. ♦♦

## BP BACK AT IRAQ'S KIRKUK

BP on 1 August signed a fresh MoU with Iraq aimed at developing the aging northern Kirkuk oilfield alongside a number of neighboring assets. The UK major has a long history at Kirkuk, but in 2020 it walked away after concluding a three-year study of the field.

This previous study came under the auspices of a 2013 MoU which was disrupted by Islamic State's 2014 takeover of much of northern Iraq, with the major restarting work in 2018.

BP says the scope of the new MoU encompasses rehabilitation of existing facilities, construction of new facilities including gas expansion projects, and a new drilling program, with the work aimed at stabilizing and potentially reversing output declines. As well as Kirkuk's Baba and Avana domes, work will cover the adjacent Bai Hassan, Jambur and Khabbaz fields, all of which are operated by Iraq's North Oil Company (NOC).

BP's willingness to give Kirkuk another chance may have been driven by Iraq's improved contract terms through the new Development and Production Contract (DPC). Iraq is also keen to develop so-called 'integrated projects' akin to Total-Energies' \$27bn megadeal covering oil production, gas capture, water treatment and solar power (MEES, 14 July 2023).

The new Kirkuk MoU appears to echo parts of Total's deal, with BP describing it as a "material integrated redevelopment program... spanning oil and gas investment, power generation and solar, together with wider exploration activities."

## BP TO LEAD OMAN GREEN H2 PROJECT

UK major BP has taken over as operator of Oman's Hyport green hydrogen project in Duqm, Oman. As part of a hydrogen strategy update announced alongside its Q2 results on 30 July, BP revealed it had taken a 49% operator's stake alongside Omani state firm OQ and Belgium's DEME who will retain a 25.5% stake in the project.

DEME, in a 31 July press release flagging the deal, says that it expects the transaction to complete this quarter. The announcement also updates the project's capacity to 57,000 t/y from 50,000 t/y. "The project is in the pre-front-end engineering design phase, with the commercial operations date scheduled for 2030-2031," DEME adds. The Duqm Hyport project will include roughly 1.3GW of combined wind and solar power capacity in its first phase, with the possibility of ramping up to 2.7GW in a second phase.

Omani state-hydrogen firm Hydrom has signed preliminary agreements for five projects totalling 757,000 t/y in Duqm, with a further 553,000 t/y planned in the southern governorate of Dhofar (MEES, 3 May). Hyport is the smallest of all the

projects, but for that reason it is a feasible front runner (MEES, 8 March), a position strengthened by BP's acquisition.

BP's 30 July results had a heavy hydrogen focus, with CEO Murray Auchincloss saying the firm is focusing on 10 projects globally (including Oman) that "we actually construct and get going... we think we will sanction around five to 10 and build five to 10 this decade." BP took FID on the first of these this week, a green electrolyzer at its Castellon refinery in Spain, and expects FID by end-2024 at a 100MW electrolyzer at Lingen in Germany.

## BP-ADNOC EXECS MEET CYPRUS ENERGY MINISTER

High-ranking officials from UK major BP and UAE state firm Adnoc flew into Nicosia on Friday 2 August for meetings with energy minister George Panastasiou and ministry officials.

The pair earlier this year firmed-up their plans of a JV in the East Med following tie-ups in BP's Egypt assets (MEES, 17 May). A more audacious entry into the region by taking a 50% stake in Israeli firm NewMed Energy, which holds a 45.34% stake at the 1.2bn cfd Leviathan, has seemingly fallen through though, with both sides in March citing geopolitical hurdles (MEES, 15 March).

It is not readily clear what asset or assets the pair could be eying in Cyprus, although MEES understands talks have touched on the firms taking over at the 3.5tcf Aphrodite offshore find if operator Chevron walks away following disagreements regarding the field's development (MEES, 3 May).

## ADNOC JV KICKS OFF UNCONVENTIONAL DRILLING

The recently established Turnwell JV between Adnoc Drilling, SLB and Patterson-UTI (MEES, 17 May) has started drilling its first well. The well is being drilled in Abu Dhabi's Al Dhafra region and is intended to help "unlock Abu Dhabi's world-class unconventional energy resources." It is the first of a 144-well unconventional oil and gas focused drilling campaign under a AED6.24bn (\$1.7bn) contract awarded in May.

Abu Dhabi estimates that it has 220bn barrels of unconventional oil and 460tcf of unconventional gas in place, and Adnoc Executive Upstream Director Abdulmunim al-Kindy says that "Turnwell marks a new era in Abu Dhabi's energy industry as we establish a UAE growth champion to unlock our nation's world-class unconventional energy resources."

## ABU DHABI 1.5GW GAS-FIRED POWER TENDER

Abu Dhabi state offtaker Ewec has issued a Request for Proposals (RFP) for the Development of the Madinat Zayed Independent Power Producer (IPP). The 1.5GW open cycle gas turbine

(OCGT) plant will be developed around 120km southwest of Abu Dhabi city and is planned to begin commercial operations in 3Q 2027.

The 29 July RFP comes a week after Ewec issued an RFP for the 2.5GW Taweelah-C combined cycle (CCGT) plant, which is due online in 3Q 2028 (MEES, 26 July).

Abu Dhabi's power sector is becoming increasingly reliant on solar and nuclear capacity, which accounted for a record 38.6% of power generated in 2023. But gas remains a key baseload fuel and will continue to play a future role due to its flexibility to ramp up generation at short notice to respond to outages elsewhere or surges in demand.

OCGT capacity in particular is seen by Ewec as a key source of low-cost, flexible capacity for such scenarios, and it earlier this year recommended the development of 2.6GW additional capacity by 2027. "These types of plants will be particularly important for supporting the growth of solar power, providing crucial flexibility during peak power demand periods and acting as a bridge to a future powered exclusively by clean and renewable sources." Specifically, it says that "Madinat Zayed will provide up to 1.5GW (AC) of backup generation, which can be operational at very short notice."

The successful developer will enter into a long-term agreement with EWEC as the sole procurer. The IPP program will entail the development, financing, construction, operation, maintenance, and ownership of the Madinat Zayed OCGT plant, with the successful developer owning up to 40%. The remaining equity will be held indirectly by the Abu Dhabi Government, most likely through Taqa and Mubadala.

## IRAQ GAS CAPTURE PROGRESS

Iraq's Midlands Oil on 1 August inaugurated a 15mn cfd gas compression station at its 8,000 b/d East Baghdad-North field which Oil Minister Hayan Abdulghani says will provide feedstock for 100MW of electricity. Inoperable since 1986, the station was rehabilitated by Midlands and will capture around 14mn cfd which was previously flared. A further boost is set to come from under-construction gas capture facilities at the field's other flank, 37,000 b/d East Baghdad-South operated by Chinese firm Zhenhua Oil (MEES, 19 July). Iraq continues to suffer from acute gas shortages due to routine flaring but capture has significantly improved to around 65% of gross output (MEES, 12 July).

## QATAR LNG: FIRST NFE EXPANSION TRAIN OVER 50% READY

The first of Qatar's new 7.8mn t/y LNG liquefaction trains under its North Field expansion project is more than 50% complete and "first

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systems are energized,” France’s Technip Energies says in its 1H results on 1 August.

The French contractor is developing the four trains that form the North Field East (NFE) expansion in a joint venture with Japan’s Chiyoda (MEES, 12 February 2021), and two trains for the North Field South (NFS) expansion in a joint venture with Consolidated Contractors Company (MEES, 19 May 2023). The first NFE train is due online in 2026.

Qatar recently announced an increase to its expansion plans from the planned 126mn t/y to 142mn t/y (MEES, 1 March). As yet no EPC contracts have been awarded for this third phase dubbed North Field West.

## KUWAIT’S KPC: ‘MERGER TEAM’

Sheikh Nawaf Al Sabah, CEO of Kuwait Petroleum (KPC), has formed a new team led by his deputy for planning to ensure “central coordination” of subsidiary mergers under a plan put forward earlier this year (MEES, 12 April). According to documents seen by local daily al-Anbaa, KPC will transfer LPG bottling plants at Shuaiba (13mn cylinders/year) and Umm al-Aish (15mn cylinders/year) that are currently operated by its shipping subsidiary KOTC to refining firm KNPC. The latter is expected to eventually operate all of Kuwait’s 1.4mn b/d refining capacity after merger with

Kipic. KPC also plans for its two upstream firms KOC and KGOC to merge (MEES, 26 July).

## IRAN POWER CRUNCH

Hot temperatures in Iran have led to power shortages amidst rising demand for air conditioning, forcing the government to close a number of public institutions on 28 July. Peak load hit 76.4GW the following day, up 6.4GW on the year-ago figure, Iran Grid operations manager Maziar Jamshidi says. This is in line with the energy ministry’s forecast summer peak of 77GW.

Although installed capacity of 93GW is significantly above this, in reality available capacity is much lower given the inclusion of 12GW of highly-variable hydropower capacity and the toll of years of international sanctions (MEES, 18 August 2023),

State news agency IRNA says current available capacity is 17-18GW below the headline figure implying a figure of around 75GW, somewhat lower than recent peak demand. State power firm Tavanir confirmed a struggle to meet demand by instructing offices and banks to cut 60% of their consumption on 1 August.

Amid the power shortfall at home, Iran on 23 July cut exports to Iraq’s northwestern Diyala province by 250MW, less than half the three lines’ 550MW capacity.

Iran’s 7th National Development Plan aims to boost capacity to 124GW by 2028, but IRNA says only 5.2GW has been added since

late-2021 out of more than 9GW planned.

## ALGERIA-ITALY POWER MoU

Italy’s Eni and Algerian state energy giants Sonatrach and Sonelgaz on 31 July signed an MoU for a planned power connection between the two countries.

The MoU looks “to define the general framework” for a feasibility study on a submarine cable “to join the Algerian and Italian power networks with a view to exchanges, or supplying the Italian and European markets with electricity” from Algeria.

The Sonelgaz write up adds that the “ultimate goal” is to supply renewable power from Algeria to Europe in line with “Algeria’s ambitions to position itself as a major supplier of energy, in particular green energy, to Europe.”

Algeria targets 15GW of renewables capacity by 2035 but currently has just 600MW (MEES, 22 March).

## EGYPT POCKETS IMF CASH

Egypt prime minister Moustafa Madbouly on 1 August confirmed that Cairo had received the third \$820mn tranche of its \$8bn IMF loan agreed in March (MEES, 8 March).

This follows the IMF board’s approval of the tranche at its 29 July board meeting. This approval had been put on hold for more than two weeks as the IMF waited for Egypt to move on stalled gasoline and diesel price rises (MEES, 26 July).

## JAPAN LNG IMPORTS: AUSTRALIA DOMINANT, OMAN AT 10-YEAR HIGH

\*Official Japan import data for June confirm that the country’s LNG imports fell to a multi-decade first half low of 32.41mn tons for 1H 2024, down around 1% year-on-year (see chart 1 & p18 for full data). There is no sign of an uptick in the latest data, with each month this year seeing successive falls (see chart 2) and the IEA predicting a 1% fall for 2024 as a whole amid gradual ramp-up in operational nuclear capacity (MEES, 26 July).

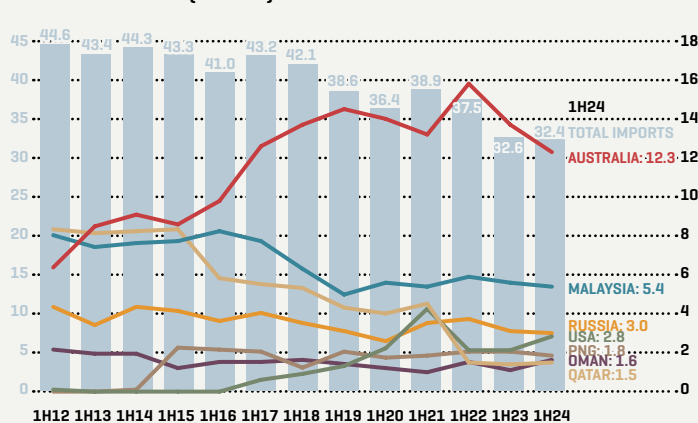
\*Among Japan’s suppliers, Australia remains way ahead at number one with 12.33mn tons for 1H 2024 despite a 10% fall in volumes terms, ahead of Malaysia (5.43mn tons), Russia (3.00mn tons), the USA (2.84mn tons), Papua New Guinea (1.80mn tons), Oman (1.61mn tons) and Qatar (1.47mn tons). Whilst Australia saw the biggest fall in volumes terms, the biggest gainers were the USA (up

720,000 tons or 34%) and Oman (up 540,000 tons or 50%).

\*Oman saw its overall LNG exports surge by 11% to a 10-year high first half figure of 6.1mn tons for 1H 2024 as gas output hit a record 5.2bn cfd (MEES, 26 July). Oman’s LNG exports have been running well above the nominal 11.4mn t/y capacity of its three liquefaction trains at Sur, with this year on pace to smash 2023’s 11.5mn t/y record. Whilst a lack of LNG and other gas outlets has effectively capped Oman’s gas production (MEES, 27 October 2023), last weekend saw the approval of a 3.8mn t/y fourth train at Sur for start-up late this decade (see p2).

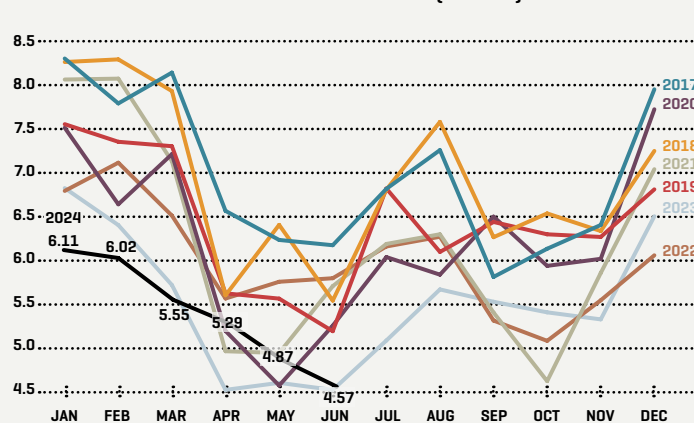
\*Whilst South Korea remains by some distance Oman’s top customer for 1H 2024, volumes were down 14% at 2.33mn tons for 1H 2024 (MEES, 26 July).

1: JAPAN LNG IMPORTS (MN TONS): AUSTRALIA DOMINANT AS OVERALL VOLUMES SLUMP...



SOURCE: JAPAN CUSTOMS, MEES.

2: ...WITH VOLUMES FALLING EVERY MONTH THIS YEAR (MN TONS)



SOURCE: JAPAN CUSTOMS, MEES.

## JAPAN 1H24 LNG IMPORTS: OMAN OVERTAKES QATAR AS TOP MIDEAST SUPPLIER



## SELECTED DATA

| Volume (mn tons)  | 1H24   | vs 1H23 | %      | 1H23   | 2Q24  | vs 1Q24 | %     | vs 2Q23 | %      | 1Q24   | 4Q23   | 3Q23  | 2Q23  | 2021   | 2022   | 2023   | Apr24 | May24 | Jun24 |
|-------------------|--------|---------|--------|--------|-------|---------|-------|---------|--------|--------|--------|-------|-------|--------|--------|--------|-------|-------|-------|
| Australia         | 12.33  | -1.37   | -10.0  | 13.70  | 5.59  | -1.14   | -17.0 | -0.47   | -7.7   | 6.74   | 6.90   | 6.91  | 6.06  | 26.64  | 30.75  | 27.52  | 2.05  | 1.70  | 1.84  |
| % of total        | 38.0   | -4.0    |        | 42.0   | 38.0  | -0.1    |       | -6.3    |        | 38.1   | 40.0   | 42.4  | 44.3  | 35.8   | 42.7   | 41.6   | 38.8  | 34.9  | 40.2  |
| Malaysia          | 5.43   | -0.14   | -2.5   | 5.57   | 2.28  | -0.87   | -27.7 | -0.05   | -2.2   | 3.15   | 2.67   | 2.10  | 2.33  | 10.11  | 12.05  | 10.33  | 0.75  | 1.01  | 0.52  |
| Russia            | 3.00   | -0.10   | -3.3   | 3.10   | 1.20  | -0.59   | -33.0 | -0.25   | -17.0  | 1.79   | 1.99   | 1.04  | 1.45  | 6.57   | 6.87   | 6.13   | 0.29  | 0.36  | 0.55  |
| USA               | 2.84   | +0.72   | +34.2  | 2.12   | 1.43  | +0.03   | +1.9  | +0.42   | +41.4  | 1.41   | 1.40   | 2.00  | 1.01  | 7.07   | 4.14   | 5.52   | 0.44  | 0.49  | 0.50  |
| PNG               | 1.80   | -0.16   | -8.2   | 1.96   | 0.92  | +0.04   | +4.0  | -0.04   | -4.4   | 0.88   | 0.78   | 1.09  | 0.96  | 3.50   | 3.79   | 3.82   | 0.28  | 0.35  | 0.29  |
| Oman              | 1.61   | +0.54   | +50.0  | 1.07   | 0.71  | -0.18   | -20.2 | +0.40   | +130.5 | 0.89   | 0.55   | 0.56  | 0.31  | 1.90   | 2.53   | 2.18   | 0.33  | 0.25  | 0.14  |
| % of total        | 5.0    | +1.7    |        | 3.3    | 4.8   | -0.2    |       | +2.6    |        | 5.1    | 3.2    | 3.5   | 2.3   | 2.6    | 3.5    | 3.3    | 6.2   | 5.2   | 3.0   |
| Qatar             | 1.47   | +0.04   | +2.9   | 1.43   | 0.60  | -0.27   | -31.3 | +0.18   | +42.4  | 0.87   | 0.85   | 0.65  | 0.42  | 8.97   | 2.88   | 2.93   | 0.13  | 0.21  | 0.26  |
| % of total        | 4.5    | +0.2    |        | 4.4    | 4.1   | -0.9    |       | +1.0    |        | 4.9    | 5.0    | 4.0   | 3.1   | 12.1   | 4.0    | 4.4    | 2.5   | 4.4   | 5.6   |
| Indonesia         | 1.46   | -0.03   | -2.0   | 1.49   | 0.82  | +0.19   | +29.5 | +0.35   | +72.3  | 0.64   | 0.70   | 0.85  | 0.48  | 1.89   | 2.54   | 3.04   | 0.36  | 0.24  | 0.22  |
| Brunei            | 1.25   | -0.19   | -13.3  | 1.44   | 0.52  | -0.21   | -29.4 | +0.05   | +11.0  | 0.73   | 0.47   | 0.59  | 0.47  | 4.29   | 3.21   | 2.49   | 0.20  | 0.25  | 0.06  |
| UAE               | 0.54   | +0.30   | +124.5 | 0.24   | 0.24  | -0.06   | -18.7 | +0.18   | +299.9 | 0.30   | 0.30   | 0.30  | 0.06  | 1.33   | 1.33   | 0.84   | 0.18  | 0.00  | 0.06  |
| Peru              | 0.21   | +0.09   | +70.7  | 0.13   | 0.07  | -0.07   | -48.3 | +0.07   | -      | 0.14   | 0.00   | 0.13  | 0.00  | 0.53   | 0.20   | 0.25   | 0.07  | 0.00  | 0.00  |
| Nigeria           | 0.20   | +0.20   | -      | 0.00   | 0.13  | +0.05   | +72.9 | +0.13   | -      | 0.07   | 0.25   | 0.00  | 0.00  | 0.84   | 0.97   | 0.25   | 0.07  | 0.00  | 0.06  |
| Eq. Guinea        | 0.07   | +0.01   | +11.3  | 0.06   | 0.07  | +0.07   | -     | +0.07   | -      | 0.00   | 0.07   | 0.00  | 0.00  | 0.26   | 0.12   | 0.13   | 0.07  | 0.00  | 0.00  |
| Mozambique        | 0.07   | +0.01   | +9.6   | 0.06   | 0.07  | +0.07   | -     | +0.01   | +9.6   | 0.00   | 0.00   | 0.07  | 0.06  | 0.00   | 0.00   | 0.13   | 0.07  | 0.00  | 0.00  |
| TOTAL             | 32.41  | -0.21   | -0.7   | 32.62  | 14.72 | -2.96   | -16.7 | +1.05   | +7.7   | 17.68  | 17.24  | 16.29 | 13.67 | 74.32  | 72.00  | 66.15  | 5.29  | 4.87  | 4.57  |
| of which Mena     | 3.67   | +0.80   | +27.8  | 2.88   | 1.61  | -0.45   | -22.0 | +0.75   | +87.8  | 2.06   | 1.76   | 1.52  | 0.86  | 12.43  | 7.06   | 6.15   | 0.64  | 0.46  | 0.51  |
| Mena %            | 11.3   | +2.5    |        | 8.8    | 10.9  | -0.7    |       | +4.7    |        | 11.7   | 10.2   | 9.3   | 6.3   | 16.7   | 9.8    | 9.3    | 12.1  | 9.5   | 11.1  |
| Price (\$/mn BTU) | 1H24   | vs 1H23 | %      | 1H23   | 2Q24  | vs 1Q24 | %     | vs 2Q23 | %      | 1Q24   | 4Q23   | 3Q23  | 2Q23  | 2021   | 2022   | 2023   | Apr24 | May24 | Jun24 |
| Australia         | 12.70  | -3.63   | -22.2  | 16.34  | 11.90 | -1.47   | -11.0 | -1.98   | -14.3  | 13.37  | 13.01  | 12.45 | 13.88 | 10.44  | 17.69  | 14.53  | 11.84 | 12.02 | 11.86 |
| Malaysia          | 12.45  | -2.70   | -17.8  | 15.15  | 11.60 | -1.46   | -11.2 | -0.36   | -3.0   | 13.07  | 12.63  | 11.65 | 11.96 | 9.73   | 16.28  | 13.79  | 11.27 | 11.93 | 11.46 |
| Russia            | 13.42  | -1.77   | -11.6  | 15.19  | 12.97 | -0.76   | -5.5  | -0.66   | -4.8   | 13.73  | 13.33  | 12.85 | 13.62 | 10.69  | 15.63  | 14.19  | 13.12 | 13.01 | 12.86 |
| USA               | 11.48  | -2.30   | -16.7  | 13.78  | 10.67 | -1.64   | -13.3 | +0.54   | +5.3   | 12.31  | 11.67  | 10.86 | 10.13 | 12.20  | 21.08  | 12.18  | 10.32 | 10.49 | 11.14 |
| PNG               | 13.18  | -2.01   | -13.2  | 15.19  | 12.15 | -2.10   | -14.7 | -0.63   | -4.9   | 14.25  | 14.54  | 13.32 | 12.78 | 11.50  | 19.48  | 14.53  | 12.05 | 12.29 | 12.09 |
| Oman              | 10.32  | -3.52   | -25.5  | 13.84  | 10.42 | +0.19   | +1.9  | -1.17   | -10.1  | 10.23  | 11.39  | 10.00 | 11.59 | 9.37   | 14.01  | 12.23  | 9.99  | 11.42 | 9.61  |
| Qatar             | 12.48  | -5.19   | -29.4  | 17.67  | 11.24 | -2.10   | -15.7 | -2.61   | -18.8  | 13.34  | 13.98  | 12.66 | 13.85 | 9.13   | 20.48  | 15.48  | 9.67  | 11.06 | 12.19 |
| Indonesia         | 13.42  | -2.37   | -15.0  | 15.79  | 12.30 | -2.57   | -17.3 | -1.04   | -7.8   | 14.87  | 12.77  | 13.47 | 13.34 | 9.86   | 20.22  | 14.45  | 12.06 | 12.24 | 12.77 |
| Brunei            | 12.30  | -3.04   | -19.8  | 15.34  | 10.72 | -2.69   | -20.1 | -3.34   | -23.8  | 13.41  | 12.93  | 12.34 | 14.06 | 9.48   | 15.04  | 14.18  | 10.38 | 10.57 | 12.37 |
| UAE               | 13.66  | -9.30   | -40.5  | 22.95  | 12.16 | -2.71   | -18.2 | +0.22   | +1.8   | 14.87  | 15.30  | 12.13 | 11.94 | 10.95  | 30.34  | 16.37  | 13.10 | -     | 9.27  |
| Peru              | 19.15  | -5.04   | -20.8  | 24.18  | 12.51 | -10.08  | -44.6 | -       | -      | 22.58  | -      | 10.80 | -     | 8.69   | 20.47  | 17.41  | 12.51 | -     | -     |
| Nigeria           | 16.20  | -       | -      | -      | 12.17 | -11.01  | -47.5 | -       | -      | 23.18  | 11.99  | -     | -     | 12.38  | 18.69  | 11.99  | 14.10 | -     | 9.62  |
| Eq. Guinea        | 9.20   | -25.90  | -73.8  | 35.11  | 9.20  | -       | -     | -       | -      | -      | 18.59  | -     | -     | 12.60  | 18.47  | 26.65  | 9.20  | -     | -     |
| Mozambique        | 9.43   | -3.88   | -29.1  | 13.30  | 9.43  | -       | -     | -3.88   | -29.1  | -      | -      | 13.21 | 13.30 | -      | -      | 13.26  | 9.43  | -     | -     |
| AVERAGE PRICE     | 12.57  | -3.23   | -20.4  | 15.80  | 11.68 | -1.64   | -12.3 | -1.40   | -10.7  | 13.32  | 12.94  | 12.18 | 13.08 | 10.40  | 17.71  | 14.16  | 11.51 | 11.79 | 11.75 |
| Value (\$mn)      | 1H24   | vs 1H23 | %      | 1H23   | 2Q24  | vs 1Q24 | %     | vs 2Q23 | %      | 1Q24   | 4Q23   | 3Q23  | 2Q23  | 2021   | 2022   | 2023   | Apr24 | May24 | Jun24 |
| Australia         | 7,877  | -3,380  | -30.0  | 11,258 | 3,348 | -1,182  | -26.1 | -881    | -20.8  | 4,530  | 4,519  | 4,330 | 4,229 | 13,990 | 27,360 | 20,107 | 1,222 | 1,030 | 1,096 |
| Malaysia          | 3,332  | -828    | -19.9  | 4,160  | 1,303 | -725    | -35.8 | -70     | -5.1   | 2,028  | 1,660  | 1,206 | 1,373 | 4,852  | 9,668  | 7,025  | 415   | 592   | 296   |
| Russia            | 1,935  | -330    | -14.6  | 2,265  | 750   | -435    | -36.7 | -200    | -21.0  | 1,185  | 1,278  | 642   | 950   | 3,377  | 5,163  | 4,185  | 182   | 227   | 341   |
| USA               | 1,632  | +172    | +11.8  | 1,460  | 765   | -102    | -11.7 | +251    | +48.9  | 867    | 819    | 1,088 | 514   | 4,313  | 4,359  | 3,366  | 225   | 259   | 281   |
| PNG               | 1,184  | -301    | -20.3  | 1,485  | 556   | -71     | -11.3 | -56     | -9.1   | 627    | 566    | 724   | 612   | 2,012  | 3,691  | 2,775  | 166   | 213   | 178   |
| Oman              | 879    | +93     | +11.8  | 786    | 394   | -91     | -18.7 | +204    | +107.3 | 485    | 330    | 299   | 190   | 945    | 1,878  | 1,415  | 172   | 152   | 69    |
| Qatar             | 955    | -359    | -27.3  | 1,314  | 350   | -255    | -42.1 | +47     | +15.6  | 605    | 622    | 431   | 303   | 4,265  | 3,077  | 2,367  | 66    | 122   | 162   |
| Indonesia         | 1,000  | -200    | -16.7  | 1,199  | 517   | +34     | +7.1  | +192    | +58.9  | 483    | 456    | 582   | 325   | 949    | 2,620  | 2,237  | 221   | 153   | 144   |
| Brunei            | 767    | -337    | -30.5  | 1,105  | 277   | -213    | -43.5 | -50     | -15.4  | 490    | 301    | 363   | 327   | 2,035  | 2,417  | 1,769  | 104   | 133   | 40    |
| UAE               | 354    | +89     | +33.5  | 265    | 141   | -71     | -33.5 | +107    | +307.3 | 212    | 220    | 173   | 35    | 692    | 1,931  | 658    | 115   | 0     | 26    |
| Peru              | 206    | +53     | +35.2  | 152    | 46    | -114    | -71.4 | +46     | -      | 160    | 0      | 70    | 0     | 232    | 203    | 222    | 46    | 0     | 0     |
| Nigeria           | 165    | +165    | -      | 0      | 78    | -8      | -9.2  | +78     | -      | 86     | 152    | 0     | 0     | 523    | 907    | 152    | 52    | 0     | 27    |
| Eq. Guinea        | 32     | -78     | -70.8  | 110    | 32    | +32     | -     | +32     | -      | 0      | 61     | 0     | 0     | 164    | 113    | 171    | 32    | 0     | 0     |
| Mozambique        | 34     | -10     | -22.3  | 43     | 34    | +34     | -     | -10     | -22.3  | 0      | 0      | 44    | 43    | 0      | 0      | 87     | 34    | 0     | 0     |
| Egypt             | 0      | -172    | -100.0 | 172    | 0     | -       | -     | -67     | -100.0 | 0      | 0      | 0     | 67    | 130    | 194    | 172    | 0     | 0     | 0     |
| TOTAL             | 20,437 | -5,417  | -21.0  | 25,854 | 8,624 | -3,190  | -27.0 | -344    | -3.8   | 11,814 | 11,187 | 9,951 | 8,968 | 38,770 | 63,961 | 46,993 | 3,050 | 2,881 | 2,692 |

SEE P17 FOR RELATED ANALYSIS. SOURCE: JAPAN FINANCE MINISTRY, METI, JOGMEC, MEES CALCULATIONS.

## CRUDE OFFICIAL SELLING PRICES (\$/B): OMAN SEP 2024 OSP \$83.85/B



## SELECTED DATA

|                                                                      | May23 | Jun23 | Jul23 | Aug23 | Sep23 | Oct23 | Nov23 | Dec23 | Jan24 | Feb24 | Mar24 | Apr24 | May24 | Jun24 | Jul24 | Aug24 | Sep24 | Oct24 |
|----------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>LIBYA (vs Dated Brent)</b>                                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Zueitina [41°]                                                       | -0.30 | -0.30 | -0.20 | -0.05 | +0.10 | +0.40 | +0.20 | +0.00 | -0.20 | +0.20 | +0.30 | +0.00 | -0.10 | -0.65 | -0.45 | +0.05 |       |       |
| Brega [40°]                                                          | -1.05 | -1.15 | -1.15 | -0.85 | -0.70 | -0.30 | -0.50 | -0.70 | -0.90 | -0.50 | -0.35 | -0.70 | -0.80 | -1.55 | -1.45 | -1.05 |       |       |
| Sirtica [41°]                                                        | -0.45 | -0.45 | -0.45 | -0.10 | +0.00 | +0.40 | -0.25 | -0.45 | -0.75 | -0.40 | -0.55 | -0.85 | -0.95 | -1.55 | -1.45 | -1.15 |       |       |
| Es Sider [37°]                                                       | -0.50 | -0.50 | -0.40 | +0.25 | +0.35 | +1.00 | +0.30 | -0.20 | -0.60 | +0.05 | -0.10 | -0.55 | -0.55 | -1.25 | -0.90 | -0.50 |       |       |
| Bu Attifel [36°]                                                     | -0.15 | -0.15 | +0.00 | +0.65 | +0.80 | +1.20 | +0.70 | +0.35 | -0.05 | +0.25 | +0.00 | +0.00 | -0.15 | -0.70 | -0.50 | -0.10 |       |       |
| Sarir [36°]                                                          | -2.60 | -2.60 | -2.45 | -1.80 | -1.70 | -1.20 | -1.90 | -2.30 | -2.90 | -2.90 | -3.05 | -3.35 | -3.35 | -3.95 | -3.60 | -3.10 |       |       |
| Amna [36°]                                                           | +0.25 | +0.25 | +0.25 | +0.85 | +0.95 | +1.55 | +0.90 | +0.40 | +0.00 | +0.65 | +0.50 | +0.25 | +0.10 | -0.50 | -0.15 | +0.25 |       |       |
| Sharara [43°]                                                        | +0.10 | -0.05 | -0.05 | +0.20 | +0.30 | +0.70 | +0.50 | +0.30 | +0.30 | +0.40 | +0.55 | +0.20 | +0.05 | -0.70 | -0.45 | -0.05 |       |       |
| Mellitah [41.6°]                                                     | -1.15 | -1.15 | -1.15 | -0.80 | -0.65 | -0.35 | -0.55 | -0.75 | -0.75 | -0.35 | -0.20 | -0.55 | -0.70 | -1.45 | -0.45 | -0.95 |       |       |
| Bouri [26°]                                                          | -4.00 | -3.40 | -2.70 | -2.05 | -1.95 | -1.65 | -1.65 | -1.85 | -1.85 | -1.85 | -1.95 | -1.95 | -1.65 | -1.65 | -1.55 | -1.55 |       |       |
| Al Jurf [30°]                                                        | -2.50 | -1.90 | -1.20 | -0.55 | -0.45 | -0.15 | -0.15 | -0.35 | -0.35 | -0.35 | -0.45 | -0.45 | -0.25 | -0.25 | -0.15 | -0.15 |       |       |
| <b>DUBAI</b>                                                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Dubai [31°, vs Oman]                                                 | -0.20 | -0.10 | -0.10 | +0.00 | +0.00 | +0.00 | +0.00 | +0.05 | +0.05 | +0.05 | +0.10 | +0.00 | +0.00 | +0.00 | -0.10 | +0.00 | +0.00 | +0.10 |
| outright price                                                       | 78.29 | 83.18 | 74.84 | 74.78 | 80.54 | 86.57 | 92.77 | 89.84 | 83.22 | 77.26 | 78.85 | 80.85 | 84.14 | 89.30 | 83.79 | 82.50 | 83.85 |       |
| <b>OMAN</b>                                                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Oman [34°]                                                           | 78.49 | 83.28 | 74.94 | 74.78 | 80.54 | 86.57 | 92.77 | 89.79 | 83.17 | 77.21 | 78.75 | 80.85 | 84.14 | 89.30 | 83.89 | 82.50 | 83.85 |       |
| <b>SAUDI ARABIA: to Asia (FOB Ras Tanura, vs Oman/Dubai average)</b> |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Arab Super Light [>40°]                                              | +5.00 | +4.30 | +4.75 | +4.35 | +4.95 | +5.45 | +5.45 | +5.45 | +4.95 | +2.95 | +2.95 | +2.95 | +2.95 | +3.45 | +2.95 | +2.75 |       |       |
| Arab Extra Light [36-40°]                                            | +2.80 | +2.10 | +2.55 | +2.55 | +2.55 | +2.85 | +3.35 | +4.05 | +3.55 | +1.55 | +1.50 | +1.70 | +2.10 | +2.80 | +2.20 | +1.60 |       |       |
| Arab Light [32-36°]                                                  | +2.80 | +2.55 | +3.00 | +3.20 | +3.50 | +3.60 | +4.00 | +4.00 | +3.50 | +1.50 | +1.50 | +1.70 | +2.00 | +2.90 | +2.40 | +1.80 |       |       |
| Arab Medium [29-32°]                                                 | +2.80 | +2.00 | +2.45 | +2.65 | +3.35 | +3.45 | +3.45 | +3.35 | +2.75 | +0.75 | +0.55 | +0.85 | +1.35 | +2.35 | +1.95 | +1.25 |       |       |
| Arab Heavy [<29°]                                                    | +1.25 | +0.35 | +0.80 | +1.00 | +1.60 | +1.70 | +1.70 | +2.00 | +1.70 | -0.30 | -0.30 | +0.00 | +0.50 | +1.60 | +1.20 | +0.50 |       |       |
| <b>IRAQ: to Asia (vs Oman/Dubai average)</b>                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Basrah Medium [FOB]                                                  | -0.15 | -0.15 | -0.10 | +0.40 | +1.40 | +1.80 | +2.10 | +1.80 | +1.00 | -0.80 | -0.80 | -0.60 | +0.00 | +1.00 | +0.60 | -0.10 |       |       |
| vs Saudi Arab Heavy                                                  | -1.40 | -0.50 | -0.90 | -0.60 | -0.20 | +0.10 | +0.40 | -0.20 | -0.70 | -0.50 | -0.50 | -0.60 | -0.50 | -0.60 | -0.60 | -0.60 |       |       |
| Basrah Heavy [FOB]                                                   | -3.40 | -3.30 | -3.25 | -2.65 | -1.90 | -1.60 | -1.40 | -1.60 | -1.90 | -3.80 | -4.10 | -4.00 | -3.20 | -1.95 | -2.25 | -3.00 |       |       |
| <b>KUWAIT: to Asia (FOB, vs Oman/Dubai)</b>                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Kuwait Export Blend [31°]                                            | +2.40 | +1.70 | +1.95 | +2.25 | +2.85 | +3.05 | +3.05 | +2.85 | +2.10 | +0.25 | +0.25 | +0.55 | +1.15 | +2.35 | +1.95 | +1.25 |       |       |
| vs Saudi Arab Medium                                                 | -0.40 | -0.30 | -0.50 | -0.40 | -0.50 | -0.40 | -0.40 | -0.50 | -0.65 | -0.50 | -0.30 | -0.30 | -0.20 | +0.00 | +0.00 | +0.00 |       |       |
| Kuwait Super Light [48°]                                             | +2.50 | +1.80 | +2.15 | +2.25 | +2.15 | +2.45 | +2.95 | +3.35 | +2.45 | +0.65 | +0.70 | +0.90 | +1.40 | +2.35 | +1.95 | +1.35 |       |       |
| Khafji [28.5°]                                                       | +1.25 | +0.35 | +0.80 | +1.00 | +1.60 | +1.70 | +1.70 | +2.00 | +1.70 | -0.30 | -0.30 | +0.00 | +0.50 | +1.60 | +1.20 | +0.50 |       |       |
| Hout [33°]                                                           | +2.80 | +2.26 | +2.71 | +2.91 | +3.42 | +3.52 | +3.71 | +3.66 | +3.10 | +1.10 | +1.00 | +1.25 | +1.66 | +2.61 | +2.16 | +1.51 |       |       |
| <b>IRAN: to Asia (FOB Kharg Island, vs Oman/Dubai average)</b>       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Iranian Light [33-34°]                                               | +2.80 | +2.60 | +3.00 | +3.15 | +3.45 | +3.50 | +3.85 | +4.00 | +3.60 | +1.75 | +1.75 | +1.95 | +2.25 | +3.10 | +2.60 | +2.10 |       |       |
| vs Saudi Arab Light                                                  | +0.00 | +0.05 | +0.00 | -0.05 | -0.05 | -0.10 | -0.15 | +0.00 | +0.10 | +0.25 | +0.25 | +0.25 | +0.25 | +0.20 | +0.20 | +0.30 |       |       |
| Iranian Heavy [30-31°]                                               | +1.45 | +0.65 | +1.05 | +1.10 | +1.80 | +1.75 | +1.75 | +1.80 | +1.40 | -0.50 | -0.70 | -0.45 | +0.05 | +1.10 | +0.80 | +0.10 |       |       |
| vs Saudi Arab Medium                                                 | -1.35 | -1.35 | -1.40 | -1.55 | -1.55 | -1.70 | -1.70 | -1.55 | -1.35 | -1.25 | -1.25 | -1.30 | -1.30 | -1.25 | -1.15 | -1.15 |       |       |
| Foroozan [31°]                                                       | +1.35 | +0.55 | +0.95 | +1.05 | +1.75 | +1.75 | +1.85 | +1.85 | +1.50 | -0.35 | -0.50 | -0.25 | +0.25 | +1.25 | +0.90 | +0.25 |       |       |
| South Pars Condensate                                                | -0.30 | -0.95 | -0.65 | -0.50 | +0.10 | +0.15 | +0.25 | +0.45 | +0.20 | -1.75 | -1.80 | -1.50 | -1.00 | +0.10 | -0.25 | -0.95 |       |       |
| Soroosh [18.6°] vs Iran Heavy                                        | -3.60 | -3.60 | -3.60 | -3.50 | -3.60 | -3.50 | -3.50 | -3.25 | -3.10 | -3.05 | -2.85 | -2.80 | -2.80 | -2.65 | -2.70 | -2.70 |       |       |
| <b>ABU DHABI</b>                                                     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Murban [40.3°]                                                       | 79.55 | 84.11 | 75.59 | 75.61 | 80.78 | 87.28 | 93.92 | 91.00 | 83.32 | 77.69 | 79.06 | 80.99 | 84.52 | 89.14 | 83.93 | 82.52 |       |       |
| Das [38.8°]                                                          | 78.60 | 83.11 | 74.89 | 74.91 | 80.18 | 86.68 | 93.32 | 90.40 | 82.72 | 76.99 | 78.31 | 80.19 | 83.82 | 88.39 | 83.28 | 81.77 |       |       |
| Das-vs Murban                                                        | -0.95 | -1.00 | -0.70 | -0.70 | -0.60 | -0.60 | -0.60 | -0.60 | -0.60 | -0.70 | -0.75 | -0.80 | -0.70 | -0.75 | -0.65 | -0.75 |       |       |
| Umm Lulu [38.7°]                                                     | 79.60 | 84.31 | 75.79 | 75.76 | 80.93 | 87.48 | 94.17 | 91.25 | 83.57 | 77.94 | 79.31 | 81.14 | 84.67 | 89.34 | 84.13 | 82.67 |       |       |
| Umm Lulu-vs Murban                                                   | +0.05 | +0.20 | +0.20 | +0.15 | +0.15 | +0.20 | +0.25 | +0.25 | +0.25 | +0.25 | +0.25 | +0.15 | +0.15 | +0.20 | +0.20 | +0.15 |       |       |
| Upper Zakum [34.1°]                                                  | 78.45 | 83.41 | 75.09 | 75.01 | 80.78 | 86.68 | 93.42 | 90.50 | 83.82 | 77.49 | 78.91 | 80.99 | 84.42 | 89.74 | 84.23 | 82.52 |       |       |
| Upper Zakum-vs Murban                                                | -1.10 | -0.70 | -0.50 | -0.60 | +0.00 | -0.60 | -0.50 | -0.50 | +0.50 | -0.20 | -0.15 | +0.00 | -0.10 | +0.60 | +0.30 | +0.00 |       |       |

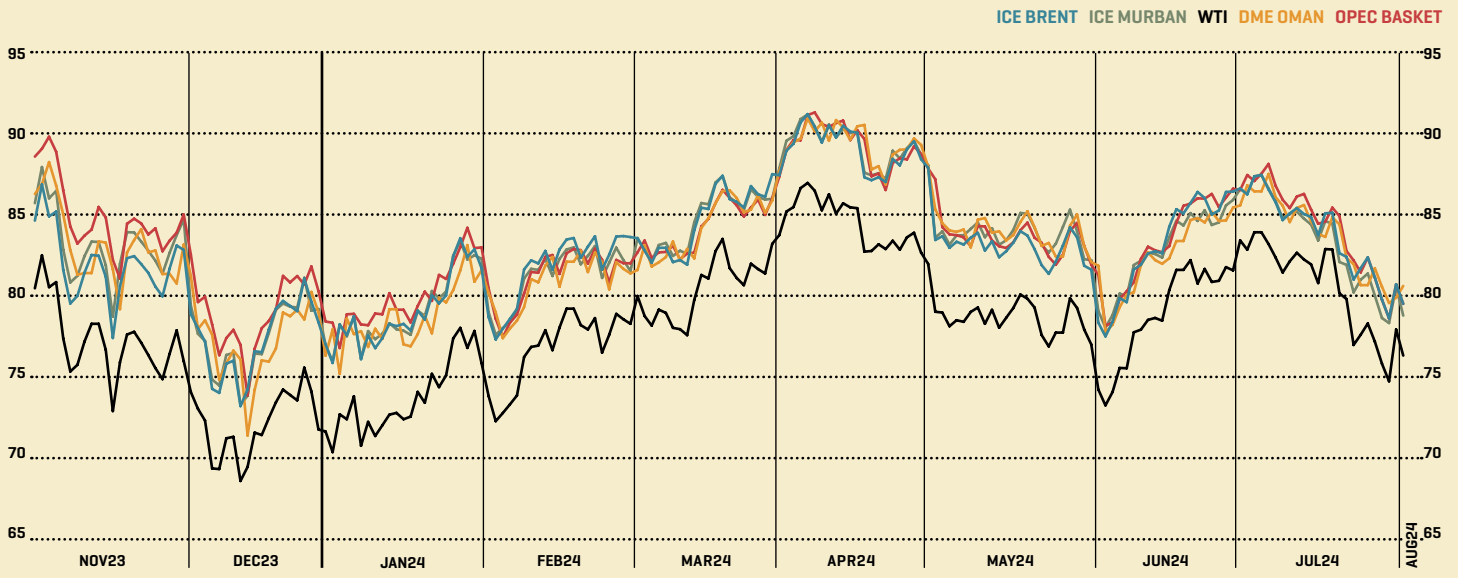
## SAUDI LPG OFFICIAL CONTRACT PRICES (\$/T)

|         | May23 | Jun23 | Jul23 | Aug23 | Sep23 | Oct23 | Nov23 | Dec23 | Jan24 | Feb24 | Mar24 | Apr24 | May24 | Jun24 | Jul24 | Aug24 |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Propane | 555   | 450   | 400   | 470   | 550   | 600   | 610   | 610   | 620   | 630   | 630   | 615   | 580   | 580   | 580   | 590   |
| Butane  | 555   | 440   | 375   | 460   | 560   | 615   | 620   | 620   | 630   | 640   | 640   | 620   | 585   | 565   | 565   | 570   |

## BENCHMARK CRUDE PRICES (\$/B)

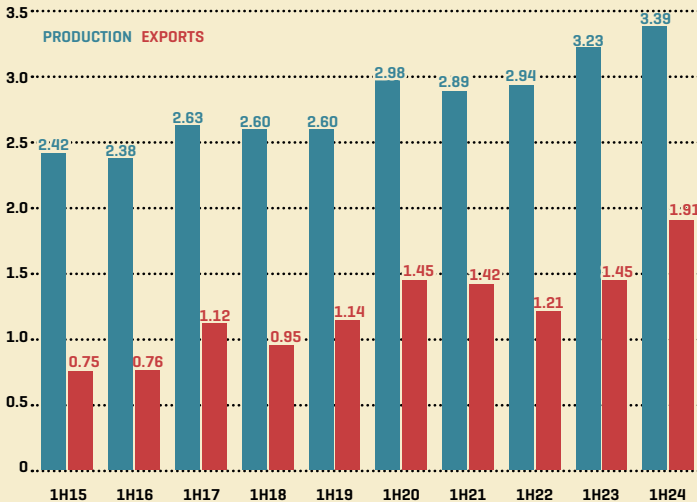
|             | 1Aug  | 22-26Jul | 15-19Jul | Jul24 | Jun24 | May24 | Q2 2024 | Q1 2024 | Q4 2023 | 2024 (1Aug) | 2023  | 2022   | 2021  |
|-------------|-------|----------|----------|-------|-------|-------|---------|---------|---------|-------------|-------|--------|-------|
| WTI         | 76.31 | 77.95    | 81.69    | 80.63 | 78.84 | 78.58 | 80.61   | 76.99   | 78.31   | 79.05       | 77.58 | 94.37  | 68.09 |
| ICE Brent   | 79.52 | 81.72    | 84.28    | 83.88 | 83.06 | 83.00 | 85.02   | 81.84   | 82.69   | 83.47       | 82.18 | 99.02  | 70.97 |
| ICE Murban  | 78.80 | 80.91    | 83.79    | 83.51 | 82.78 | 83.76 | 85.24   | 81.71   | 83.74   | 83.46       | 82.80 | 98.84  | 72.92 |
| DME Oman    | 80.61 | 81.46    | 84.25    | 83.84 | 82.45 | 83.86 | 85.20   | 81.25   | 83.39   | 83.32       | 82.02 | 94.42  | 69.00 |
| OPEC Basket | 80.79 | 81.89    | 84.93    | 84.44 | 83.24 | 83.59 | 85.33   | 81.83   | 85.23   | 83.70       | 82.90 | 100.01 | 69.82 |
| JCC         | na    | na       | na       | na    | 87.85 | 88.87 | 87.48   | 84.09   | 92.26   | na          | 86.56 | 102.70 | 69.11 |

AVERAGE SETTLEMENT PRICES FOR PERIOD IN QUESTION.

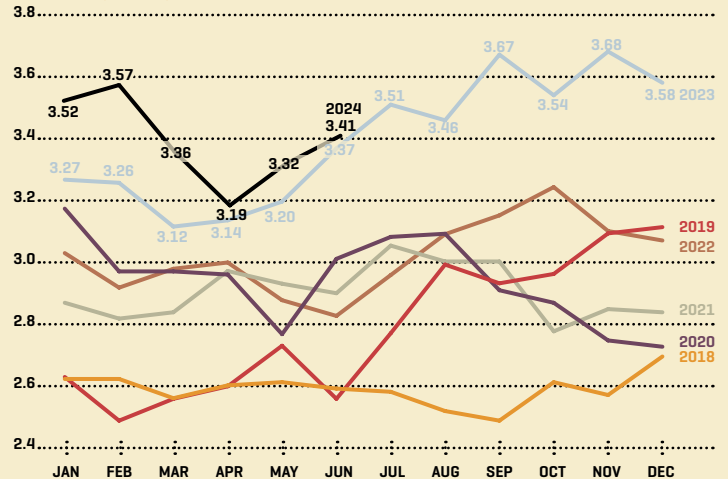


## BRAZIL CRUDE OUTPUT & EXPORTS ON PACE FOR RECORD 2024

BRAZIL'S CRUDE OUTPUT AND EXPORTS BOTH SURGED TO NEW RECORDS FOR 1H 2024...



...THOUGH MONTHLY OUTPUT FIGURES FOR NOW REMAIN BELOW THE HIGHS SET LATE LAST YEAR (MN B/D)



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