

GEOPOLITICAL RISK

Israel Preps Energy Sector For War, Jordan Exposed

MEES looks in depth at Israel's energy sector preparations for war with Hezbollah. Israel is ready to switch out gas for diesel and coal in power generation, but Egypt, and especially Jordan, would be heavily exposed to any halt in Israel gas deliveries. **Page 6**



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ECONOMY & FINANCE

Egypt's Finances Hit By Suez Revenue Collapse

Egypt's 2023-24 finances show a marked improvement thanks to \$35bn of UAE cash. But with Suez Canal earnings collapsing Egypt is not out of the woods. **Page 13**

DOWNSTREAM

Egypt's Green Hydrogen Snags Sales Deal

Egypt's first green hydrogen project now eyes FID in 1H 2025 on the back of a German sales deal. Tying up finance is next. **Page 9**

UPSTREAM OIL & GAS

Kuwait Makes Major Offshore Oil & Gas Find

Kuwait has announced a 'commercial' 2bn barrel+ offshore find some two years after drilling commenced on the first well in its campaign. Six wells are planned in total. **Page 2**

CORPORATE

Iraq's Midlands Oil Eyes Portfolio Boost

Iraqi state firm Midlands Oil has seen output edge higher this year. But aging producing assets mean substantial further gains rest on unlocking gas prospects. **Page 3**

POWER & WATER

Cairo Eyes More Gas By Any Means Necessary

Egypt's power demand is soaring. With gas output falling, Egypt is looking to import more LNG whether via a second FSRU or re-engineering its export terminals. **Page 10**

POWER & WATER

Power Records As Temperatures Soar

Egypt, Algeria and Kuwait have all recorded power demand records in recent days. With Egypt blackouts and Kuwait's stretched buffer, Algeria appears the most relaxed. **Page 11**

POWER & WATER

Qatar Set To Double Solar Capacity

Qatar has completed the panel installation totalling 875MW at its two major industrial hubs of Ras Laffan and Mesaieed, doubling national capacity to 1.675GW. **Page 12**

SELECTED DATA

Saudi Crude Burn: Significant Progress At Last

Saudi crude burn fell counter-seasonally to a 15+ year low for May as efforts to boost solar and gas capacity start to bear fruit. **Page 16**



Kuwait Announces Major Offshore Oil & Gas Discovery

Kuwait has announced a 'commercial' 2bn barrel+ offshore find some two years after drilling commenced on the first well in its campaign. Six wells are planned in total.

Almost two years after kicking-off its first offshore drilling campaign in decades, Kuwait Oil Company (KOC) has announced the "commercial" Nokhetha discovery. Initial resource estimates for the 96km² field, based on results from the NO-0001 (also known as Nokhetha-1) well, point to 2.1bn barrels of light oil and some 5.1tcf of associated gas for a total of 3.2bn barrels of oil equivalent, KOC says.

Kuwait sees its planned six-well offshore program as key to bolstering its proven reserves, but like every other project in the emirate it has suffered years of delays.

Drilling was slated to start in 2016, but it was only in 2019 that Halliburton was awarded a three-year contract to drill six high-pressure high-temperature (HPHT) wells using two jackup rigs (MEES, 19 July 2019). The Covid-19 pandemic meant further delays, with the Nokhetha-1 well only spudded in August 2022 after the arrival of the first of two rigs supplied by China's COSL, the Oriental Phoenix (MEES, 24 June 2022).

Now that the Oriental Phoenix is done with Nokhetha-1, KOC said on 17 July that it has moved to commence drilling 'Jazza-1'. Vessel tracking shows the rig's position near the 1960s Hamour-1 discovery (oil shows) some 23km south-west of the Nokhetha find (see map).

COSL's second rig (Oriental Dragon-1) arrived offshore Kuwait in mid-2023 (MEES, 21 April 2023). KOC CEO Ahmed al-Eidan subsequently told MEES that a second well was set to begin drilling by end-2023 with the six-well program to conclude by end-2026 (MEES, 29 September 2023).

Oriental Dragon-1 has been positioned offshore Julaiah since late-2023, implying continued drilling near the previously-drilled Julaiah-1 well, which showed oil.

MORE DRILLING PLANNED

Drilling was preceded by extensive seismic, geological and geophysical studies, and learnings from a handful of KOC offshore wells drilled in the 1960s and 1980s. Mr Eidan says KOC also integrated data from 2,000 analogue northern Gulf onshore/offshore fields in neighboring Iraq, Iran and Saudi Arabia.

For Nokhetha-1, KOC says the well tested at 2,800 b/d light oil and 7mn cfd

of gas from the Minagish reservoir.

KOC says that there is a "high probability" that the initial Nokhetha reserves estimate will be revised upwards once other formations are appraised. It says the discovery is a "turning point" in efforts to explore for hydrocarbons in Kuwait's exclusive economic zone (EEZ). That said, Nokhetha-1 was drilled close to un-demarcated borders with both Iran and Iraq, prompting the latter to protest to the UN that the drill site lies within its EEZ (MEES, 8 September 2023).

Geologically, the formation belongs to the lower Cretaceous, and its middle section (Minagish Oolite) produces oil in South Kuwait and the Partitioned Neutral Zone (PNZ), whose oil output is split 50/50 with Saudi Arabia. Minagish oil is produced from Kuwait's Burgan, Umm Gudair, Wafra, South Fuwaris, and namesake Minagish fields, and is also present in the Hout and Dorra fields offshore the PNZ.

In Kuwait, the Minagish Oolite produces crude in the 28°-33.4°API range with 2.6% sulfur. As such, Nokhetha crude is likely to be of broadly similar quality to 31°API Kuwait Export Blend. In the Minagish field, however, the presence of very high density tar in the section has decreased permeability and reduced reservoir pressure forcing KOC to implement EOR techniques (MEES, 15 March 2013) including miscible gas injection.

Offshore exploration is key to Kuwait's strategy of boosting reserves. Kuwait's 2040 strategy also aims to achieve this by improving recovery at existing fields. The bulk of Kuwait's 2.4mn b/d output (excluding its PNZ share) comes from the giant Burgan field. But, like other old fields in KOC's portfolio, reserves are mature with high water cut. As such, demanding maintenance requirements including installing ESPs and workovers are needed. Add exploration and the expansion of operations to more complex reservoirs, and Kuwait's upstream bill is rising rapidly (MEES, 22 July 2022). KPC CEO Sheikh Nawaf Al Sabah told Reuters on 18 July that Kuwait will spend KD7bn (\$22.9bn) on upstream operations over the next five years.

KOC says it hopes to begin development of offshore finds "at the earliest opportunity," but with the drilling program slated to last until the end of 2026, bringing commercial volumes



online before 2030 will be a challenge.

DORRA DEVELOPMENT PLANS

But perhaps an addition to offshore PNZ output will come before this with Sheikh Nawaf expecting front-end engineering and design (FEED) studies for the Dorra gas field to conclude this summer and for "drilling and facility construction procedures" to begin before end-2024. Kuwait and Saudi Arabia aim to complete work on production facilities in 2029 with output to subsequently ramp up to 1bn cfd (MEES, 13 October 2023).

But in order to handle developments outside the PNZ, KPC needs to develop its own offshore operational capacity. In doing so, it may call on expertise from its subsidiaries Kuwait Gulf Oil Company (KGOC) and foreign upstream arm Kufpec (MEES, 12 January). KGOC holds Kuwait's 50% share in the PNZ's offshore Khafji Joint Operations.

Whilst 2030 looks optimistic, it is reasonable to hope that offshore output will play a part in Kuwait's target of hitting 4mn b/d capacity, inclusive of its PNZ share, by 2035. For now, work is focused on boosting PNZ-inclusive capacity from 2.9mn b/d to 3.2mn b/d by end-2024, with a focus on Burgan and smaller increments elsewhere (MEES, 7 July 2023). ♦♦

Iraq's Midlands Oil Hopes For Gas Boost To Staid Asset Portfolio

Iraqi state firm Midlands Oil has seen output edge higher this year. But aging producing assets mean substantial further gains rest on unlocking gas prospects.

Iraq's Midlands Oil Co, despite having the largest operational area allocated to a single state-owned upstream subsidiary, has an underwhelming portfolio of oil and gas assets compared to prolific fields in Iraq's southern heartland of Basra, Maysan and Dhi Qar provinces. But this could change if the country's recent upstream bid rounds (MEES, 17 May) yield sizeable resources.

The rounds were dominated by small Chinese firms, some of whom Midlands has experience dealing with. Formed in 2010, Midlands' remit spans 30 oil and gas fields in eight provinces in central and western Iraq. Only five are producing, only one of which, the northern portion of East Baghdad oilfield, is operated by Midlands Oil. The other four are operated by foreign partners, with Chinese state firm Zhenhua lead partner at the largest two fields (see table).

According to its latest published data, Midlands' overall production stood at 124,000 b/d and 125mn cfd in May, a respective 14,000 b/d and 18mn cfd above end-2023 levels. These volumes are mostly marketed domestically, largely feeding power plants in Wasit, Baghdad and Anbar provinces.

EAST BAGHDAD: NEW TARGET

East Baghdad–North produces a meagre 8,000 b/d while 36,600 b/d comes from Zhenhua-operated East Baghdad–South. Output from the heavy oil field's two flanks appears to be comingled then processed at shared 60,000 b/d surface processing facilities.

Midlands says combined capacity stands at 55,000 b/d, well above the current 44,000 b/d output figure. Aside from Opec+ related curtailment, which typically falls on smaller fields, this implies low well productivity and bottlenecks. CEO Mohammed Yasin says that 38 wells have been drilled to date at East Baghdad–North and 89 at East Baghdad–South. It's unclear how many of these currently produce.

In April, oil minister Hayan Abdulghani said that Zhenhua is now target-

IRAQ'S MIDLANDS OIL: PRODUCING FIELDS...

Field	Province	Firms	Output (May 2024)	
			Oil ('000 b/d)*	Gas (mn cfd)^
East Baghdad-North^	Baghdad	Midlands Oil [100%]**	7.8	14
East Baghdad-South^	Baghdad	Zhenhua 90%op, North Oil 10%	36.6	19.5
Badra	Wasit	Gazprom Neft 30%op, Kogas 22.5%, Petronas 15%, TPAO 7.5%, OEC 25%	22.4	25.6
Ahdab	Wasit	Zhenhua 75%op, Somo 25%	56.0	33.9
Akkas	Anbar	Midlands Oil [100%]**	0.8	31.7
TOTAL			123.7	124.9

...& EXPLORATION ASSETS

	Province	Firms	Status
Mansuriya	Diyala	Jereh, Petro-Iraq	Contract signed
Naft Khana	Diyala	Geo-Jade	Contract signed
Khashim al-Ahmar/Injana	Diyala	Crescent Petroleum	Contract signed
Gilabat-Qamar	Diyala	Crescent Petroleum	Contract signed
Khliesiea^^	Nineveh & Anbar	Kar Group	Bid won
Qurnain	Najaf & Anbar	Zhenhua	Bid won
Zurbatiya	Diyala & Wasit	Geo-Jade	Bid won
Dhafriyah	Wasit	Anton Oil	Bid won
Middle Euphrates Cluster	Najaf & Karbala	ZPEC	Bid won
Block 7	Diwaniya, Babil, Najaf, Wasit & Muthanna	CNOOC	Bid won

*CRUDE EXCEPT AKKAS (CONDENSATE). ^GAS OUTPUT FIGURES ARE WELL HEAD NUMBERS. EAST BAGHDAD OUTPUT IS FLARED. **EAST BAGHDAD-NORTH TO BE TRANSFERRED TO ZPEC, AKKAS TO UKRZEMRESURS. ^^KHLIESIEA MAY FALL UNDER NORTH OIL. SOURCE: IRAQ MINISTRY OF OIL, IEIT, MEES.

IRAQ'S MIDLANDS OIL COMPANY: KEY ASSETS

■ GAS FIELD/PIPELINE ■ OIL FIELD/PIPELINE ■ LR5 BLOCKS ■ LR5+ BLOCKS ■ LR6 BLOCKS ■ OTHER MIDLANDS ASSETS



Continued on – p4





Continued from – p3

ing a hike in output to 80,000 b/d at East Baghdad–South, twice the previous 40,000 b/d plateau target, without providing a timeline. The new target would see gas output reach 50mn cfd.

More wells are being added; state firm Iraqi Drilling Co and China's COSL have been contracted to drill 27 new wells, of which 22 had been drilled as of 14 July.

Currently, all gas is flared except for minute volumes used for operations at East Baghdad–North. Mr Yasin says capture facilities are under construction at East Baghdad–South where Iraq last year eyed financing 12mn cfd of gas capture capacity via carbon credits (MEES, 27 October 2023).

AHDAB: RECENT GAINS BUT DOUBTFUL FUTURE

But, notwithstanding the East Baghdad–South expansion plans, Midlands' largest producer is the second Zhenhua-operated field, Ahdab in Wasit province. Here output had rebounded to a "milestone" 60,000 b/d as of end-June from 56,000 b/d in May on the back of gas lift at two wells, according to a 13 July statement by Zhenhua's operating subsidiary, Waha Petroleum.

But output remains well below both the 135,000 b/d plateau target and 140,000 b/d capacity of the surface facilities. Such figures are unlikely to ever be regained. Waha faces troubles with authorities over unpaid taxes and in late-2022 the Federal Board of Supreme Audit reportedly revealed that Zhenhua's state partner, Iraqi federal marketer Somo, had withdrawn from the contract "due to high costs," and that "operating expenses are higher than revenues." That said, MEES is told that Somo remains a partner at Ahdab.

BADRA: FALLING OUTPUT...

The story is similar at Wasit's other field, Badra, where output peaked above 85,000 b/d in 2018 but began to wither soon after (MEES, 8 March).

By 2021, Vadim Yakovlev, deputy CEO of operator Gazprom Neft, said that after exhausting 50% of the reserves, production was in decline with his firm looking to re-negotiate terms. Attempts to stabilize production at 75,000 b/d failed, and output stood at a meagre 22,000 b/d in May.

...BUT GAS NEEDED TO SUPPLY LOCAL POWER PLANTS

Speaking to parliament in 2021 (MEES, 9 July 2021), former oil minister Ihsan Ismael acknowledged that Ahdab and Badra had been kept online to "help Wasit [through petrodollar allocations] despite economic

losses to the state." He estimated the cost of production then at \$26/B.

Another reason is that, with almost all gas captured at both fields, Ahdab's dry gas output of 31.2mn cfd for May and Badra's 11.6mn cfd are needed for fuel at nearby power plants.

Indeed, the bulk of oil as well as gas output from Midlands' fields is used in electricity generation. Wasit's 2.5GW steam turbine power plant last year received 44,000 b/d of crude and 30.4mn cfd gas from Ahdab and Badra. Baghdad's 1.4GW Qods steam turbine plant also received some 28,500 b/d of crude from East Baghdad. Zhenhua is building a 16-inch 66km pipeline from East Baghdad–South to Wasit's 2.5GW oil-fired Zubaidiya plant.

AKKAS: GAS OUTPUT DOWN

In March 2023, in response to a lack of interest from international investors in Anbar's 5.6tcf Akkas field, operatorship was handed over to Midlands Oil which began producing at 60mn cfd from four existing wells. Output since halved to 31.7mn cfd by May and is fed via a short 30km line to the 250MW Akkas power plant with minimal treatment. With Iraq having awarded Akkas to little-known Ukrainian firm Ukrzemresurs (MEES, 26 April), at end-June CEO Maksym Mustafin and his team visited Akkas to "assess the field's conditions and equipment."

Midlands is also poised to relinquish the second of its operatorships, that of East Baghdad–North, to Chinese independent ZPEC.

As for future prospects, though there are a slew of recently-awarded assets under Midland's remit, most of the operators are small and cash-strapped.

On the positive side, Midlands has under its jurisdiction Federal Iraq's largest known non-associated gas fields. In addition to Akkas, where 100mn cfd is planned by 2026 then 400mn cfd by 2029–30, another 100mn cfd could be brought from Diyala province's 4.5tcf Mansuriya field by end-2025 then 300mn cfd by 2028–29. In May, Midlands signed up Chinese services provider Jereh for Mansuriya in consortium with a local private firm (MEES, 24 May).

More free gas could be unlocked from Sharjah-based Crescent Petroleum's Khashim al-Ahmar/Injana and Gilabat-Qamar fields in Diyala. The Emirati firm activated its contracts in late 2023, and targets a fast-track 250mn cfd from Khashim al-Ahmar/Injana feeding the nearby 1GW gas-fired Mansuriya plant (MEES, 20 October 2023).

That accelerated plan should take 18 months once work begins. But like Anbar's Akkas, security concerns remain a challenge in Diyala given strong presence by Iran-aligned Popular Mobilization Units. ♦♦

Saudi Plans Wind Turbine & Solar PV Plants With China Tie-Ups

Saudi Arabia is looking to leverage massive plans for renewables capacity expansion (MEES, 28 June) to develop in-kingdom wind turbine and solar panel manufacturing facilities.

The country's PIF sovereign wealth fund on 16 July announced three separate JVs with Chinese firms "to localize in Saudi Arabia the manufacturing and assembly of equipment and components needed for solar and wind power."

PIF – via its wholly-owned Renewable Energy Localization Company (RELC) – and local firm Vision Industries will team up with Shanghai-based wind turbine manufacturer Envision Energy "to transform Saudi Arabia into a manufacturer of wind turbines and components." The JV plans the "manufacture and assembly of wind turbine components including blades with an estimated annual generation capacity of 4GW. Envision will have 50%, RELC 40% and Vision Industries 10%.

Envision's own 17 July announcement suggests ambitions beyond Saudi Arabia: "this venture aims to accelerate wind power growth throughout the Middle East," the Chinese firm says.

The second JV, with the world's leading solar panel manufacturer Jinko, "entails localizing the manufacture of photovoltaic cells and modules for high-efficiency solar generation" with a planned 10GW/year manufacturing facility. Jinko will have 40%, RELC 40% and Vision Industries 20%. Jinko says that \$1bn investment is planned (PIF gives no dates or prospective investment figures for any of the JVs).

The third deal aims to "localize production of solar photovoltaic ingots and wafers with annual production sufficient to generate 20GW of power" with TCL Zhonghuan to have 40%, RELC 40% and Vision 20%. Riyadh targets the local manufacture of 75% of domestically-used renewables components by 2030, a potentially large market given the Saudi target of 100–130GW renewables capacity by the same date.

PIF says that RELC was set up with the purpose of "creating partnerships between leading global manufacturers and the Saudi private sector to meet growing local and export demand for renewable energy, and secure and strengthen local supply chains" with the purpose of "replacing liquid fuels currently used in electricity and other sectors in Saudi Arabia, in line with Saudi efforts toward achieving Vision 2030 targets."

KOREA CRUDE IMPORTS: NEW UAE RECORD

*South Korea's crude imports from the UAE surged by 41% to 418,000 b/d for 1H 2024, putting this year on track for the highest annual figure since 2008's 433,000 b/d. On a quarterly basis, Q2's 425,000 b/d was also a 16-year high topping the 410,000 b/d marker set in Q1 [MEES, 19 April]. April's 570,000 b/d was a 21-year high on a monthly basis [MEES, 17 May].

*Korea's overall crude imports were up 1.5% at 2.82mn b/d for 1H 2024, putting 2024 on track for the highest annual figure since 2019, albeit some 210,000 b/d below the record annual figure of 3.03mn b/d set in 2017. South Korea is the world's number four crude importer behind China, the USA and India, and as such represents a key element of global demand. Demand in China, the key growth engine of recent years, is spluttering [see p14].

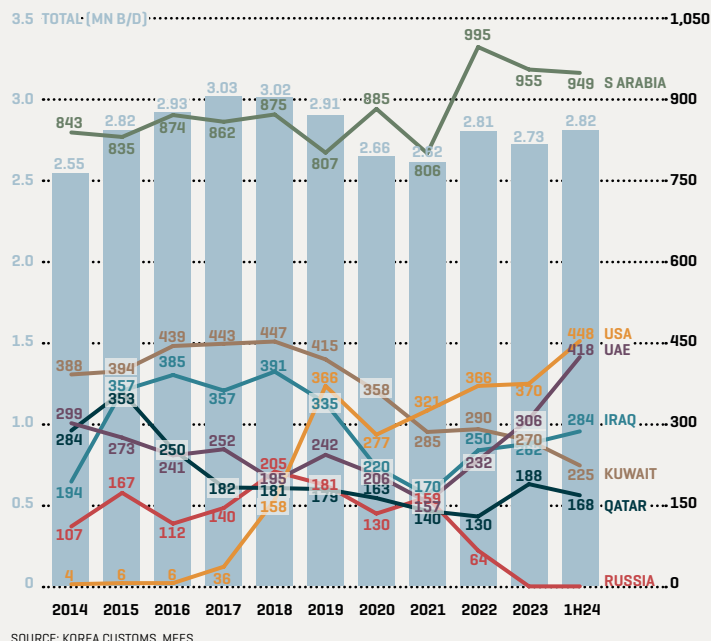
*Saudi remains a clear number one as it was for 2023 [MEES, 19 January] but saw its market share fall below 34% from 35% a year earlier, with volumes down 1.1% at 949,000 b/d for 1H 2024.

*Despite the surge in UAE volumes, the USA retained the overall number two spot with volumes rising by 26% year-on-year to 448,000 b/d for 1H 2024 including a monthly record of 572,000 b/d for May. This puts US-Korea volumes well on pace to smash last year's record of 370,000 b/d.

*Iraq was Korea's number four supplier for 1H 2024 with 284,000 b/d, up 5% to pull well clear of Kuwait, down 15% at 225,000 b/d. Indeed, Kuwait volumes fell again to just 187,000 b/d for Q2, a 22-year low quarterly figure and only just ahead of number six Qatar on 183,000 b/d [see table & chart].

*Korea was Kuwait's number two export market for 2023, and though Kuwait's crude exports have slumped this year as more crude is refined domestically at the new Al Zour refinery [MEES, 15 March], shipments to Korea are set to receive a fillip from a recently-signed MoU for KPC to store crude in Korea [MEES, 14 June]. Such volumes would not typically appear in Korea's import stats, however.

SOUTH KOREA CRUDE & CONDENSATE IMPORTS ('000 B/D): SAUDI STEADY FOR TOP SPOT AMID USA & UAE SURGE



KOREA 1H24 CRUDE IMPORTS ('000 B/D): SAUDI STILL WELL AHEAD DESPITE RECORD UAE VOLUMES

	1H24	vs 1H23	%	1H23	2Q24	vs 1Q24	%	vs 2Q23	%	1Q24	4Q23	3Q23	2Q23	2021	2022	2023	Apr24	May24	Jun24
MIDDLE EAST	2,061	+53	+2.6	2,008	2,042	-39	-1.9	+76	+3.9	2,081	1,962	1,994	1,966	1,576	1,907	1,993	2,223	1,950	1,953
% of total	73.1	+0.8		72.3	73.7	+1.1		+0.2		72.6	70.3	77.2	73.5	60.2	67.9	72.9	74.9	69.0	77.4
Saudi Arabia	948.6	-10.5	-1.1	959.1	958.9	+20.6	+2.2	+49.0	+5.4	938.3	935.6	964.9	910.0	806.3	995.2	954.7	993.8	1,014.5	868.5
% of total	33.7	-0.9		34.6	34.6	+1.9		+0.6		32.7	33.5	37.4	34.0	30.8	35.5	34.9	33.5	35.9	34.4
UAE	417.5	+122	+41.4	295.2	424.7	+14.4	+3.5	+141.0	+49.7	410.3	336.7	295.1	283.7	156.8	232.5	305.6	569.6	287.4	417.2
Iraq	283.8	+14	+5.2	269.7	266.0	-35.5	-11.8	-9.8	-3.6	301.5	293.4	213.4	275.8	170.2	249.6	261.6	204.1	283.1	310.8
Kuwait	224.6	-39	-14.7	263.4	187.4	-74.4	-28.4	-63.7	-25.4	261.8	255.2	296.1	251.1	284.7	289.9	269.5	164.8	188.9	208.5
Qatar	168.4	-47	-21.8	215.5	182.6	+28.4	+18.4	-52.1	-22.2	154.2	108.4	213.6	234.8	139.6	130.0	188.3	224.4	175.8	147.8
Oman	18.3	+13	+248.0	5.2	22.0	+7.5	+52.1	+11.5	+109.9	14.5	32.5	10.7	10.5	17.9	9.5	13.4	66.1	0.0	0.0
AFRICA	42.3	+3	+7.6	39.3	36.5	-11.6	-24.1	+7.4	+25.5	48.1	64.4	27.1	29.1	84.8	73.4	42.5	35.6	61.1	12.7
Algeria	38.0	+15	+64.6	23.1	32.2	-11.5	-26.2	+7.5	+30.1	43.7	30.1	18.8	24.8	24.0	21.7	23.8	35.6	61.1	0.0
Nigeria	4.3	-7	-61.5	11.2	4.2	-0.2	-3.4	-0.1	-1.3	4.4	20.3	8.3	4.3	18.2	24.7	12.7	0.0	0.0	12.7
Mozambique	2.5	+3	-	0.0	2.4	-0.2	-7.1	+2.4	-	2.6	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0
AMERICAS	576.5	+77	+15.4	499.6	591.1	+29.3	+5.2	+136.2	+29.9	561.8	583.3	439.5	455.0	558.3	550.2	505.5	569.4	710.8	493.2
United States	447.9	+92	+26.0	355.5	470.2	+44.5	+10.5	+142.7	+43.6	425.6	470.6	296.6	327.5	321.5	365.6	369.5	394.2	571.6	444.7
Mexico	62.3	-15	-19.7	77.6	60.3	-4.0	-6.2	-5.6	-8.5	64.3	84.7	87.0	66.0	146.5	108.3	81.7	66.9	65.6	48.5
Brazil	59.0	-3	-5.3	62.3	60.6	+3.2	+5.7	+7.4	+13.9	57.4	28.0	46.0	53.2	64.1	62.9	49.7	108.3	73.6	0.0
Ecuador	6.2	+2	+47.9	4.2	0.0	-12.3	-100.0	-8.3	-100.0	12.3	0.0	9.9	8.3	2.9	2.7	4.6	0.0	0.0	0.0
FSU/EUROPE	68.9	-78	-53.1	147.0	33.1	-71.8	-68.5	-122.3	-78.7	104.8	99.0	64.7	155.4	325.0	213.1	114.4	34.9	64.3	0.0
Kazakhstan	43.8	-100	-69.5	143.5	33.1	-21.5	-39.5	-115.4	-77.7	54.6	54.4	64.7	148.4	69.6	116.6	101.6	34.9	64.3	0.0
United Kingdom	21.9	+22	-	0.0	0.0	-43.7	-100.0	+0.0	-	43.7	44.6	0.0	0.0	49.3	25.2	11.1	0.0	0.0	0.0
Norway	3.3	-0	-6.1	3.5	0.0	-6.5	-100.0	-6.9	-100.0	6.5	0.0	0.0	6.9	47.4	7.7	1.7	0.0	0.0	0.0
ASIA/OCEANIA	69.8	-14	-17.1	84.2	69.4	-0.8	-1.2	-1.6	-2.3	70.2	82.2	57.1	71.0	72.5	62.8	76.9	104.0	38.8	65.4
Australia	56.0	-16	-22.0	71.8	58.3	+4.6	+8.6	-9.7	-14.3	53.7	66.5	38.2	68.1	55.6	51.4	62.1	79.4	38.8	56.8
New Zealand	7.3	+7	-	0.0	8.5	+2.4	+39.2	+8.5	-	6.1	5.8	5.7	0.0	0.4	0.4	2.9	16.9	0.0	8.6
Indonesia	3.4	+2	+161.8	1.3	2.5	-1.8	-41.5	+2.5	-	4.4	4.8	3.3	0.0	1.7	0.0	2.7	7.6	0.0	0.0
Philippines	2.5	+2	-	0.0	0.0	-4.9	-100.0	+0.0	-	4.9	0.0	2.9	0.0	1.8	0.4	0.7	0.0	0.0	0.0
TOTAL	2,819	+40	+1.5	2,778	2,772	-93.8	-3.3	+95.5	+3.6	2,866	2,791	2,582	2,676	2,616	2,806	2,732	2,967	2,825	2,524
of which Opec	1,917	+90	+4.9	1,827	1,874	-86.5	-4.4	+123.9	+7.1	1,960	1,875	1,797	1,750	1,498	1,839	1,831	1,968	1,835	1,818
% of total	68.0	+2.3		65.8	67.6	-0.8		+2.2		68.4	67.2	69.6	65.4	57.3	65.5	67.1	66.3	65.0	72.0

SOURCE: KOREA CUSTOMS, MEES CALCULATIONS.

IN FOCUS: AS ISRAEL PREPARES ENERGY SECTOR FOR WAR WITH HEZBOLLAH, JORDAN & EGYPT LOOK EXPOSED

As Israel-Hezbollah tensions mount, Israel's contingency plans involve the shut-in of all three of its gas projects, Leviathan, Tamar and Karish. Alternative oil and coal supplies have been lined up. But Jordan and Egypt, both highly reliant on Israeli gas, look vulnerable.

Israel's energy sector was upended by the 7 October Hamas attack and the subsequent war in Gaza. Supplies of both gas and oil were heavily impacted with lost revenues topping \$1bn (MEES, 22 March). And whilst both had returned to normal by early this year, several key energy infrastructure projects deemed vulnerable to attack remain on hold (see table).

Whilst conflict in Gaza continues, Israeli officials led by Prime Minister Netanyahu have turned their attention to the threat from Hezbollah in Lebanon. "We are prepared for very strong action in the north. One way or another we will restore security to the north," Israel's PM said last month.

But if "eliminating Hamas" has proved difficult, then Hezbollah, with its symbiotic relationship with Iran's Revolutionary Guards, will prove a far more formidable foe. Since 7 October Iran has largely limited its support for Hamas to rhetoric; this will surely not be the case if Israel attacks the lynchpin of Tehran's 'forward defense' regional strategy. "Should [Israel] embark on full-scale military aggression, an obliterating war will ensue," Iran says.

In Israel's favor is that, with Hezbollah clearly looking to avoid all-out war, it will control the timing of any conflict. And a key element of preparation means ensuring Israel's energy sector is resilient to anything Hezbollah (or Iran) can throw at it.

GAS OUTPUT HALT...

As part of this, MEES understands that Israel plans to take all three of its producing gas fields – 1.2bn cfd Leviathan, 1.1bn cfd Tamar and 600mn cfd Karish – offline as a precautionary measure during at least the first phase of any conflict.

As such, a key element of Israel's war planning is preparing to switch out gas for coal and diesel in power generation. Despite gas' dominant 70.8% of generation for 2023, officials are confident this can be achieved.

"If gas production is stopped due to the war then all of the country's generation units that are currently using gas will be switched to diesel," former Senior IEC official Oren Helman tells MEES.

Energy minister Eli Cohen adds that "over the years, and especially since 7 October, dozens of discussions [on energy sector resilience in face of war] have taken place. The scenario of a

blackout lasting over 48 hours is very unlikely."

...WOULD LEAVE JORDAN & EGYPT EXPOSED

As such, though Israel was reliant on some 13bcm (1.26bn cfd) of domestically produced gas to provide 71% of its 2023 power supply, its extensive fuel-switching contingency planning means it may be less exposed to a halt in production than neighboring Egypt, and especially Jordan.

Though Jordan has made major strides in advancing renewables capacity in recent years, it is still reliant on fossil fuels for 80% of power generation, of which almost all is gas. For 2023, some 4% of this came from the domestic Risha field on the border with Iraq, but 96% was imported – and save two LNG cargoes all of this came from Israel (see chart).

Imports by Jordanian state power firm Nepco of 2.68bcm (259mn cfd) of Leviathan gas for 2023 accounted for 89% of the country's total power-sector gas consumption of 291mn cfd and just under 72% of the country's overall power supply.

Were these supplies to halt, then Jordan's key alternative is to increase LNG imports via its 750mn cfd Energos Eskimo FSRU at Aqaba on the Gulf of Suez. Indeed, data intelligence firm Kpler indicates that having imported zero cargoes at Aqaba for the first six months of 2024 (though Egypt imported four cargoes via the terminal in Q2: MEES, 5 July), Nepco is set to unload two cargoes totaling 140,000 tons during July alone.

Though it should be logistically possible to supply the country's gas-fired power capacity from Aqaba, cash-strapped Jordan will struggle to pull together the finances to replace Israeli gas with imported LNG which is likely to cost around twice the \$6/mn BTU that Nepco pays for Leviathan gas. Nepco is mired in debt. The IMF's latest Jordan report, issued earlier this month, estimates that Nepco's debts will hit \$6.1bn, the equivalent of 11.5% of Jordan's GDP, as of end-2024.

Other options include firing up the \$2.1bn 470MW power plant which was completed in 2020 to burn domestically produced oil shale but has since been mothballed with Nepco in dispute with Chinese-led developer Attarat Power over what it says are exorbitant power costs. The plant had been slated to meet 15-20% of Jordan's power needs (MEES, 29 January 2021).

Egypt, for its part, has become increasingly dependent on gas imports from Israel in recent months amid slumping domestic output (MEES, 12 July). Imports from Israel hit a quarterly record 1.03bn cfd for Q1, up again from 2023's annual record of 834mn cfd, though they dipped to 976mn cfd for Q2 (see p10).

The Q1 volumes equate to more than a quarter of Egypt's overall power supply, and a third of that of gas, the key fuel.

And Egypt has already had a key demonstration of its vulnerability to slumps in Israeli supplies – slumps that, needless to say, were much more modest than the total rupture

ISRAEL AT WAR: KEY ENERGY IMPACTS

7 OCTOBER & CONFLICT WITH HAMAS

Immediate Impact

Tamar Gas Field: 1.1bn cfd output offline for 37 days (production platform 25km from Gaza)

Israel-Egypt EMG gas pipeline offline for 37 days: Deliveries to Egypt halve to 415mn cfd for October

Crude imports: deliveries to key Ashkelon terminal collapse from 240,000 b/d for 9M23 to 47,000 b/d for Q4

Projects On Hold

Golan Heights wind project (104MW 'Clean Wind Energy'): was originally slated for 2H24 start-up

Karish field: doubling oil capacity to 32,000 b/d: was slated for end-2023

Ashdod-Ashkelon 46km gas pipeline link to boost deliverable Egypt/EMG capacity by 200mn cfd

Bid round award: provisional Oct 2023 awards yet to be finalized with awardees hesitant to commit

BP-Adnoc deal to take key Leviathan stake via NewMed deal: 'suspended' in March 2024, unlikely to be revived.

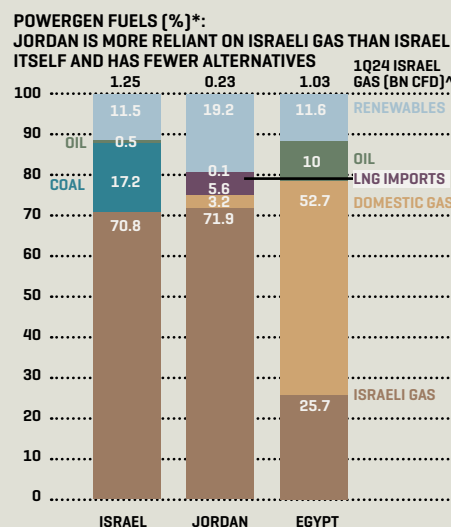
Jordan cancels landmark water for power deal involving UAE state firm Masdar

POTENTIAL IMPACT OF CONFLICT WITH HEZBOLLAH

Total halt to Israel's 2.9bn cfd gas output; halt to exports of 1bn cfd to Egypt and 250mn cfd to Jordan

Much of Israel's 126GW gas-fired capacity ready to switch to diesel, 4.8GW coal capacity to ramp up

Haifa Port with 197,000 b/d Bazan refinery & 5.9mn barrel storage tanks in line of fire



* FIGURES ARE FOR 2023 EXCEPT ISRAEL SHARE OF EGYPT GAS USE (1Q 2024) AND JORDAN RENEWABLE SHARE (2022). ^ ISRAEL-JORDAN GAS FIGURE IS POWERGEN USE ONLY (LEVIATHAN-NEPCO) AND EXCLUDES TAMAR SALES TO INDUSTRIAL USERS. SOURCE: MEES CALCULATIONS BASED ON NATIONAL STATISTICS, JODI, KPLER.

that an Israel-Hezbollah war could entail.

The key energy impact of Hamas' 7 October assault on Israel and the subsequent war was a 37-day halt to output from Israel's 1.1bn cfd Tamar field, whose production platform lies just 25km north of Gaza, as well as to deliveries to Egypt via the 600mn cfd offshore EMG pipeline which

Continued on – p7

Continued from – p6

skirts Gaza waters. Israel-Egypt gas deliveries slumped to just 350mn cfd from 800-900mn cfd pre-conflict, though by December they had rebounded to 1bn cfd (MEES, 17 November).

Much more recently, a dip in Israeli deliveries to 860mn cfd for June amid relatively-short outages at Tamar and Leviathan saw large parts of Egypt plunged into darkness and fertilizer plants shuttered (MEES, 28 June). Clearly, a complete halt to deliveries would have a far greater impact.

Egypt's key response to its growing gas shortfall has been to lease its own FSRU, with the 750mn cfd-capacity Hoegh Galleon arriving at the Red Sea port of Ain Sukhna last month and Egypt awarding a tender to import 21 LNG cargoes over Q3 (**MEES, 21 June**), of which five have already arrived.

Egypt's new oil minister Karim Badawi and PM Mostafa Madbouly have both pledged to put an end to the country's two hours per day of rolling blackouts by the end of July.

Mr Badawi this week said that state gas firm EGAS is examining the possibility of leasing a second FSRU or potentially switching its two LNG export terminals at Idku and Damietta to import – likely with one eye on the potential cut-off of supplies from Israel (see p10).

Egypt's other option is to ramp up burning of fuel oil in place of gas in power plants. Cairo last month earmarked \$180mn to import fuel oil to be used to burn for power (**MEES, 28 June**). Though fuel oil consumption of 77,000 b/d for April-May, according to the latest Jodi stats, was up only modestly on year-ago levels, Kpler data show imports of fuel oil and other dirty products surging to a monthly record of 193,000 b/d for June.

But of course, such options come at a cost to Egypt's stretched finances (see p13). Like Jordan, Egyptian importers typically pay \$6-7/mn BTU for Israel gas (prices vary with Brent crude, but not by much), around half the prices that Egypt is reported to have had to pay to secure LNG supplies via its recent tender – with Egypt's request for deferred payment terms adding to the cost.

THE DEPENDENCE THAT DARE NOT SPEAK ITS NAME

It is worth noting that, as far as MEES is aware, no Egyptian or Jordanian official has made any reference, even obliquely, to the potential for imports from Israel to be halted.

During last month's outages Egyptian officials obliquely referred to a halt in deliveries from "a gas field in a neighboring country," without ever mentioning Israel by name.

Jordanian officials have also been unwilling to mention their country's reliance on Israeli gas: Nepco's latest annual report says Jordan's mid-term strategy is to "reduce

reliance on imported fossil fuels for electricity generation," but makes no mention of what the key fuel is or where it comes from.

A reluctance to even openly acknowledge a dependence on Israel is unlikely to help foster joined-up strategic thinking when such supplies are under threat.

That said, Israeli officials are sensitive to the potential geopolitical implications of any halt in deliveries to Egypt in particular. Energy ministry director-general Yossi Dayan has asked to be personally informed about any potential field outage that could affect exports, MEES understands.

ISRAEL READIES SWITCH TO COAL AND DIESEL

In contrast, Israel has readied plans to fully fire up two giant coal-fired plants totaling 4.84GW – Rotenberg (2.25GW) in Ashkelon, and Orot Rabin (2.59GW) at Hadera (see map) – which amid the country’s switch to gas have in part been kept in reserve for contingencies such as this (see box, p8).

"We are no longer dependent on just two power stations in Ashkelon and Hadera," Mr Cohen says in reference to the two giant coal-fired plants, "there are dozens of power stations across the country [we can use]. We have stocked up on coal and diesel. We have deployed hundreds of generators nationwide." Mr Helman forecasts that switching from gas to diesel as a power fuel will cost the state an extra \$4-5bn per month.

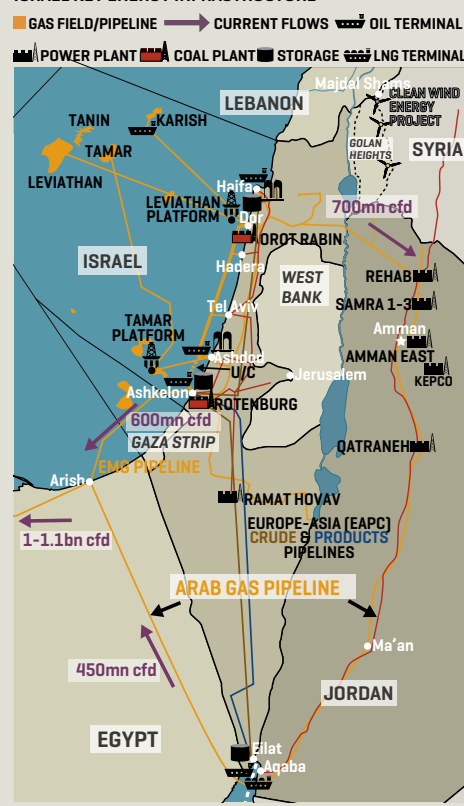
He also concurs that Israel will be able to keep the lights on during a first phase of conflict with Hezbollah, though should fighting widen to include Iran, and/or perhaps its allied militias in Iraq then all bets are off.

"If Hezbollah starts to target power plants and other strategic energy infrastructure that could potentially damage the grid this will of course impact Israel's ability to supply its customers and will inevitably lead to power cuts," he tells MEEs. "If there is damage and supply is cut then the government will need to prioritize where it supplies electricity and it could eventually result in several hours of blackouts," he warns.

IEC's most recent annual report says that as of end-2023 Israel had five weeks-worth of coal stocks if its plants are operating at full capacity. Stocks have likely risen since, though recent cargoes will not have come from former top supplier Colombia whose leftist government said it was halting shipments to Israel in response to the war in Gaza.

Israel has also been stockpiling diesel which can be burned as an alternate fuel in the bulk of its 12GW of gas-fired capacity. MEES understands that much of this may have gone undetected by ship tracking firms with the Israeli army (IDF) now routinely spoofing GPS signals, including those of tankers, to make it appear that they are at Beirut airport. The aim

ISRAEL KEY ENERGY INFRASTRUCTURE



is to reduce the ability of Hezbollah or other adversaries to target vessels supplying Israel – Yemen's Houthis have long made such a threat.

KEEPING OIL FLOWING...

Whilst Israel can and does import diesel and other oil products for both civilian and military use, in normal times the country's 230,000 b/d of oil product demand is mostly met by its two refineries, the 197,000 b/d Bazan (ORL) plant in Haifa and the 100,000 b/d Ashdod plant just 20km north of Gaza.

Of Israel's 2022 crude imports, some 85% came via the Ashkelon terminal which lies just 5km north of the Gaza Strip. But the use of the terminal was near-halted in the immediate aftermath of Hamas' incursion. Deliveries switched to Eilat on the Red Sea for two months and Ashdod 20km north of Ashkelon, but mostly to Haifa 150km to the north and well out of the range of Hamas rockets (see map & [MEES, 29 March](#)).

The episode illustrates both Israel's potential vulnerability but also the contingency plans it has in place. Of course, Hezbollah represents a different threat, both in terms of military capability and in terms of geography: in case of a war with Hezbollah it is Haifa and its Bazan refinery just 32km south of the Lebanese

Continued on – p8



Continued from – p7

border that will be most vulnerable to attack.

...BY ANY MEANS NECESSARY

As tensions have increased in recent months, MEES understands that some of ORL's legacy suppliers (or their insurers) have opted away from oil deliveries at Haifa due to the terminal's proximity to Lebanon. Trafigura vessels continue to supply Israel, so the reluctance may be coming from other key Israeli suppliers including Vitol, Switzerland's Petraco, or more risk averse majors like BP and Shell.

To cope with supply shortages, ORL has chartered multiple vessels to lift refinery feedstock (crude and vacuum gasoil) from producers directly. The time-chartered vessels have also performed ship-to-ship (STS) loadings in nearby Cyprus, then heading to Haifa.

Israel's spoofing of tankers' AIS signals means that Kpler recorded just three tankers ostensibly unloading a 10-year low 86,000 b/d at Israeli ports in June: two cargoes of Azeri Light and one of Kazakh CPC blend, all three at Ashkelon. As for Haifa, Kpler shows just 34,000 b/d unloading over 1H 2024 with zero for both May and June, the true figure is certain to have been far higher.

Eilat on the Red Sea is substantially less exposed to potential attack than Haifa or Ashkelon. Eilat is connected to Ashkelon by the EAPC crude pipeline that was built in the 1970s to import Iranian crude, as well as a parallel products pipeline. Though environmental regulations mean that tankers are banned from offloading at the port it was nevertheless pressed into service in the aftermath of the 7 October attack and would surely be used again if needed.

Another potential target for Hezbol-

lah is the oil storage facilities at these ports: 12.9mn barrels at Ashkelon, 8.5mn barrels at Eilat and 5.9mn barrels at Haifa.

GAS SHUT-IN PLANS

Whilst Tamar with its platform 25km north of Gaza was most vulnerable to Hamas attack, the country's other two fields, 1.2bn cfd Leviathan, like Tamar operated by US major Chevron, and the 600mn cfd Karish field of Greek firm Energean, are more vulnerable to attack from the north.

Leviathan's near-shore production platform and onshore facilities at Dor are around 60km south of the Lebanese border, whilst the Karish field's Energean Power FPSO is 80km west of southern Lebanon. Hezbollah previously threatened the vessel in 2022 when it had just arrived in Israeli waters amid heightened tension over the Lebanon-Israel maritime border, sending three unarmed drones which Israel shot down (MEES, 8 July 2022).

PROJECTS HALTED

Longer than the list of shut-ins is the list of projects which were placed on hold following 7 October, and for the most part remain on hold.

Although Karish continues to operate (albeit with some issues), operator Energean has suffered expansion setbacks linked to the Gaza conflict. Work to double the FPSO's oil output capacity from 16,000 b/d to 32,000 b/d through the installation of a second oil train has had to wait until the conflict subsides despite the infrastructure being complete and awaiting shipment (MEES, 24 May).

Work has also been halted on the construction of a 46km stretch of offshore pipeline linking Ashkelon and Ashdod that should help bypass bottlenecks within Israel's southern gas network and allow the increase in exports via the EMG

pipeline from 600mn cfd currently to around 800mn cfd. 45.34% Leviathan partner NewMed Energy estimates that work will be completed by Q2 next year (MEES, 31 May), though this is predicated on work resuming in Q4 this year.

And it's not only oil and gas that has felt the fallout, with renewable energy projects also impacted. Work has been halted on the 104MW Clean Wind Energy project located in the far north of the Golan Heights on the border with Hezbollah-controlled southern Lebanon (MEES, 15 March). Operator Energix of Israel, which said that even before 7 October protests by local Druze had held up work, now says that if and when work restarts it will take 12 months to complete the project (MEES, 31 May).

Energix's compatriot Enlight already has two wind projects with combined 316MW capacity operational on the Golan Heights and could also provide a relatively easy target for Hezbollah.

The war also saw Jordan can a groundbreaking water for power deal that would have included the UAE and Israel following the latter's continued offensive in Gaza (MEES, 24 November 2023).

In addition, provisional bid round awards, made to firms including Italy's Eni, UK major BP and Azeri state firm Socar on 29 October last year as Israel sought to convey a 'business as normal' image (MEES, 3 November 2023) have yet to be finalized. This may be linked to the firms' desire to avoid a potential consumer backlash from investing in Israel amid ongoing conflict in Gaza – February's International Energy Week in London saw the stage invaded by protestors at BP's supposed role in financing "genocide in Gaza" by investing offshore Israel, despite the fact that it has yet to make any investment.

Fear of geopolitical pushback is likewise a key reason that Adnoc and BP's planned joint purchase of 50% of NewMed and with it a stake in the key Leviathan field, has been "suspended," perhaps terminally (MEES, 15 March). ♦♦

ISRAEL'S COAL TO GAS SWITCH: STILL ON, FOR NOW

Of Israel's 23GW of end-2023 installed capacity, 12.3GW consists of primarily gas fired units, 4.84GW coal, and 5.9GW renewables.

Of the 'gas capacity' figure, both the 6.12GW operated by state generator IEC and the 6.22GW operated by independent power producers (IPPs) is capable of switching to diesel.

The IPP figure has been rising, most recently with the privatization earlier this year of the 1.68GW Eshkol plant in southern Israel (MEES, 17 November 2023).

The country's power sector is marked by two other key transformations. Firstly, the expansion of renewable capacity, which now tops 6GW (MEES, 31 May). And, secondly the gradual conversion of the country's remaining coal-fired capacity to run on gas. With gas produced domestically, and coal imported, this had long looked like a 'win' from a supply-

security as well as an environmental perspective. But such calculations may now be reconsidered with gas production facilities considered vulnerable to conflict (see main story).

Current plans would see 3.4GW of the country's remaining 4.84GW coal-fired capacity (Rotenberg 2.25GW, Orot Rabin 2.59GW) converted to gas by 2026. The remaining 1.4GW has already been mothballed but could be fired up "as part of exceptional operation conditions" IEC tells MEES.

As for conversion of the remaining units, IEC says the plan is for Units 5 and 6 at Orot Rabin, with combined capacity of 1.15GW (575MW each), to be converted to use natural gas by 30 March 2026 and 30 September 2026 respectively.

To replace units 1-4 at Orot Rabin, IEC is building two CCGT units with combined 1.2GW capacity. Unit 70 is due to be brought online in August while Unit 80

will likely be brought online next year.

At Rotenberg the combined 1.15GW (575MW each) units 1 and 2 have both been successfully converted to be able to use natural gas although they are still undergoing testing and await the system operator's green light to begin supplying electricity to the grid. IEC estimates that the 550MW unit 3 and 550MW unit 4 will be operational by 30 September 2024 and 30 March 2025 respectively.

While Israel has made a push to install efficient CCGT units where possible, IEC tells MEES "the converted coal units remain the same – steam technology which can now operate using natural gas or other fuels (coal or diesel oil / fuel oil)."

As part of its national strategy Israel had initially hoped to completely phase out coal burning by the end of next year to leave natural gas (70%) and renewables (30%).

EGYPT'S GREEN HYDROGEN PROJECT SECURES GERMAN SALES DEAL, WILL FINANCE AND FID FOLLOW?



Egypt's first green hydrogen project has taken a major step towards FID. Last week saw back-to-back announcements that Fertiglobe, sole offtaker for the 'Egypt Green Hydrogen' project at Ain Sukhna on the Gulf of Suez, had won an auction to supply green ammonia to German-backed H2Global for delivery to Europe, and from lead developer Scatec of Norway that the project had "signed a 20-year offtake agreement with Fertiglobe, based on the H2Global award."

The latter firms up a previous commitment from Fertiglobe to take the project's full 'Phase 1' green hydrogen output to process into ammonia at its existing Ain Sukhna plant. Fertiglobe is a 50:50 JV grouping Egypt's Orascom Construction (OCI) and Abu Dhabi state firm Adnoc.

The Scatec announcement reveals that the project's prospective hydrogen output figure has been revised down to 13,000 t/y from 15,000 t/y with prospective green ammonia output from Fertiglobe's facilities revised down from 90,000 t/y to 74,000 t/y as a result.

At the same time, whilst the electrolyzer capacity figure of 100MW has remained unchanged, the figure for dedicated renewables capacity has been revised up twice – the latest figure of 270MW follows an upward revision from 240MW to 260MW earlier this year. As such, the latest figures imply 48.1 t/y of green hydrogen output per MW of renewables capacity, some 23% lower than the original 62.5 t/y per MW. By comparison, figures for Saudi Arabia's landmark Neom green hydrogen project imply just over 59 t/y of green hydrogen output per MW of renewables capacity (237,000 t/y output, 4GW renewables).

1H 2025 FID?

Both Scatec and Fertiglobe say they are now targeting financial close and FID in the first half of 2025. This represents a one-year delay versus the 1H 2024 timing given in Fertiglobe's 2023 report at the beginning of May ([MEES, 3 May](#)).

"With Fertiglobe securing an offtake agreement for the ammonia, Egypt Green Hydrogen will accelerate the project's development and advance it towards financial close," Scatec CEO Terje Pilskog says.

"Next important milestones for the project are to select the electrolyser supplier and complete the project financing process with the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Germany's development finance institution and KfW subsidiary DEG, British International Investment (BII), and US International Development Finance Corporation (DFC), that are providing competitive financing to support the first green hydrogen and ammonia project in Egypt," Scatec says.

Indeed, evidence that securing finance will be Scatec's key focus over the coming months is that each of the prospective

*Award is one of the first to put a price on green ammonia: €1,000 [\$1,093] per ton, part of which would be covered by a German government subsidy.

*Volumes equate to around 60–70,000 t/y of ammonia over six years to 2033, likely close enough to the capacity of the Egypt Green project to justify FID if the deal can be firmed up.

*'Egypt Green' now targets 1H 2025 FID, back from 1H 2024, with attempts to complete financing now underway.

*Prospective green hydrogen and ammonia output figures have been revised down to 13,000 t/y (from 15,000 t/y) and 74,000 t/y (from 90,000 t/y), though electrolyzer size remains at 100MW.

financiers was roped in to provide a supporting quote in its latest press release.

'PILOT AUCTION'

Fertiglobe says H2Global "selected [it] as the winning bidder" in a "pilot auction" to supply "renewable ammonia out of Egypt at a delivered price of €1,000/ton [\$1,093/ton] until 2033."

Volumes would "start at a potential 19,500 tons in 2027 (subject to actual production start date and supply availability), with volumes potentially scaling up to 397,000 tons cumulatively by 2033."

As such Fertiglobe calculates the "contract value" as "up to €397mn [\$434mn]." Fertiglobe says the award "provides critical demand and pricing support to help Fertiglobe and the Egypt Green Hydrogen consortium reach a Final Investment Decision (FID) on the project in 1H 2025."

Presuming 2028 start-up – 2027 looks optimistic – the contract implies average annual volumes of 66,000 tons of green ammonia over the six years to 2023, likely close enough to Egypt Green's full 74,000 t/y capacity to justify FID, notwithstanding the substantially shorter time-frame versus Fertiglobe's 20-year offtake deal.

The award came via "H2Global's innovative... double-auction mechanism... whereby buyers and sellers actively participate." This aims to "facilitate the rapid expansion of renewable hydrogen and derivative products" by "bridging the difference between the high prices at which hydrogen is currently being traded on the global market, and the lower prices at which it can be sold on and be used in economically viable ways at regional level."

GERMAN FUNDING

H2Global is an initiative funded by the German government, which is backing the 'double-auction mechanism' to the tune of €4.43bn – a de facto subsidy to bridge the gap between sellers and buyers.

"The auction demonstrates that renewable ammonia can be imported into the EU at attractive prices with targeted support being offered to the most competitive international projects," Fertiglobe CEO Ahmed El-Hoshy says.

H2Global CEO Timo Bollerhey says "this first pilot auction has demonstrated that financial and procurement innovations like

H2Global's mechanism not only work but are needed to create thriving markets that motivate and mobilize private finance."

The pilot auction was initially launched at the end of 2022, with 22 companies/consortia qualifying for the 'lot 1' renewable ammonia portion, and "Fertiglobe emerging as the successful bidder from five finalists."

Prospective green hydrogen producers in Tunisia also eye Germany as a potential key market. But, whilst they have the advantage of an existing 'hydrogen-ready' pipeline link, output plans are at a much earlier stage than those in Egypt ([MEES, 28 June](#)).

Fertiglobe says that the H2Global award "to supply renewable ammonia to the European Union (EU)... builds on Fertiglobe and Adnoc's track record of delivering demonstration cargoes of renewable and low-carbon ammonia to Europe and Asia, supporting global low-carbon ammonia and hydrogen value chains."

Fertiglobe claimed a 'world's first' last November with the sale of a 30-ton "pilot" cargo of green ammonia from Ain Sukhna to the Indian subsidiary of Dutch detergents giant Unilever ([MEES, 24 November](#)). Green hydrogen feedstock came from Egypt Green's pilot electrolyser which started up alongside Egypt's Cop27 in late 2022 ([MEES, 11 November 2022](#)). Fertiglobe then in May announced the world's first "bulk commercial shipment of low-carbon ammonia enabled by carbon capture and storage" with Mitsui in Japan the buyer for the cargo supplied from its facilities at Ruwais in Abu Dhabi ([MEES, 31 May](#)).

Though the recent H2Global auction refers to "renewable" rather than "green" hydrogen/ammonia, EU rules on the potential level of acceptable associated CO₂ emissions likely mean that few if any prospective producers of blue ammonia (from natural gas via CCUS) will qualify. Fertiglobe says it is "committed to producing ammonia in compliance with EU regulations for renewable hydrogen and meeting the additional environmental and sustainability requirements set out in the tender."

US firm Air Products, which is a global pioneer in both green and blue hydrogen/ammonia production, sees Europe as the key target market for its more-expensive 'green' output and power generation in Japan and Korea as the likely market for less expensive (but higher carbon) 'blue' production ([MEES, 14 June](#)). ♦♦



Cairo Eyes More Gas Import Outlets Amid Record Power Demand

Egypt's power demand is soaring and with it demand for gas. With output falling, Egypt is looking to import more LNG by any means necessary.

Despite record power demand Egypt's PM Moustafa Madbouly, speaking on 17 July, said that thanks to a surge in LNG imports the country's two hours per/day of rolling blackouts will end this Sunday (21 July), until at least mid-September.

It's now up to new petroleum minister Karim Badawi (MEES, 5 July) to help him keep his word. Already, having in late June awarded a tender for 21 LNG cargoes for Q3 delivery (MEES, 28 June), Egypt has taken delivery of the first four cargoes totaling 290,000 tons, with two more to arrive over the coming week according to data intelligence firm Kpler.

Speaking to lawmakers on 14 July, Mr Badawi said that EGAS is considering leasing a second LNG floating storage and regasification unit (FSRU) to be moored at Ain Sukhna on the Gulf of Suez alongside the 750mn cfd Hoegh Gallant FSRU which Egypt took delivery of last month.

Mr Badawi adds that his ministry is also examining the possibility of reversing the flows of the country's two LNG exports terminals at Idku and Damietta both on the Mediterranean coast, to potentially receive imports.

Such a solution would be "very simple... relatively cheap and quick" from a technical standpoint, according to a stakeholder source at one of the LNG plants. "Just reverse flow, use existing LNG storage tank and add vaporizer," he tells MEES. That said, his definition of "quick" does not necessarily match that of Egyptian officials: conversion could happen within 12 months, he forecasts.

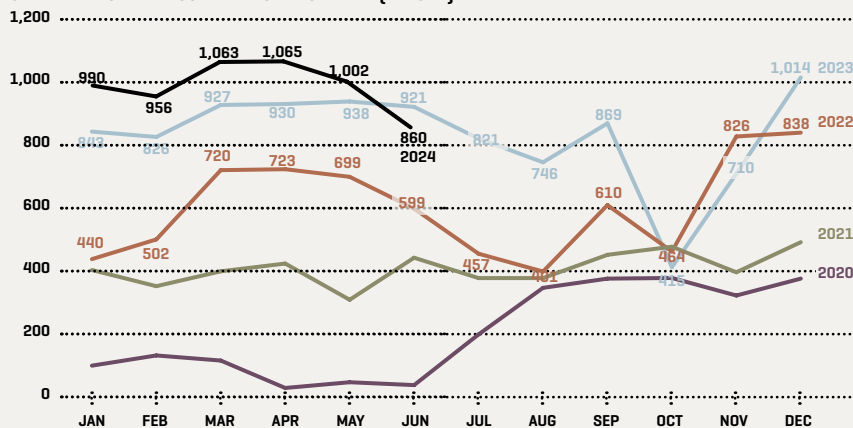
He adds that shareholders in the two facilities are likely to resist such a move.

However, the foreign partners at the 7.2mn t/y ELNG plant at Idku, joint operators Shell (36.8%) and Petronas (36.8%) and TotalEnergies (2.5%), and Eni which operates (50%) the 5mn t/y Segas facility at Damietta may have little say if Cairo decides to convert the plants. While they could threaten arbitration, this would likely prove futile.

"Cairo has no cash so it cannot pay the IOCs off – it could offer some exploration blocks in exchange – but I don't think any of the partners would take Egypt to court," the source adds.

While the foreign partners at the

EGYPT IMPORTS OF ISRAELI GAS DIPPED TO 8-MONTH LOW 860MN CFD FOR JUNE ON TAMAR OUTAGE BUT STILL AVERAGED A RECORD 1BN CFD FOR 1H24 (MN CFD)



SOURCE: JODI, MEES.

LNG facilities deny there has been an approach by Cairo regarding a potential conversion, the source says he believes it makes sense as Egypt will need more and more gas with little prospect of near-term exports. Damietta last exported a cargo in March and Idku in April.

This is largely due to Egypt's gas output continuing to slump, falling below 5bn cfd to 4.996bn cfd for May, the lowest in seven years (MEES, 12 July).

Mr Badawi, in setting out his plans, said that Egypt will see 110 oil and gas exploration wells drilled during the 2024-25 financial year which began 1 July with \$1.2bn invested.

It's unclear if this represents an increase on recent years. Indeed, recent comments from the IOCs on whose shoulders such investment rests, suggest an investment fall is more likely than a rise (MEES, 12 July). In terms of gas, the only significant project in the pipeline is Chevron's 2.8tcf (gas in place) Nargis, where a development plan has yet to be filed as the US major looks to obtain improved fiscal terms (MEES, 7 June).

RECORD DEMAND

Speaking on 17 July, PM Madbouly said peak demand had hit a new record of 37.5GW, some 8% above the previous record of 34.7GW hit last year. With peak demand typically hit in August, this may yet be topped.

With gas fueling around 90% of power generation in Egypt, all eyes will be on whether Mr Badawi is able to secure enough volumes in the coming weeks to meet his and the PM's pledge. Latest Jodi figures for May provide an indication of the uphill battle, with gas consumption of 6.130bn cfd (and 3.439bn

cfd of that used in power), outstripping output by 1.134bn cfd, the highest domestic deficit since August 2016.

To deal with this growing deficit, Egypt has so far imported 640,000 tons of LNG in 2024, the first four cargoes via Jordan's Aqaba terminal. With six cargoes totaling 434,000 tons set to unload at the Hoegh Gallant this month, this will be Egypt's highest import figure since July 2018.

On top of that, Egypt imported a bumper 998mn cfd of Israeli gas over the first six months of the year, up 29% year-on-year despite June flows dipping to 860mn cfd, the lowest since November last year. Q1 flows averaged a record quarterly high of 1.02bn cfd before dipping to 976mn cfd for Q2.

However, the slump in Israel deliveries following Hamas' 7 October attack indicated just how dependent Egypt has become on Israeli supplies. As such, Egypt's decision to look for a second FSRU could also be linked to fears over a broader conflict opening up in Israel's north with Hezbollah. MEES understands that this could see Israel shut in production at all three of its gas fields (see p6).

The halt of all flows from Israel would be catastrophic for Egypt considering the chaos caused by the recent temporary shutdowns of both Tamar and Leviathan (MEES, 28 June). MEES learns that these shutdowns and the resultant fluctuation in gas flows from Israel have strained relations between the two countries.

The dip in June is partly attributed to higher domestic demand in Israel as well as the planned outage at Tamar that began on 27 May and ended on 5 June, with displaced domestic volumes replaced by Leviathan which was forced to curtail exports to Egypt (MEES, 7 June). ♦♦

Algeria & Kuwait Set New Peak Load Records

Amid scorching temperatures across the Mena region, Algeria and Kuwait this week joined Egypt (see p10) in setting new peak load records.

Algeria set a new power demand record of 19.019GW on 17 July, according to state power firm Sonelgaz, the third record in four days after 18.756GW on 15 July and 18.732GW on 14 July. The previous high was 18.697GW set on 23 July 2023.

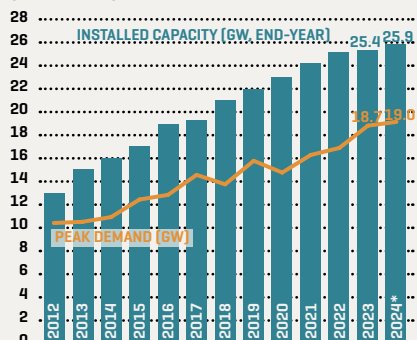
Sonelgaz says that “thanks to production capacity of 25GW” it has been able to not only meet record local demand “without the slightest problem” but to “maintain the level of exports to Tunisia.”

Speaking on 14 July after the first record, Sonelgaz official Khalil Hedna said Sonelgaz had “passed the test” thanks to recent additions to the country’s transmission network, as well as the start-up of an initial 450MW of open-cycle capacity at the under-construction 1.45GW Mostaganem CCGT plant (MEES, 12 July). MEES calculates that, thanks to this addition, generation capacity is actually somewhat higher than the figure given by Sonelgaz, at around 25.9GW (see chart 1).

Almost all of Algeria’s power is generated from burning gas, with renewables chipping in just 1% (0.87TWh, of which 0.72TWh solar PV) of total output of 85.9TWh for 2022. With renewables capacity static at 590MW (of which 426MW solar PV) for 2023 according to freshly-released Irena data, amid modest gas capacity additions, the renewables share has if anything fallen since.

Sonelgaz’ solar ambitions rest on 3GW of capacity awarded in March (MEES, 22 March). And at least some of this appears to be moving forward, with China’s Jinko Solar announcing on 16 July that it has been awarded a contract to supply Algeria with 150MW of panels: 100MW

1: ALGERIA’S INSTALLED CAPACITY HAS MANAGED TO STAY AHEAD OF PEAK DEMAND



*PEAK DEMAND AS OF 17 JULY, CAPACITY IS MEES ESTIMATE. SOURCE: ALGERIA ENERGY MINISTRY, SONELGAZ, APS, MEES.

for the Ain El Beida project in Ourgla and 50MW for Beni Ounif in Bechar.

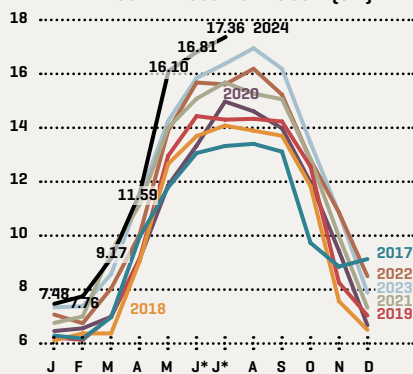
KUWAIT STRETCHED

Kuwait’s Ministry of Electricity and Water (MEW), meanwhile, said on 13 July that the emirate’s power demand had reached a new all-time high of 17.36GW, surpassing the previous 16.94GW recorded in August 2023. Kuwait has an installed capacity of 20.18GW, and while available capacity is usually lower and fluctuates seasonally, no sizeable generation additions have been brought online in recent years.

Kuwait’s peak load has broken monthly records on several occasions this year (see chart 2), and this has only been exacerbated this summer as demand for cooling has surged amidst scorching heat. In mid-June, the electricity ministry was forced into rolling power cuts (MEES, 21 June), and the network will remain stretched until at least September when temperatures typically ease.

The new record is within touching distance of the ministry’s forecast

2: KUWAIT’S POWER DEMAND HIT A NEW RECORD 17.36GW ON 13 JULY (GW)



*JUNE & JULY FIGURES MAY BE TOPPED. SOURCE: MEW, ANBAA, MEES.

summer 2024 peak of 17.7GW, and its mammoth challenge remains to fast-track a backlog of power projects that have been delayed by years of bureaucracy and political squabbling. Kuwait has even received imports above its contracted 500MW through the GC-CIA interconnector (MEES, 28 June).

Local daily al-Anbaa reported on 18 July that the government is now keen on removing hurdles for private-sector Independent Power Producers (IPPs) to build much-needed new capacity. Ongoing projects are limited, though a 900MW expansion at the Sabiya complex has been awarded with MEW hopeful it can be brought online next year (MEES, 5 April). The ministry also hopes to award 1.1GW of solar projects this year (MEES, 3 May), though longer-term plans look highly ambitious (see box). Meeting representatives from China’s State Power Investment Corporation (SPIC) on 16 July, Electricity Minister Mahmoud Bushahri discussed renewable energy projects and “quickly deployable solutions to boost electricity production for summer 2025,” Anbaa reports. ♦♦

KUWAIT: MASSIVE RENEWABLES & HYDROGEN AMBITIONS

Kuwait has next to no renewables capacity, just 114MW as of end-2023 according to stats from the International Renewable Energy Agency. On-grid capacity is merely 70MW and concentrated at the Shagaya plant (50MW CSP, 10MW solar, 10MW Wind). But Kuwait is thinking big. US engineering contractor KBR announced on 18 July that “it has been awarded an advisory consulting contract by Kuwait Oil Company for the development of a country-wide masterplan for the production of 17GW of renewables and 25GW of green hydrogen by 2050.”

“Under the terms of the contract, KBR

will provide advisory consulting services to develop a phased strategy for the deployment of significant wind and solar power, combined with power storage capability. The renewable power capability will be linked to the production of green hydrogen for internal industrial use, as well as for export purposes. KBR says its 18-month contract covers commercial/technical studies and training Kuwaiti nationals. KPC has a 2050 Energy Transition Strategy, and CEO Sheikh Nawaf Al Sabah says current solar work will focus on “reducing the impact of our operations on the national grid.”

Though Kuwait, like other Gulf locations, is blessed with plentiful sun, it is not a large country – its land area of 17,800 km² is just 0.8% that of Saudi Arabia, whose own highly-ambitious renewables target is for 100-130GW by 2030 (MEES, 28 June).

Presuming that the green hydrogen figure relates to related renewables capacity, and that the total of 42GW would be met from solar PV, this would require a land area of around 1,000 km² or 6% of Kuwait. The emirate has an if-anything-more-ambitious target of hitting 22GW renewables capacity by 2030 (MEES, 3 May).





Qatar Set To Double Solar Capacity To 1.7GW

Qatar has completed the panel installation totaling 875MW at its two major industrial hubs of Ras Laffan and Mesaieed, doubling national capacity to 1.675GW.

Panel installation at both of Qatar's ongoing solar projects, at the industrial hubs of Ras Laffan and Mesaieed is now complete, latest satellite imagery indicates. When fully connected to the grid the plants will add 875MW to Qatar's installed capacity, more than doubling the total to 1.675GW.

Work has been rapid at both sites. Site clearance began in March of last year, with panel installation beginning in October.

State energy firm QatarEnergy is developing both plants which it plans to use to lower emissions from its operations. In the north, the 458MW Ras Laffan solar plant sits alongside the company's major gas and LNG facilities including those planned under its massive 142mn t/y North Field expansion project (MEES, 1 March).

QatarEnergy is planning to market its future and expanded LNG output as the lowest carbon option globally. To achieve this it is relying on plans for 3.2mn t/y of carbon capture and storage system alongside integrated solar capacity (MEES, 6 October 2023).

Further south, the 417MW Mesaieed solar plant will contribute power to the industrial hub which is home to key petrochemical and metals facilities. In its 2022 annual report QatarEnergy earmarked 35MW from the nascent solar plant to partly power a planned 1.2mn t/y blue ammonia facility expected in the first quarter of 2026 (MEES, 2 September 2022).

QatarEnergy awarded the contracts for both plants back in August 2022 with an expected completion date of November 2024 (MEES, 26 August 2022). Only a matter of weeks earlier the country had energized its first utility-scale solar facility, the 800MW Al Kharsaah plant (MEES, 29 July 2022).

A NATIONAL STRATEGY...

While the emirate has lagged the nearby UAE in renewable energy development, in April state offtaker Kahramaa released the country's first national renewable strategy (MEES, 3 May). Under the national plan Qatar is eyeing 4GW of renewable energy capacity

QATAR'S KEY POWER INFRASTRUCTURE

■ POWER LINES ■ POWER PLANT ☀ SOLAR PV ✱ PLANNED 🏭 REFINERY 🚢 LNG PLANT



by 2030. As such, even with the near-term start up of the two new projects, Qatar will need to make up the more than 2GW difference in a relatively short space of time. As yet no new projects have been announced to bridge this gap.

Currently solar power accounts for only around 6% of Qatar's 12.7GW total generation capacity. Once online the new plants will mean this figure will jump to 13%. Ultimately the country plans for renewables to have an 18% "share in the power mix" by 2030, according to the national strategy.

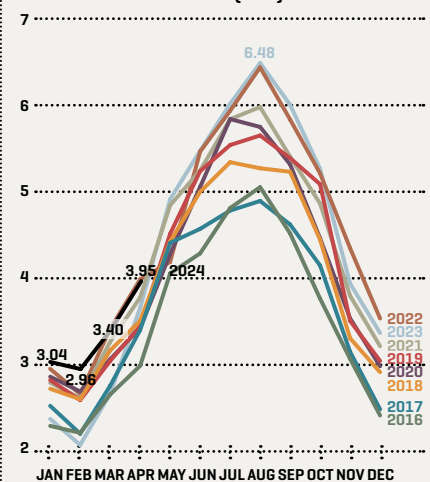
To do this Kahramaa estimates that the country needs around \$7.6bn in capital investments by the end of the decade in both the plants and their associated grid infrastructure. But plans to scale up renewable energy face growing power demand across Qatar.

...FACES HIGH DEMAND

According to Kahramaa, the country's power demand will reach just shy of 80TWh by 2030, a more than 50% increase from 52TWh last year, according to the national renewable strategy.

Peak generation has reached record highs every year at least since 2016, reaching an all-time high of 6.48TWh last year (see chart). While official statistics

QATAR POWER GENERATION IS ON PACE TO TOP 2023'S RECORD THIS YEAR (TWh)



*2023 AND 2024 DATA FROM PSA MONTHLY REPORTS.
SOURCE: KAHRAAMA, PSA, MEES.

for this summer have not been released, it is likely it will be another record year.

Sweltering temperatures across the Gulf have already caused power demand to surge in neighboring countries like Kuwait (see p11). In anticipation of this Kuwait's electricity ministry secured approvals to import 200MW of electricity from Qatar during the summer months via the GCC interconnection authority (MEES, 17 May). ♦♦

Egypt's Balance Of Payments Hit By Suez Revenue Collapse

Egypt's provisional 2023-24 finances ostensibly show a marked improvement. But this is in large part thanks to \$35bn of UAE cash. With Suez Canal earnings collapsing and the IMF delaying funds, Egypt is not out of the woods.

Provisional figures for Egypt's 2023-24 financial year (to 30 June) given by new finance minister Ahmed Kouchouk on 17 July were substantially better than the provisional stats announced in April alongside the country's draft 2024-25 budget (MEES, 10 May). The influx of \$35bn from the UAE under the Ras el-Hekma investment megadeal (MEES, 17 May) has made the key difference, though only a small portion of this went on budget support – the bulk went to bolster Egypt's forex reserves which ended 2023-24 at a record \$46.4bn (see chart 1).

Mr Kouchouk says Egypt posted a E£505bn deficit for 2023-24 versus the earlier E£555bn forecast and E£610bn for 2022-23. In dollar terms, and using an average annual exchange rate (a big assumption given March's collapse in the value of the Egyptian pound and that the bulk of the UAE cash was received after this), Egypt's deficit of \$14.0bn was little more than half the \$23.6bn 2022-23 figure for the lowest in more than a decade.

Egypt actually recorded a record primary surplus of E£857bn for 2023-24 but this was weighed down by record debt interest payments which likely accounted for around half of total 2023-24 spending of E£3,002bn (\$83bn). The latter is up 37% in local currency terms but down 2% (\$1.8bn) in dollar terms. Revenue, at E£2,491 bn (\$68.8bn), was up 59% in local currency terms and 13% in dollar terms.

SUEZ SLUMP

And whilst the UAE cash inflow is a

one off, the collapse in revenues from the Suez Canal shows no sign of letting up.

Official Suez Canal figures show revenues falling by 24% from 2022-23's record \$9.45bn to \$7.22bn for 2023-24. Annual net tonnage was down 30% from last year's record 1.53bn at 1.07 billion, whilst the total number of vessels was down 22% at just over 20,000 versus 2022-23's 25,911 according to figures published in Egyptian daily Al Mal.

But, whilst the figures for the full 2023-24 financial year make grim reading, the full scale of the collapse in Suez Canal traffic and revenue can be seen by comparing figures for the first half of 2024 to the same period in previous years seeing that it was only at the start of 2024 that Yemen's Houthis stepped up their attacks on Red Sea traffic (see p14 and MEES, 14 June).

Revenues of \$2.1bn for 1H 2024 are down 59% year-on-year for the lowest nominal first half figure since 2009, whilst net tonnage of 276mn for 1H 2024 was down 64% for the lowest first-half figure since 2003 (see chart 2).

Egypt's other key foreign exchange earner, tourism is faring better, though official forecasts here look optimistic (MEES, 5 July).

IMF CASH ON HOLD

The announcement of the landmark UAE-Egypt investment deal came in February, just as the IMF was finalizing its key \$8bn program with Cairo (MEES, 8 March), which in turn unlocked billions more in much-needed conditional funding from other lenders and investors (MEES, 22 March).

The IMF at the time flagged up the risk that the wave of UAE cash might lessen Egypt's incentives to reform its economy in line with the terms of the IMF deal. In its post-agreement report, the IMF flagged up continued energy subsidies as the key IMF condition that had not been met (MEES, 3 May). And last week the IMF stalled on

releasing the third, \$820mn, tranche of the loan, with the decision put back from 10 to 28 July. Egyptian economists immediately speculated that this was due to a lack of progress on subsidy reform.

Speaking on 12 July, IMF spokesperson Julie Kozack pointed to the considerable "downside risks" faced by the Egyptian economy, in particular the collapse in Suez Canal revenues which "deprives Egypt of a very important source of foreign exchange and also fiscal revenue."

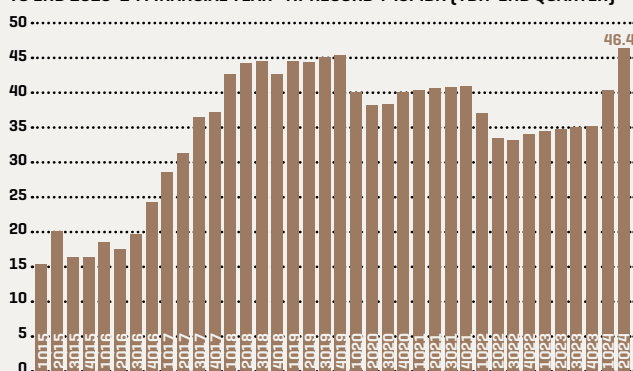
Together with "domestic structural challenges," these "do require, of course, that Egypt stays the course on economic policies that will ultimately best serve the people of Egypt." She adds that Egypt-IMF talks are ongoing with "the postponement of the [IMF] Board meeting [to finalize the \$820mn disbursement]... related to the need to finalize some details."

Egypt has flagged up plans to cut – though not end – subsidies, though with price hikes delayed they may end up doing little more than outpacing inflation (MEES, 28 June), whilst the country's new swathe of ministers have not flagged up cuts to subsidy spending as a key priority (MEES, 5 July).

For 2024-25, the country's budget envisages fuel subsidy spending of E£155bn, up from the latest 2023-24 forecast of E£125bn in nominal terms but a cut from \$3.5bn to \$3.2bn in dollar terms.

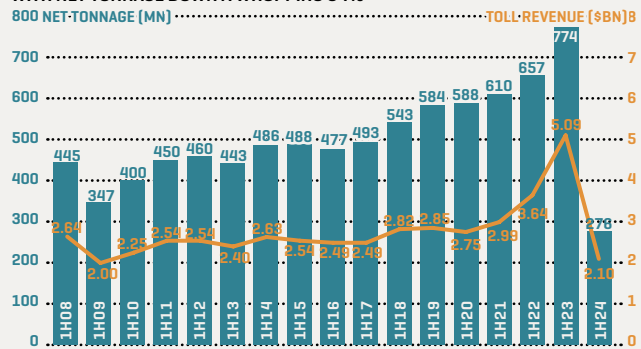
Indeed de-facto spending on subsidies is set to rise over the coming months with the country budgeting to spend over \$1bn on imports of LNG and liquid fuels in a bid to keep the lights on (MEES, 21 June). With domestic power prices well below the cost of this internationally-priced feedstock this implies a hefty subsidy. The surge in energy imports is necessitated by the combination of higher summer energy demand and declining domestic gas and oil output (see p10), with the threat to piped gas imports from Israel presenting a major additional risk (see p6). ♦♦

1: EGYPT FOREIGN RESERVES* GAIN A FURTHER \$258MN IN JUNE TO END 2023-24 FINANCIAL YEAR^ AT RECORD \$46.4BN (\$8N-ENT QUARTER)



*NET INTERNATIONAL RESERVES. ^FINANCIAL YEARS TO 30 JUNE. SOURCE: CBE, MEES.

2: SUEZ CANAL REVENUES SLUMP 59% TO 16-YEAR LOW* FOR 1H 2024 WITH NET TONNAGE DOWN A WHOPPING 64%



*IN NOMINAL TERMS - IN REAL TERMS THE \$2.1BN FIGURE FOR 1H24 IS SUBSTANTIALLY LOWER THAN THE PREVIOUS LOW OF \$2.0BN FOR 1H 2009. SOURCE: SUEZ CANAL AUTHORITY, CAPMAS, CBE, MEDIA REPORTS, MEES.



HOUTHIS STRIKE TEL AVIV

In an escalation of tensions with Israel (see p6), Yemen's Houthis managed early on 19 July to strike Tel Aviv with a drone killing one and injuring ten. Houthi media claim the new "Yaffa" drone – named for the Arabic name for Tel Aviv – can bypass Israel's Iron Dome defenses, but according to Israeli media human error let it pass after detection.

This follows intensifying attacks in the Red Sea, including a 16 July drone boat strike on the Chios Lion tanker, causing minor damage and a possible oil leak. So far the Houthis have sunk two ships and killed four sailors in its attacks (MEES, 21 June).

The group has also recently ramped up their threats, most notably those directed at Saudi Arabia (MEES, 29 March). On 18 July, Houthi leader Abdulmalik al-Houthi said: "We advise and warn the Saudis of serious consequences and loss in every sense of the word if they continue on the path of oppression and aggression."

Houthi military media have also specifically threatened Saudi infrastructure including oil export terminals Ras Tanura and Jizan, an allusion to previous attacks on Saudi energy infrastructure (MEES, 25 March 2022).

LIBYA: NEW OUTPUT RECORD

Libya's NOC says that the country produced 1.274mn b/d of crude on 17 July, the highest daily figure since the state firm began publishing such data (on an irregular basis) in July 2022. In terms of average monthly output, MEES assessed the June figure at an 11-year high 1.22mn b/d (MEES, 5 July), whilst NOC last week claimed that output from the country's key Waha concessions had hit 322,000 b/d up from 2023 average of 281,000 b/d (MEES, 12 July).

Another key recent increment has come from the North Hamada field in the country's

northwest. Here NOC announced on 11 July that seven weeks after crude from the field began filling a new pipeline linking the field to the key El Feel-Mellitah trunk pipeline (MEES, 14 June), first crude from the field had now reached the port of Mellitah. From 4,500 b/d for May, the field's output was set to hit 8,000 b/d in "mid-July" and 10,000 b/d in August with the start-up of five additional wells, NOC says.

ARAMCO BOND RAISES \$6BN

Saudi Aramco on 18 July said it had raised \$6bn in a bond issuance, with \$2bn each from three tranches. It will pay 5.25%/year on the 10-year portion, 5.75%/year on the 2-year notes, and 5.875/year on the 30-year portion. The offering was more than six times oversubscribed, based on the initial targeted size of \$5bn, Aramco says.

SAIPEM SAUDI OFFSHORE AWARDS

Italy's Saipem on 15 July announced that it had been awarded two offshore contracts totaling "approximately \$500mn" from Saudi Aramco. The first is for Engineering, Procurement, Construction and Installation (EPCI) of a 50km, 42" crude trunkline for the Abu Safah field offshore the Saudi Gulf oil terminal of Ras Tanura. Whilst wholly in Saudi waters, Abu Safah output of around 300,000 b/d is split 50:50 with nearby Bahrain (MEES, 29 September, 2023).

The second project is "related to... the production maintenance programs of the Berri and Manifa Fields." Aramco has axed its overall plans to hike crude output capacity from 12mn b/d to 13mn b/d, leading to a slump in offshore drilling (MEES, 12 July) with Saipem among firms impacted (MEES, 10 May). It is, however, pressing ahead with plans to add 250,000 b/d capacity at Berri though a 300,000 b/d increment at Manifa has been shelved (MEES, 2 February).

OMAN SUFFERS ISIS ATTACK

On 15 July three Omani men fired on civilians outside a Shia mosque in the Wadi al-Kabir district of the capital Muscat in an attack claimed by Islamic State. According to Oman's police force, the gunmen killed six people and injured at least another 30 before the police shot them.

Sectarian terrorist attacks are rare in the sultanate. Oman is dominated by the Ibadi sect of Islam which is generally seen as tolerant and has tried to defend against sectarianism at home while employing neutrality in its foreign policy. The recent attack could shake these two principals and Oman's reputation as an oasis of stability.

SHELL OMAN: BLUE H2 PRE-FEED

Shell Oman on 16 July awarded pre-FEED contracts to UK engineering firm Wood for its planned Blue Horizons blue hydrogen facility at Duqm

Collaborating with Shell via a joint study agreement is Oman's state energy firm OQ, gas network company OQGN, and Oman's largest hydrocarbon producer PDO. This last partner will provide the site for the CO₂ store in its massive Block 6 concession "very close" to Duqm (MEES, 22 December 2023). The Wood pre-Feed also encompasses associated CO₂ pipelines and injection facilities.

Shell Oman head Walid Hadi says the project "aims to supply low-carbon blue hydrogen and ammonia to local and international markets."

Shell produces 500mn cfd from Oman's Block 10 (MEES, 22 December 2023). It also has and 34% of PDO, which is Oman's dominant oil producer, and 35% of the 150,000 t/y Green Energy Oman green hydrogen project in Duqm (MEES, 3 May).

CHINA: WEAK DEMAND, BUMPER OUTPUT

Latest official Chinese data show refinery runs falling to 14.24mn b/d for June, the lowest figure this year and 640,000 b/d down on the year-ago figure. Average runs for the first half of 2024, at 14.49mn b/d, are down 1% year-on-year. With 1H imports also down year-on-year (down 3% at 11.09mn b/d), the weak data from the world's number one importer – long the key driver of global demand – is 'Exhibit A' in the IEA's increasingly bearish global oil demand outlook (MEES, 12 July).

Crude production was 3.98mn b/d for June, up 100,000 b/d year-on-year and the second highest figure ever behind 4.41mn b/d for June 2015. Average 1H 2024 output of 4.31mn b/d is up 1.3% year-on-year to top the previous record 1H figure set in 2015 (4.27mn b/d) and put 2024 on pace to top that year's annual record of 4.28mn b/d. Record production means that imports fallen by more than demand (MEES, 21 June).

It's a similar story for gas, where record 1H output has capped the demand for incremental LNG imports, though unlike those of crude these are still up substantially year-on-year.

TAIWAN CRUDE IMPORTS ('000 B/D): US CHALLENGES SAUDI FOR TOP SPOT

	1H24	vs 1H23	%	1H23	2Q24	1Q24	4Q23	Apr24	May24	Jun24	2021	2022	2023
Middle East	560.9	+7.5	+1.3	553.4	591.0	530.7	540.0	468.3	641.7	663.1	578.8	609.8	575.0
% of total	68.6	-0.5		69.1	67.7	69.7	73.1	64.2	77.3	62.5	74.9	73.3	71.9
Saudi Arabia	272.1	+11.6	+4.5	260.4	269.1	275.0	251.7	184.5	341.1	281.8	252.2	275.6	259.2
% of total	33.3	+0.8		32.5	30.8	36.1	34.1	25.3	41.1	26.6	32.6	33.1	32.4
Kuwait	109.3	-43.4	-28.4	152.7	131.5	87.1	118.8	68.2	127.4	198.9	163.8	169.6	141.2
UAE	70.6	+0.7	+1.0	69.9	82.2	59.1	52.2	118.0	79.1	49.6	80.1	76.1	66.0
Oman	63.4	+14.8	+30.5	48.6	62.9	63.9	51.5	64.4	62.3	62.0	40.6	55.5	64.2
Qatar	29.5	+23.7	+411.9	5.8	34.7	24.2	65.7	33.3	0.0	70.8	6.9	8.6	19.6
Iraq	16.0	0.0	+0.2	16.0	10.6	21.4	0.0	0.0	31.8	0.0	35.3	13.5	19.1
Other	256.6	+20.4	+8.6	236.2	282.3	230.9	198.9	261.4	188.3	397.1	194.3	222.0	224.2
US	248.8	+40.2	+19.3	208.5	282.3	215.3	191.1	261.4	188.3	397.1	144.9	173.1	204.9
Chad	1.6	-8.2	-84.0	9.8	0.0	3.1	3.7	0.0	0.0	0.0	17.1	12.2	9.7
Norway	6.3	+6.3	-	0.0	0.0	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	817.5	+16.5	+2.1	800.9	873.3	761.6	738.9	729.7	830.0	1,060.1	773.0	831.8	799.2
of which Opec	468.0	-40.5	-8.0	508.5	493.4	442.6	422.8	370.7	579.4	530.2	554.0	563.6	553.1
% of total	63.7	-0.2		63.9	56.5	58.1	57.2	50.8	69.8	50.0	71.7	67.7	69.2

SAUDI ARABIA 5M24 KEY OIL DATA ('000 B/D): CRUDE BURN DOWN YEAR-ON-YEAR



SELECTED DATA

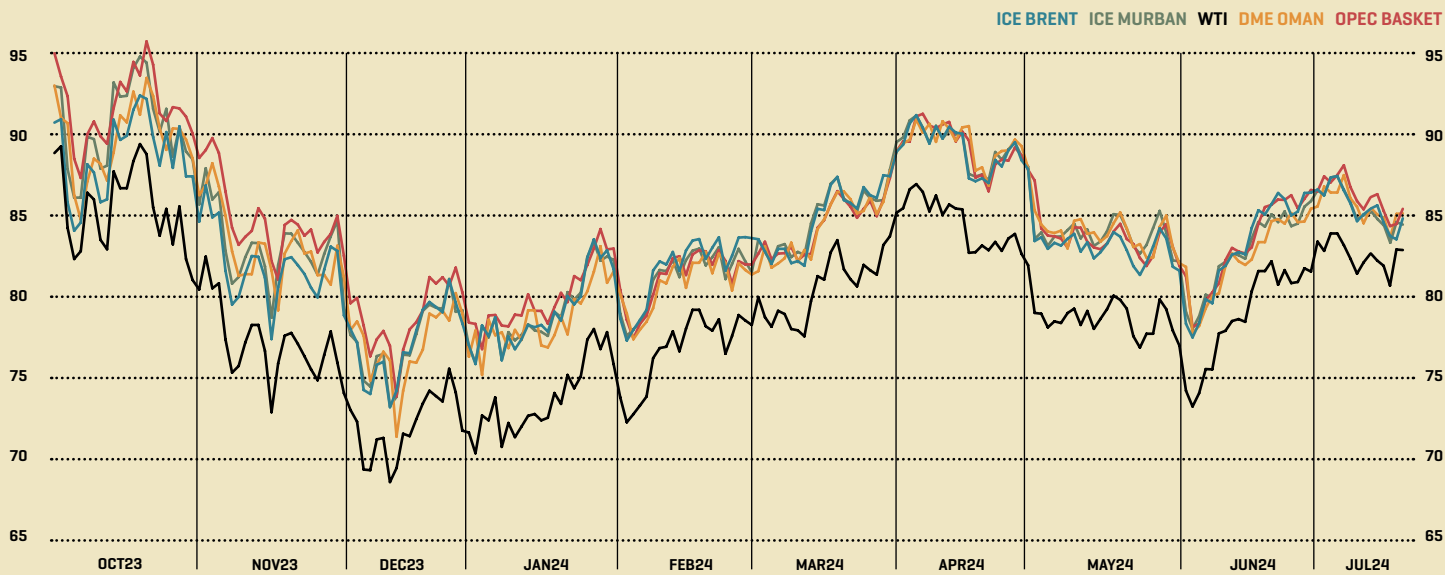
	5M24	vs 5M23	%	5M23	May24	vs May23	%	vs Apr24	%	Apr24	Mar24	2021	2022	2023	3Q23	4Q23	1Q24
Crude Output	8,984	-1374	-13.3	10,357	8,993	-966	-9.7	+7	+0.1	8,986	8,973	9,117	10,589	9,613	8,969	8,901	8,980
Crude Stocks (mn bl)	135.9	-12.3	-8.3	148.2	135.9	-12.3	-8.3	-10.0	-6.9	145.9	139.3	134.7	148.6	149.2	146.2	149.2	139.3
<i>crude stock change (mn bl)</i>	-13.3	-12.9	+3,835.9	-0.3	-10.0	-8.8	+765.3	-16.7	-250.1	+6.7	-5.8	-5.4	+13.9	+0.6	-3.4	+3.0	-9.9
<i>('000 b/d)</i>	-87.3	-85.0	+3,810.0	-2.2	-322.7	-285.4	+765.3	-544.8	-245.3	+222.1	-187.3	-14.7	+38.1	+1.7	-37.5	+32.2	-110.3
Crude Supply to Market	9,208	-1,147	-11.1	10,355	9,462	-535	-5.3	+549	+6.2	8,913	9,280	9,132	10,549	9,651	9,076	8,965	9,221
Crude Exports	6,223	-1,153	-15.6	7,376	6,118	-810	-11.7	+150	+2.5	5,968	6,413	6,222	7,364	6,665	5,783	6,314	6,342
<i>% of crude output</i>	69.3	-2.0		71.2	68.0	-1.5		+1.6		66.4	71.5	68.2	69.5	69.3	64.5	70.9	70.6
Direct Burn Crude	355	-18	-4.8	372	398	-80	-16.7	-2	-0.5	400	307	437	486	472	641	445	325
<i>% of crude output</i>	3.9	+0.4		3.6	4.4	-0.4		-0.0		4.5	3.4	4.8	4.6	4.9	7.2	5.0	3.6
Total Oil Burn**	924	-35	-3.6	958	1,013	-142	-12.3	+1	+0.1	1,012	826	1,004	1,093	1,104	1,347	1,040	864
<i>% of crude output</i>	10.3	+1.0		9.3	11.3	-0.3		+0.0		11.3	9.2	11.0	10.3	11.5	15.0	11.7	9.6
Refinery Crude Intake	2,630	+24	+0.9	2,606	2,946	+356	+13.7	+401	+15.8	2,545	2,560	2,474	2,701	2,514	2,652	2,207	2,553
<i>% of crude production</i>	29.3	+4.1		25.2	32.8	+6.8		+4.4		28.3	28.5	27.1	25.5	26.2	29.6	24.8	28.4
<i>Run rate (% of capacity)</i>	80.1	+0.7		79.4	89.7	+10.8		+12.2		77.5	78.0	75.3	82.2	76.6	80.7	67.2	77.8
Refinery Output	2,657	+46	+1.8	2,611	3,026	+418	+16.0	+431	+16.6	2,595	2,560	2,547	2,769	2,529	2,686	2,213	2,554
LPG	29.8	+4	+15.5	25.8	34	+8	+30.8	+0	+0.0	34	42	39	46	25	31	16	27
Naphtha	25	-13	-34.9	38.4	40	+31	+344.4	+15	+60.0	25	34	174	88	25	17	13	20
Gasoline	626.4	+9	+1.5	617.2	637	-17	-2.6	-92	-12.6	729	629	544	631	615	685	534	589
Jet-Kero	200.6	+49	+32.1	151.8	180	+28	+18.4	-16	-8.2	196	216	126	153	158	174	144	209
Diesel/Gasoil	1,109	-23	-2.0	1,132	1,258	+116	+10.2	+110	+9.6	1,148	1,030	1,114	1,209	1,093	1,140	987	1,046
Fuel Oil	437.2	-9	-2.1	446.4	452	+7	+1.6	+60	+15.3	392	433	422	482	440	457	420	447
other products	243	+43	+21.8	199	425	+245	+136.1	+354	+498.6	71	244	128	161	175	182	99	239
Oil Product stocks (mn bl)	95.7	+8.7	+10.0	87.0	95.7	+8.7	+10.0	+10.5	+12.4	85.2	91.1	98.8	86.9	80.3	89.1	80.3	91.1
Total Oil Stocks (mn bl)	231.6	-3.6	-1.5	235.3	231.6	-3.6	-1.5	+0.5	+0.2	231.1	230.3	233.4	235.5	229.5	235.4	229.5	230.3
<i>oil stock change (mn bl)</i>	+2.2	+2.4	-1,047.4	-0.2	+0.5	+0.8	-299.2	-0.2	-32.2	+0.8	+0.1	-1.2	+2.0	-6.0	+0.3	-5.9	+0.9
<i>('000 b/d)</i>	+14.2	+15.7	-1,041.1	-1.5	+16.7	+25.1	-299.2	-8.8	-34.4	+25.5	+4.1	-3.3	+5.6	-16.5	+3.6	-64.4	+9.8
Refined Products Consumption	1,878	-22	-1.1	1,899	1,957	-41	-2.1	+77	+4.1	1,880	1,804	1,729	1,886	1,976	2,070	1,972	1,850
LPG*	71.6	+16	+27.9	56	71	+18	+34.0	-3	-4.1	74	76	47	50	55	51	57	71
Gasoline	503.4	-2	-0.5	505.8	510	-12	-2.3	+17	+3.4	493	493	480	500	509	502	522	505
Jet-Kero	92.4	-3	-3.5	95.8	73	+24	+49.0	-17	-18.9	90	103	47	72	96	102	86	100
Diesel/Gasoil	580.8	-4	-0.8	585.2	625	-2	-0.3	+84	+15.5	541	570	503	574	609	630	629	579
Fuel Oil	569	-17	-2.9	585.8	615	-62	-9.2	+3	+0.5	612	519	567	608	632	706	595	539
Refined Products Exports*	1,302	-126	-8.8	1,428	1,221	-152	-11.1	-185	-13.2	1,406	1,252	1,343	1,470	1,274	1,260	1,007	1,295
<i>% oil exports</i>	17.3	+1.1		16.2	16.6	+0.1		-2.4		19.1	16.3	17.8	16.6	16.0	17.9	13.8	17.0
Naphtha	88.2	-41	-31.7	129.2	51	-60	-54.1	-32	-38.6	83	114	169	145	109	95	101	102
Gasoline	258.2	-7	-2.8	265.6	261	-25	-8.7	-67	-20.4	328	237	182	271	257	300	193	234
Jet-Kero	111.8	+27	+32.2	84.6	47	-67	-58.8	-59	-55.7	106	173	77	97	89	106	91	135
Diesel/Gasoil	590.2	-70	-10.6	660.2	610	-17	-2.7	-45	-6.9	655	498	682	671	566	511	408	562
Fuel Oil	161.4	-48	-22.9	209.4	166	+28	+20.3	+29	+21.2	137	126	156	204	183	166	162	168
Crude & Products Exports*	7,525	-1,279	-14.5	8,804	7,339	-962	-11.6	-35	-0.5	7,374	7,665	7,565	8,833	7,939	7,043	7,321	7,637
<i>% of crude output</i>	83.8	-1.2		85.0	81.6	-1.7		-0.5		82.1	85.4	83.0	83.4	82.6	78.5	82.2	85.0
Oil Products Imports	312	-104	-24.9	415.6	255	-166	-39.4	-6	-2.3	261	274	361	360	433	438	390	348
Gasoline	87.8	+4	+4.5	84	42	+4	+10.5	-12	-22.2	54	144	83	92	87	64	113	114
Diesel/Gasoil	46.2	-62	-57.2	108	0	-141	-100.0	+0	-	0	17	91	64	91	72	52	77
Fuel Oil	164.4	-44	-21.0	208	203	+1	+0.5	+29	+16.7	174	105	177	191	241	279	218	148
Total Net Crude & Products Exports*	7,076	-1,312	-15.6	8,389	6,938	-942	-12.0	-26	-0.4	6,964	7,271	7,204	8,473	7,464	6,536	6,834	7,160
NET PRODUCTS EXPORTS*	990	-22	-2.2	1,013	966	+14	+1.5	-179	-15.6	1,145	978	982	1,110	841	822	617	947
Naphtha	84	-35	-29.4	119	51	-30	-37.0	-11	-17.7	62	114	163	137	97	72	94	102
Gasoline	170.4	-11	-6.2	181.6	219	-29	-11.7	-55	-20.1	274	93	99	179	171	236	80	120
Jet-Kero	102.4	+23	+29.3	79.2	37	-67	-64.4	-57	-60.6	94	165	73	92	86	106	91	127
Diesel	544	-8	-1.5	552.2	610	+124	+25.5	-45	-6.9	655	481	592	607	474	440	356	485
Fuel Oil	-3	-4	-314.3	1.4	-37	+27	-42.2	+0	+0.0	-37	21	-21	13	-58	-113	-56	20
<i>Net Products %</i>	13.1	-0.3		13.4	13.9	+1.8		-2.5		16.4	13.5	13.6	13.1	11.3	12.6	9.0	13.2

* REFINED PRODUCTS ONLY. EXCLUDES FIELD LPG (AROUND 850,000 B/D OUTPUT), OTHER NGLS AND CONDENSATE. ** PRESUMES ALL DOMESTICALLY-CONSUMED FUEL OIL IS BURNT IN POWER PLANTS. SEE ANALYSIS P16. SOURCE: JODI, MEES.

BENCHMARK CRUDE PRICES (\$/B)

	18Jul	8-12Jul	1-5Jul	Jun24	May24	Apr24	Q2 2024	Q1 2024	Q4 2023	2024 (18July)	2023	2022	2021
WTI	82.82	82.13	83.42	78.84	78.58	84.39	73.71	76.25	78.50	79.16	77.58	94.37	68.09
ICE Brent	85.11	85.18	86.83	83.06	83.00	89.00	77.96	82.12	82.85	83.64	82.18	99.02	70.97
ICE Murban	84.45	85.12	86.85	82.78	83.76	89.18	78.14	81.83	83.94	83.69	82.80	98.84	72.92
DME Oman	84.83	85.42	86.54	82.45	83.86	89.30	77.50	80.65	83.58	83.47	82.02	94.42	69.00
OPEC Basket	85.43	86.09	87.32	83.24	83.59	89.16	78.19	80.75	85.43	83.85	82.90	100.01	69.82
JCC	na	na	na	na	88.87	85.73	na	84.09	92.26	na	86.56	102.70	69.11

AVERAGE SETTLEMENT PRICES FOR PERIOD IN QUESTION.

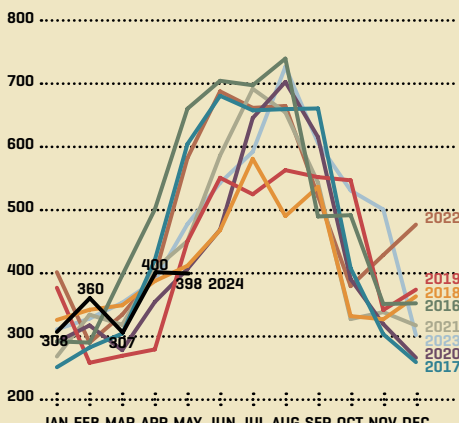

SAUDI CRUDE BURN: SIGNIFICANT PROGRESS AT LAST

*Saudi crude burn of 398,000 b/d for May was down fractionally on April, a counter-seasonal fall that resulted in the lowest May figure in over 15 years (comparative Jodi data goes back to 2009). Having been roughly level with a year earlier until April, year-to-date crude burn is now down 4.8% on the 5M 2023 figure at 355,000 b/d [see chart 1 & p15 for full data].

*This comes amid massive Saudi investment to boost output of gas [MEES, 21 May] and renewables [MEES, 28 June] with the goal of ending the burning of oil – crude, fuel oil and diesel – in power plants by 2030.

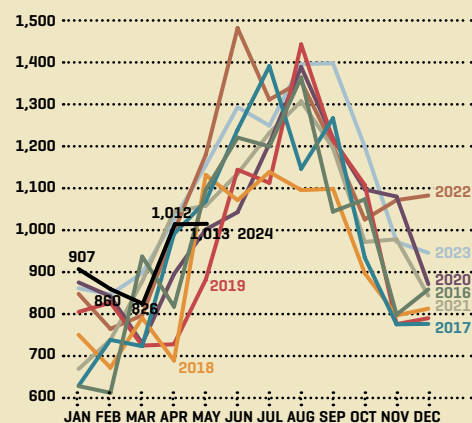
*Saudi fuel oil consumption, the bulk of which is burned in power plants, was 615,000 b/d for May, up fractionally on April but down 9% year-on-year. Total oil burn (assuming all fuel oil is burned), was 1.013mn b/d for May, virtually level with April for the lowest May figure in five years, whilst the 5M 2024 figure of 924,000 b/d was down 3.6% year-on-year [see chart 2].

1: SAUDI CRUDE BURN FELL COUNTER-SEASONALLY TO A 15+ YEAR LOW FOR MAY ('000 B/D)...



SOURCE: JODI, MEES.

2: WITH FUEL OIL USE UP ONLY FRACTIONALLY, OVERALL OIL BURN* FLATLINED AT A TIME OF YEAR IT WOULD NORMALLY SOAR ('000 B/D)



*CRUDE PLUS FUEL OIL CONSUMPTION. PRESUMES ALL FUEL OIL BURNED IN POWER PLANTS (SOME IS USED AS INDUSTRIAL & BUNKER FUEL); EXCLUDES DIESEL.

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