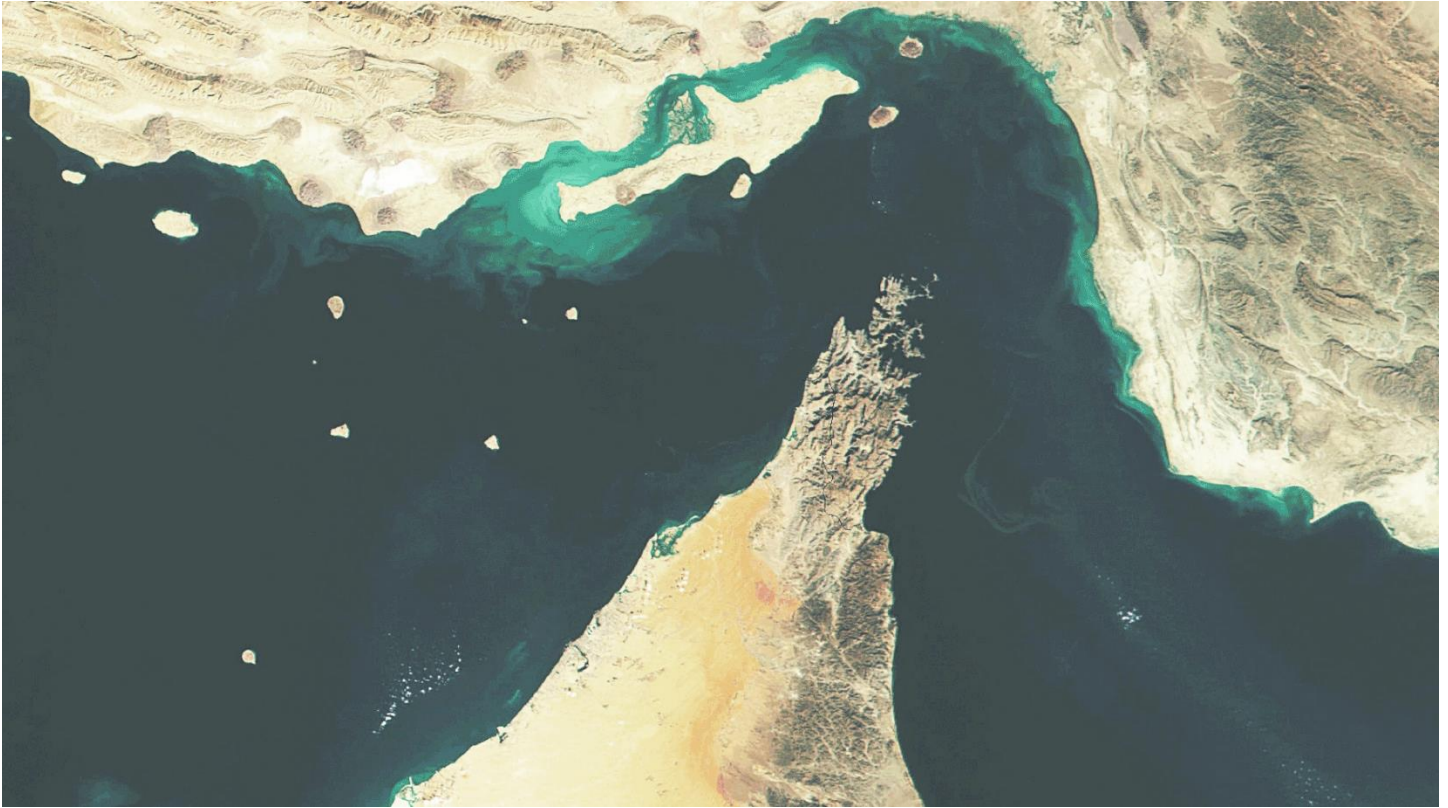


# THE QAMAR NEWSLETTER

Issue 25, July '18



An aerial view of the Strait of Hormuz. Bab el-Mandeb at the southern end of the Red Sea is at most risk for a blockade. Cover story by Robin Mills.

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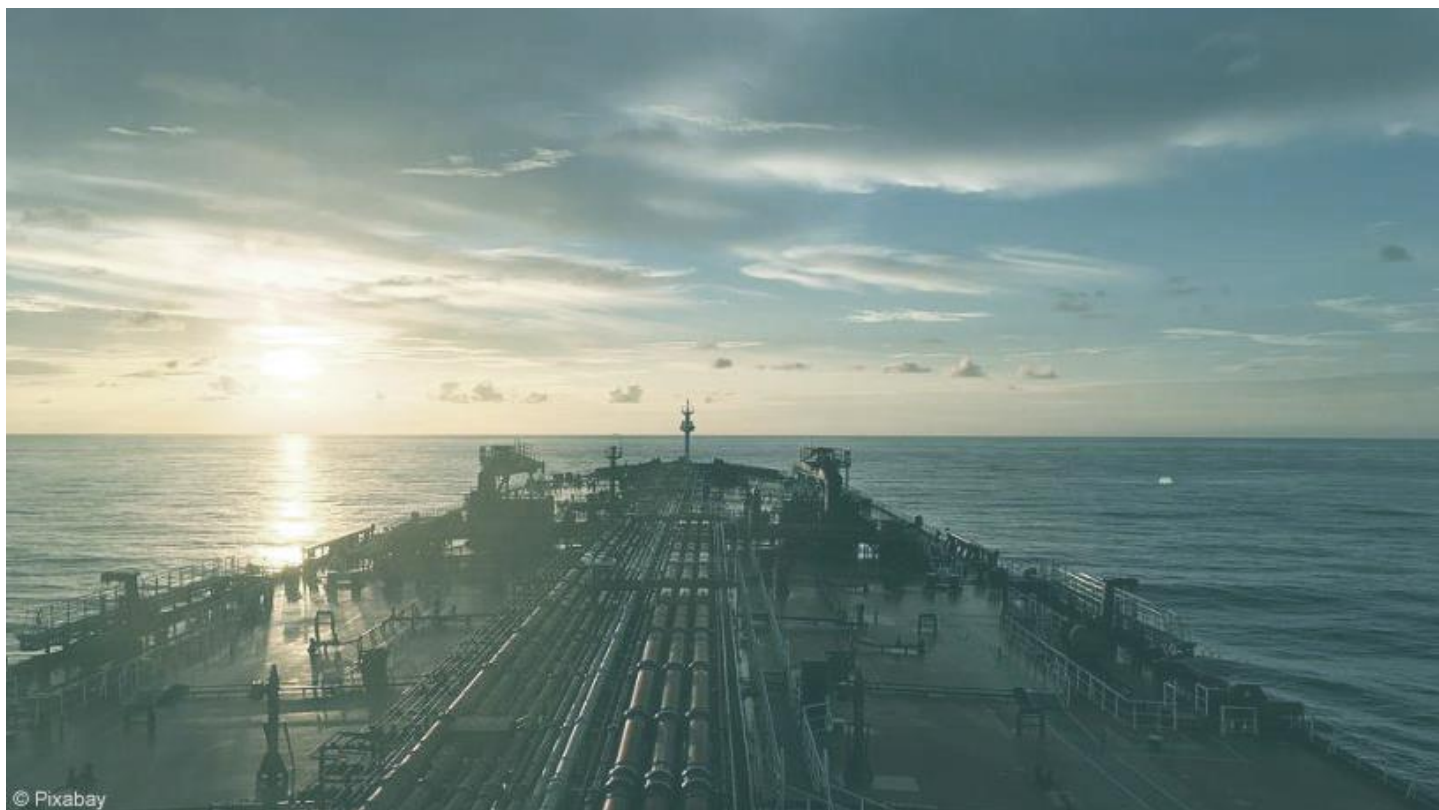
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Qamar Energy is a leading consultancy based in Dubai, which expedites understanding the energy dynamics of the Middle East and North Africa.

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

# THE STRAIT OF HORMUZ IS NOT THE MOST DANGEROUS RISK FOR A BLOCKADE

Robin Mills • A version of this article appeared in *The National*, July 31, '18 • **COVER STORY**



After Iran's President Hassan Rouhani obliquely hinted at a threat to regional oil exports if sanctions blocked Iran's oil sales, attention turned to the wrong strait.

While the focus was on the Arabian Gulf exit of Hormuz, two Saudi Aramco tankers were apparently attacked by Houthi forces in the Bab el-Mandeb at the southern end of the Red Sea, one suffering light damage.

In response, Saudi Aramco temporarily halted oil shipments through Bab el-Mandeb. It's not clear whether the attacks were directly encouraged by Iran, done with its approval or against its wishes. But an incident in the Red Sea can act as a warning shot without the direct attribution that would attach to Hormuz.

Most concern on regional oil transit has focused on the potential cut-off of oil shipments through the Strait of Hormuz, some 18 million barrels per day of crude and almost 4 million bpd of refined products. But this is not the biggest danger.

Saudi Arabia's pipeline Petrolina to Yanbu on the Red Sea can carry about 5 million barrels per day and is being expanded to 7 million bpd by the end of this year, although some is required to feed local refineries. The associated 3.5 million bpd Muajjiz export terminal on the Red Sea is being reopened. Abu Dhabi's pipeline from Habshan to Fujairah on the Indian Ocean, outside the strait, has capacity of 1.5 million bpd, about half of the emirate's exports.

As prices would rise sharply during a closure, Saudi Arabia and Abu Dhabi might even gain in revenues despite shipping lower volumes. Oman, which exports from Mina Al Fahal on the Gulf

of Oman outside Hormuz, is developing another terminal and an oil storage hub at Duqm in its south. Duqm could eventually be connected to Oman's neighbours' pipelines to provide a back-up for exports.

By contrast, Kuwait, Qatar and Bahrain are entirely dependent on the strait. Apart from the autonomous Kurdish region, Iraq too requires Hormuz for all its current exports, while the connection to the pipeline through Turkey remains cut. Despite some discussions with Saudi Arabia, Iraq has not regained access to the 1.65 million bpd IPSA pipeline to the Red Sea which was seized after the First Gulf War, and its planned pipeline to Aqaba in Jordan remains on paper.

Members of the International Energy Agency, most of the developed countries, are required to hold storage of at least 90 days of net imports. The US' Strategic Petroleum Reserve has more, though it is mostly light crude, which would not be a good substitute for Gulf medium and heavy grades. China's own strategic stocks, about 34 days of import cover, are planned to rise to 90 days by 2020, while India's are limited to about 10 days.

If a Hormuz blockade reduced Gulf exports by about 13 million barrels per day, worldwide strategic stocks ought to be enough for almost six months of cover. For a while, logistical chaos would ensue, as tankers, refineries and crude grades were shuffled around – careful contingency plans would be vital. Prices would rocket during the closure but slump again as soon as it was over.

Military studies suggest that an obstruction of Hormuz, by mines, small submarines, "swarming" attacks by boats, and land-based missiles, would be defeated within a few weeks at most by US

and allied naval forces. It would also be a casus belli for the US to make a much wider-ranging strike against Iranian military and other targets.

The economies of China, Japan, South Korea and the EU would be directly threatened. The US, now a major oil producer, is still a net importer but would suffer less, while Russia would greatly benefit.

Meanwhile, Iran needs the strait for virtually all its oil exports. Despite long-running plans, it has still not developed a pipeline to the port of Jask on the Gulf of Oman. So an attempted halt to oil exports would be economic and diplomatic suicide, only to be attempted as a last resort.

A stop to Hormuz oil shipments may be the most headline-grabbing worry for policymakers, and the most striking threat Iran can make. But it is the wrong place to look for the most damaging impacts.

With its back to the wall, Iran might attack points of offshore oil and gas installations, which are more vulnerable and would take much longer to repair. In 1986, a platform in Abu Dhabi's Abu Al Bukhoosh field, possibly confused with Iran's nearby Salman field, was damaged by Iraqi air attack.

A Hormuz blockade would create more problems for liquefied natural gas (LNG) exports rather than for oil. Qatar exports a quarter of the world's LNG, all through Hormuz, and countries such as South Korea, Japan and Taiwan are entirely dependent on LNG imports for gas. Russia would take the chance to step up supplies to Europe, bolstering its geopolitical influence. Gas is stored in much smaller volumes than oil, especially if – with US sanctions due in force in November – a closure struck during the high-demand northern hemisphere winter.

And imports into the Gulf are crucial. Apart from Saudi Arabia, the UAE's east coast and Oman, the Gulf countries bring in all their seaborne supplies via Hormuz. Essential goods could come overland from the Saudi Red Sea coast or Jordan, or by air, but this would be logistically challenging and even a short interruption would be damaging. Several countries have invested in emergency food stocks for this reason. International businesses and expatriates operating in the region would lose confidence and might not quickly return.

A long-term closure of Hormuz is, as long as the US opposes it, an idle threat. The threat to oil is also overstated. A single-minded focus on one much-wargamed scenario should not obscure more dangerous and innovative threats.

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## IRAQ HEATWAVE LAYS BARE ENERGY SECTOR'S SHORTCOMINGS

Robin Mills • *A version of this article appeared in The National, July 23, '18*

The miserable conditions in the south of Iraq are the origin of the current protests, as Patrick Osgood, writing here, has very well explained.

With Basra set to hit 49°C this week, the lack of reliable electricity and clean water is intolerable. Utopian solutions will not work,

handouts do not tackle the source of the problems – so what can be done?

The US occupation authorities and subsequent Iraqi governments have all battled with this problem. Electricity generation has risen sharply since 2012, but has been unable to catch up with a rising population, growing demand and the backlog of war damage and decrepitude. Of 26 gigawatts installed generation, theoretically enough to meet the current 23 GW of demand, less than 17 GW is operable because of lack of fuel, maintenance and transmission capacity. In turn, inadequate electricity causes economic stagnation and unemployment outside the oil sector, another key source of anger.

Under the stress of lower oil prices, the national budget fell from \$150 billion in 2014 to \$88bn in 2017, despite running a large deficit and cutting most investment spending. This has held up the completion of power plants ordered from GE and Siemens, and slowed progress in capturing flared gas, a by-product of oil production, for fuel. Meanwhile Iraq is buying gas from Iran, a helpful expedient but at a high cost. Unable to pay cash, it has been sending some oil consignments from Kirkuk to Iran in exchange.

Iraq was also buying 1 GW of power from Iran, but this has been cut off owing to unpaid bills and shortages in Iran itself – themselves triggered by the heatwave and a lack of water in hydroelectric dams. As a temporary expedient, the Baghdad government has reduced supply to Ninewa, in the north, to supply more electricity in the south, but this just raises the risk of more discontent in the areas recently liberated from ISIS.

Studies have indicated that worldwide, higher temperatures lead to increased political violence – perhaps because of physical stress leading to anger. In Iraq's case, this is exacerbated by the lack of reliable air-conditioning, and by poor-quality, insufficient water. Climate change will make Iraq up to 2°C hotter in summer by 2040, with rainfall 10-20 per cent lower.

Much is written about “international water wars”, but the first impact of water shortages is being felt in the internal fabric of fragile states. Dams in Iran and Turkey have cut the flow of the Tigris and Euphrates. Both are struggling with drought themselves and not likely to spare more water for their downstream neighbour.

To deal with these problems, Iraq needs to strengthen itself within while building relations abroad. At home, the government needs more reliance on the private sector and international investment. To build some patience and trust, and bypass the sclerotic federal and provincial patronage networks, devolution to the local level is essential for smaller-scale projects.

The conundrum is that power plants cannot be built in a day, but the protestors are tired of previous empty promises. The government may do better to start small. Local solar power installations could be provided quite quickly, and would at least run air-conditioning during the daytime heat. Under community management, with automatic meters to cut off non-payers, this could give ordinary people some agency, provide local jobs, ease the problems of sabotage and electricity theft, and undercut the “mafia” that runs noisy, polluting, costly diesel generators. Similarly, drip irrigation schemes would save on the wasteful use of water.



Megaprojects in the oil and electricity sectors are beset by mismanagement and corruption. For problems that can only be solved by large-scale schemes – finishing the large power plants, gathering gas, fixing dams, building water treatment and desalination – Iraq could experiment with a blend of approaches. Two possible approaches would be an empowered agency outside the bloated structure of ministries; or the restart of the stalled creation of special economic zones, which can act as laboratories and demonstrations for new approaches.

On the political side, Baghdad will find assistance and goodwill. International mediators can help it strike a deal with the autonomous Kurdish region. Because of its openness to private investment, the Kurdistan region has more available gas and power capacity. Some of this could be transferred to the national grid, while Baghdad also needs to use the Kurdish pipeline to export oil from the Kirkuk area to Turkey. In return, Erbil needs oil revenue-sharing to pay its bills.

The GCC has long complained about excessive Iranian influence in Iraq, but it will welcome some recent signs of change. Protesters have chanted slogans against Iran and attacked offices of two of the militias closest to Tehran. In a sensible outreach, Saudi Arabia reopened its embassy in Baghdad in 2015 and the Arar border crossing last August. Crown prince Mohammed bin Salman received Muqtada Al Sadr in July 2017; Mr Al Sadr's list went on to head the elections.

A delegation from the Iraqi ministry of electricity was due to visit Riyadh last week to discuss importing electricity, although it would take some time to construct an interconnection. A link to the Kuwaiti grid for 200 megawatts was in progress in February, while Iraq is meant to be exporting some gas to Kuwait, creating a mutually-beneficial trade.

Solutions are obstructed by patronage politics, bureaucrats' statist mindset, and the temptation to placate the protesters with unaffordable giveaways. But after miserable turnout in the last elections, the political reward is there for the party that can break the past's failed mould.

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## NORTH KOREA COULD PLAY A ROLE IN ENERGY MARKETS

Robin Mills • *A version of this article appeared in The National, July 16, '18*

As nuclear-related sanctions on one country return, those on another might ease. Negotiations with North Korea are set to be long and bruising, but some vague commitments on denuclearisation have already opened a path to more normal relations with the US and the world. Then, what roles might Pyongyang play in north-east Asia's energy nexus?

There is now a tacit US acknowledgement that its nuclear programme makes its regime secure from external overthrow. It remains a dictatorship mostly isolated from the world and with a horrendous human rights record. The economy is so opaque that the saying is that any statistic about North Korea with a decimal point is wrong.

We can surmise at least that gross domestic product per capita is barely back to the level of 1987, after the disastrous 1990s famines, and it ranks in the world's 20 poorest countries. Yet

North Korea's autarkic, totalitarian economic system has been gradually cracking since the late 1990s, with a nascent private sector. In energy as in economic terms, North Korea today is a midget. With a population of 25 million (against South Korea's 49 million), its GDP was estimated in 2015 at \$40 billion, adjusted for purchasing power, compared to its southern twin's \$1.91 trillion.

It is not surprising that current energy use is miniscule. It consumes just 18,000 barrels of oil per day, most of which has to be smuggled in, and produces no oil or gas of its own. Current sanctions restrict its coal exports, a key source of its limited foreign currency earnings. Satellite images show the country almost completely dark at night. Electricity generation capacity is around 7.2 gigawatts, less than a tenth of the South's, and drought means its hydroelectric plants run well below full output.

But North Korea is interesting to energy players in three ways: its potential to become another energy-hungry Asian tiger, its own natural resources, and its use as a transit route. In a report last month, UBS estimated some spectacular possible economic growth rates over the next two decades: anywhere from 11 to 21 per cent annually, if peace were achieved with the South, or even reunification. The North might follow the path of China and Vietnam, which have remained autocratic and notionally Communist while allowing free enterprise within a state capitalist framework.

Its current poverty is in enormous disparity to its well-educated work force, natural resources and attractive geographic location. This would mean an economy at least eight times bigger than today's, with energy demand probably rising proportionately. A phased, controlled reconciliation would also boost the South's economy and hence its own energy demand.

Consuming even at the levels of Vietnam, the North would need ten times as much oil as today. It would also require a huge scale-up of electricity generation, where in contrast to its weapons programme, planned nuclear power plants have gone nowhere. Key to the initial phase of North Korean economic opening would be use of its natural resources to provide export revenues and energy for business and industry. This has been tried before; from 2004 to 2012, a UK-based oil company, the minnow Aminex, engaged in a quixotic quest for oil and gas exploration rights, but made little headway. A Mongolian company, HBOil, followed in 2014 but similarly backed out last year because of sanctions.

Geologist Mike Rego, who reviewed data for Aminex, noted that oil was discovered off the west coast in the 1980s, with the area possibly a northward extension of China's Bohai Bay, a prolific producing area. There are also signs of oil and gas onshore, but nothing has been developed. The country has significant coal resources, as well as various metals including gold. In particular it is believed to have the second-largest deposits in the world, after China, of rare earth minerals, used in electric motors and wind turbines.

So far, North Korea has been an obstacle to trade, but it could become an important transit route: its key geographic position ties in Russia, China and South Korea. All of the South's gas currently comes in tankers as liquefied natural gas (LNG). Because of its relatively high cost and perceived insecurity of supply, the share of gas in South Korea's consumption is small, just 14 per cent, compared to double that in the US.

Russia is building new pipelines to supply China, where gas also has only a limited share. Its main eastern port, Vladivostok, where it plans to build an LNG export plant, is just 150 kilometres from the North Korean border, and from here a pipeline could run down the natural resource-rich east coast to the South. Access to a new, attractive market would give Moscow more pricing leverage regionally, develop its underpopulated far east, and secure an ongoing political role.

For now, a pipeline is just a dream. Much more trust would be required between the two capitals, and Pyongyang would need to build a reputation of reliability with smaller foreign investments. Connecting the four countries' electricity grids could be an initial step, since here North Korea would be more reliant on its neighbours' supplies than vice versa.

Normalisation is still clearly a long way off, and North Korea's economic climate remains chilly. But the US has already made major concessions to Pyongyang without receiving much in return. If sanctions are eased, the country may yet go from Hermit Kingdom to the next Asian energy hotspot, opening opportunities for the bold or foolhardy.

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## SAUDI ARABIA HAS NEW PLANS FOR PRICING ITS OIL

Robin Mills • *A version of this article appeared in The National, July 09, '18*

Lenin would not have dabbled in a capitalist activity such as oil pricing. Nevertheless he captured its essence. "Who whom?" – who can do what to whom – describes who sets prices and who just has to accept them. And Saudi oil giant Aramco has just decided that it will not be the one dictated to.

Aramco, the world's largest oil company, is changing the basis on which it sets prices for its Asian customers. Since the mid-1980s, it has used the average of the Oman and Dubai crude prices assessed by Platts, a specialist energy information provider. It then applies a set of discounts or premia for each of its crude grades, to give a set of Official Selling Prices (OSPs). It adjusts these factors monthly depending on its view of the market, ensuring that it receives the best possible price while still being competitive for its customers. Kuwait, Iraq and Iran usually watch Aramco closely before setting their own OSPs.

But there have been no trades of Oman in the Platts pricing window in 2017 or this year, while the Dubai Mercantile Exchange (DME) has traded about 3,200 contracts daily this year. So Aramco will now shift from the Platts Oman assessment to using the Oman price quoted on the DME. Based in the Dubai International Financial Centre, DME is a joint venture of CME Group, the world's largest futures exchange, Dubai Holding, Oman Investment Fund and a number of big banks and oil companies.

For now, Aramco has gone half-and-half, using the DME Oman price and the Platts assessment of Dubai prices. This may satisfy traditionalists within Aramco, but it will eventually be simpler for the company to shift over to using DME solely. This move should track the market better, avoiding either leaving money on the table, or overpricing and struggling for market share. It may also lead to a slight gain in pricing because of the improved risk management for customers available from hedging. DME offers contracts on the spreads (difference) between Oman crude oil,

Brent (the European and main international marker), and various oil products, allowing refiners to hedge their exposure between input and outputs. As the exchange gains liquidity, it enters a virtuous circle of becoming more attractive to traders.

Oman has priced its sales on DME from its launch in 2007, and Dubai adopted DME pricing in 2009. Now, where Aramco goes, others will follow. Iraq's State Oil Marketing Organisation looked at switching to DME last year, but although it has sold some surplus cargoes through the exchange's auction system, it has not yet changed its pricing model. ADNOC set up a new trading unit in April, and in general is testing new approaches across its businesses. A move to adopt DME looks likely here too.

The Bahrain Petroleum Company, only a small player, will probably also concur. In the Gulf, that will just leave Kuwait, Qatar and Iran to decide.

Still, it is not just the lack of trading on the Platts mechanism which has forced Aramco's hand. In March, the Shanghai International Energy Exchange (INE) launched China's first crude oil futures contract. As I wrote then, this move was inevitable, given Beijing's desire for some control over its key imported commodity, but it was a concern for Middle East oil exporters.

The INE contract has several problems for traders – particularly, denomination in yuan, restrictions on crude imports into China, and the contract's subordination to Beijing's imperatives, which are in the direction of cheaper oil. An international, impartially regulated, dollar-denominated exchange such as DME will be preferable for most non-Chinese traders.

The contracts of INE and DME, which reflect similar underlying crudes, should trade closely in line. In practice, INE has traded often at a discount to DME, when it should be at least \$2.50 per barrel above, allowing for transport costs from the Middle East to China.

In May and June, Asia's largest refiner, China's Sinopec, announced it would cut its long-term contract purchases from Aramco by 40 per cent. With usual variation only allowed within a range of plus or minus 10 per cent, Sinopec was playing hardball, arguing that Aramco's prices were too high. The Chinese state firm may also have been looking ahead to the possibility of acquired discounted cargoes from Iran as sanctions tighten.

Sinopec's stance could be just a foretaste of what could happen as China's oil thirst swells. In 2015, Sinopec and PetroChina, the largest Chinese oil firms, were accused of squeezing the market by acquiring nearly all the available Oman cargoes. Asia imports some 22 million barrels of crude daily, of which China hit a record high of 9.6m bpd in April. The Arabian Gulf countries collectively export about 19m bpd, and from this 5m bpd is Saudi crude to Asia, now under the new pricing methodology.

With the growing self-sufficiency of North America, and long-term expected decline in European demand, Asia is the key crude market today and tomorrow for the Middle East. The key question is, who leads and who follows. Aramco's decision puts DME in the driving seat, and it will be in an even stronger position if other Middle East producers follow. Aramco may not be able to fix the price of oil, but they can at least ensure it is not set six thousand kilometres away.

# SHARJAH JOINS IN ON THE UAE'S OIL AND GAS EXPLORATION DRIVE

Robin Mills • *A version of this article appeared in The National, July 02, '18*

Sharjah is the latest emirate to join the UAE exploration party.

Quite independently of Abu Dhabi and Ras Al Khaimah, Sharjah National Oil Company, on June 25, announced it was offering three blocks to companies to search for oil and gas.

The policy is right; now it's time for the geologists.

Area A surrounds the existing producing fields around the Sajaa industrial zone, with its western limit approximately following the E611 Emirates Road, and includes a deep gas find under the Sajaa field itself which has never been developed. Area B runs south of this location to around Al Madam, covering the gap between Sharjah's own fields and the Margham gasfield in Dubai, which lies off the Lehabab-Hatta Road.

And Area C, the "inner thrust belt", is the eastern part of the emirate's contiguous territory, running up to the mountains. The city itself, the adjoining offshore, and the east coast exclaves of Kalba and Khorfakkan, have not been offered for exploration yet, but could be in future.

The mountains running from Musandam down the eastern side of the UAE and into mainland Oman are a "thrust belt", where two of the plates forming the Earth's crust have collided. Rocks of the eastern plate, part of a now-vanished ocean known as Tethys, have been pushed over the Arabian Plate.

This forms underground domes and other structures which are potential traps for hydrocarbons, potentially as deep as 6,000 metres below the surface. Such mountain ranges hold major oil and gasfields in areas including the Rockies, the Zagros of Iran and the Iraqi Kurdistan region, the Caucasus, and the Peruvian Andes.

But despite the discovery of Sajaa and two other onshore gasfields, the last of which started production in 1994, Sharjah's complex geology had defied earlier understanding and led to the drilling of numerous dry (unsuccessful) wells.

To drum up interest in its new bid round, the Sharjah National Oil Company itself acquired three-dimensional seismic data covering the whole of areas A and B, and also extending into Dubai. This survey uses the reflection of sound waves to form a picture of the geology. The 3D seismic analysis gives a much clearer picture than the older two-dimensional method, like identifying a face seen through a window instead of through frosted bathroom glass.

Last year, government-owned RAK Gas also carried out such a survey in its offshore area, as well as acquiring gravity data covering all its territory. Subtle variations in the strength of the Earth's gravity are a further hint to what is going on below the surface. Providing such information to interested companies lowers their risk.

The likeness of the geology of Sharjah and Ras Al Khaimah may provide useful hints. Attracting new exploration ideas and technologies from outside is vital. Major discoveries around the world over the past few years have involved fresh thinking – the ultra-deep-water "pre-salt" in Brazil, the ancient limestone reef that holds Egypt's giant Zohr gasfield, and tracing the match between Guyana and Ghana before the Atlantic Ocean opened.

The understanding of unconventional resources – particularly shale in North America – has also advanced enormously and Abu Dhabi in particular recognises potential. Next door, Oman has exploited "tight" (low-permeability) gas reservoirs to sustain its exports, while Bahrain seeks to produce offshore shale oil.

The coincidence of the three emirates' bid rounds is not intentional but convenient. Abu Dhabi's territory, with the prospect of giant oil and gasfields, should attract major firms. The other two emirates may generate interest from both large and medium-sized companies. Now business development teams can look at all three simultaneously.

Sharjah and RAK have taken extensive expert advice to make their legal and petroleum taxation systems attractive and competitive. Potential investors will be attracted by extensive existing infrastructure, in a stable and safe country with a skilled petroleum workforce. Any discoveries will find a ready market and attractive gas prices.

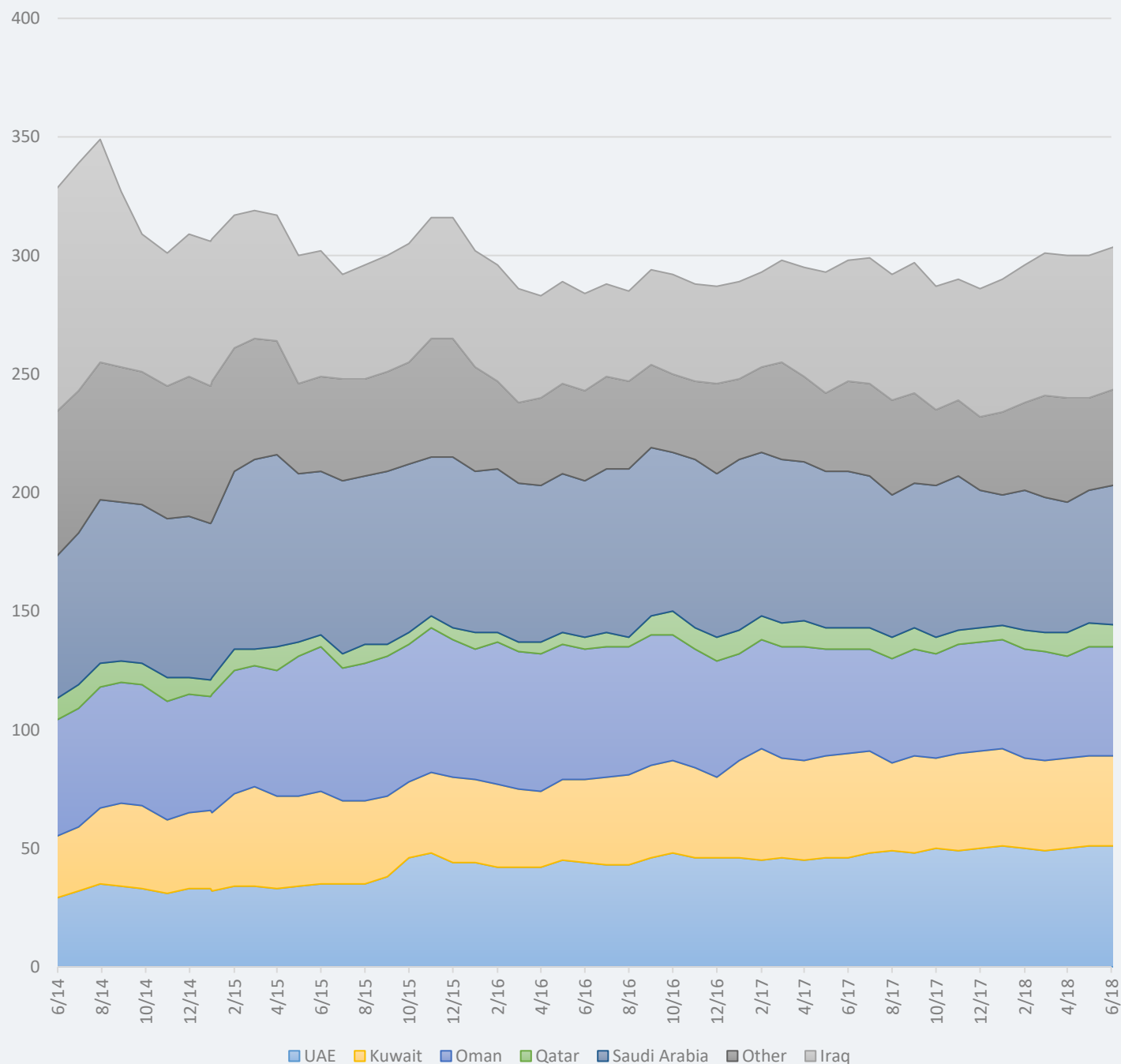
In their heyday in the 1980s and early '90s, Sharjah's gasfields supplied all its demand and a large part of Dubai's. They also yielded large quantities of condensate, a valuable light oil. But since then, overall production has dwindled. The Sharjah Electricity and Water Authority was forced to burn expensive diesel and fuel oil for power, putting it under financial strain and leading to rising prices for consumers.

This encouraged a search for new gas supplies, with a deal signed for pipeline imports with Mubadala-controlled Dolphin Energy in October 2016, and plans to start up a liquefied natural gas import terminal, the country's third, next year. More domestic production would be preferable to imports, though. Oil and gas makes up just 2 per cent of the government budget, and more revenues would help to fill a modest budget deficit.

RAK signed up for Dolphin gas at the same time, but it would also like to find more oil and gas of its own, to power its growing industrial sector, and keep its under-utilised gas processing plant fully occupied.

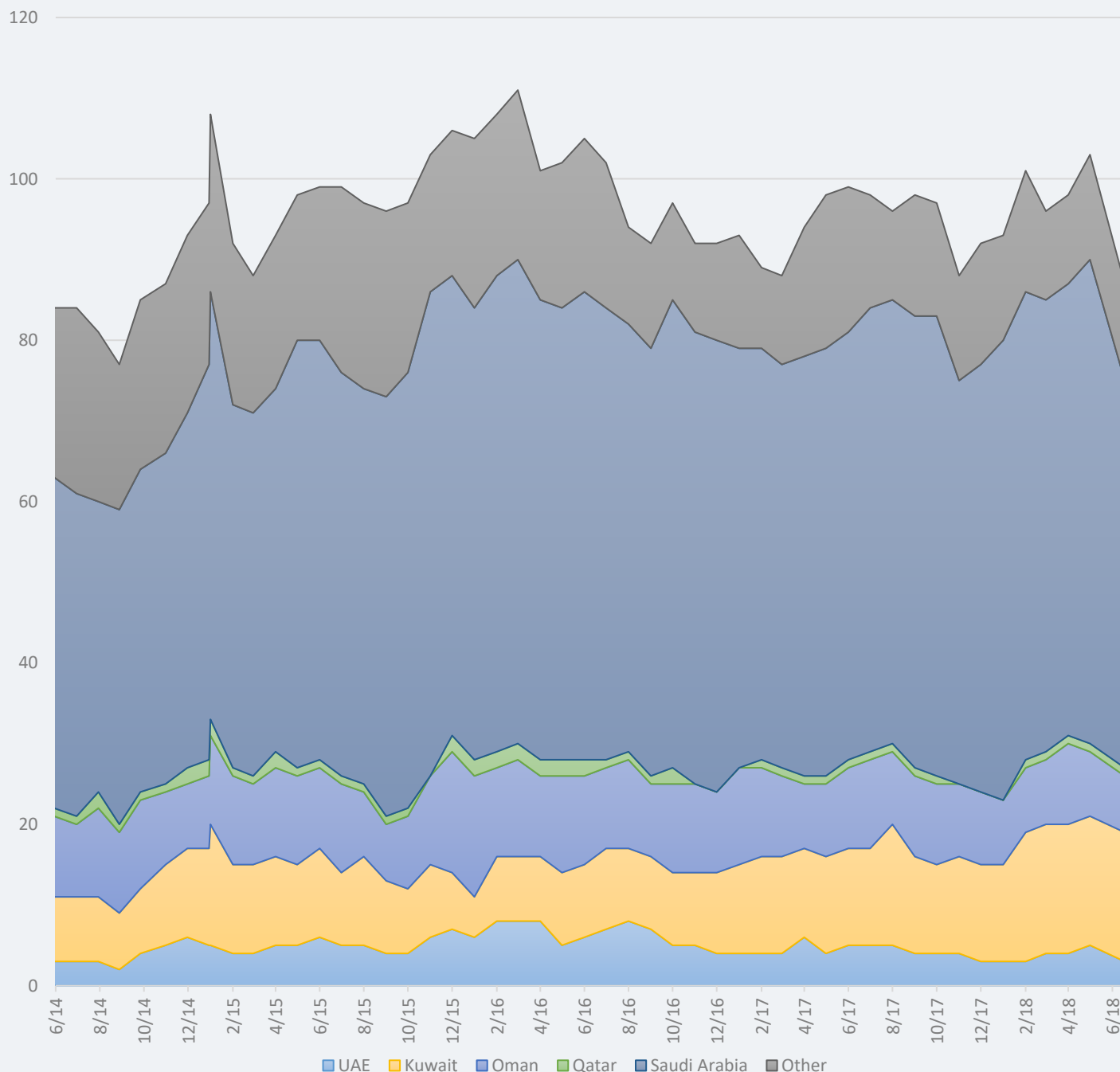
Looking for petroleum is always an uncertain business, especially in such complex geology. With an exploration period up to six years, it will be some time before any production reaches consumers. But RAK and now Sharjah have taken the first steps on making the most of their hydrocarbon potential.

## RIG COUNT SNAPSHOT: OIL



- The Middle East's oil rig count in June increased by +5, excluding Iran. Iran's rig count is not included in Baker Hughes; however, OPEC reports total (oil and gas) rig count in Iran has remained steady at 61 throughout 2017, till June 2018.
- The GCC's rig count gained by +3 in June; drilling has stayed steady at near-record levels since January.
- Iraq has stayed steady at 60 rigs since March, due to concerted efforts to ramp up production at its oilfields. West Qurna-1's production has increased by 40 kbpd to reach 499 kbpd, as has Zubair's, increasing by 45 kbpd to average 475 kbpd.
- Kuwait's rig count fell back to its October 2017 levels (38) once again, after having stayed steady at 41 since November 2017.
- Saudi Arabia gained by +4 in May, and overall production for June witnessed a rise of ~405 kbpd after OPEC relaxed its production cuts on June 22. On June 28 Aramco and US-based National Oilwell Varco signed a JV to establish an on-shore rig equipment manufacturing facility in Ras al Khair.
- Non-OPEC member Oman's rig count gained by +3 from April; in June, the country's production reached its highest in 8 months, averaging ~974 kbpd. Efforts to increase output is in line with OPEC+ commitment to increase production by 250 kbpd.

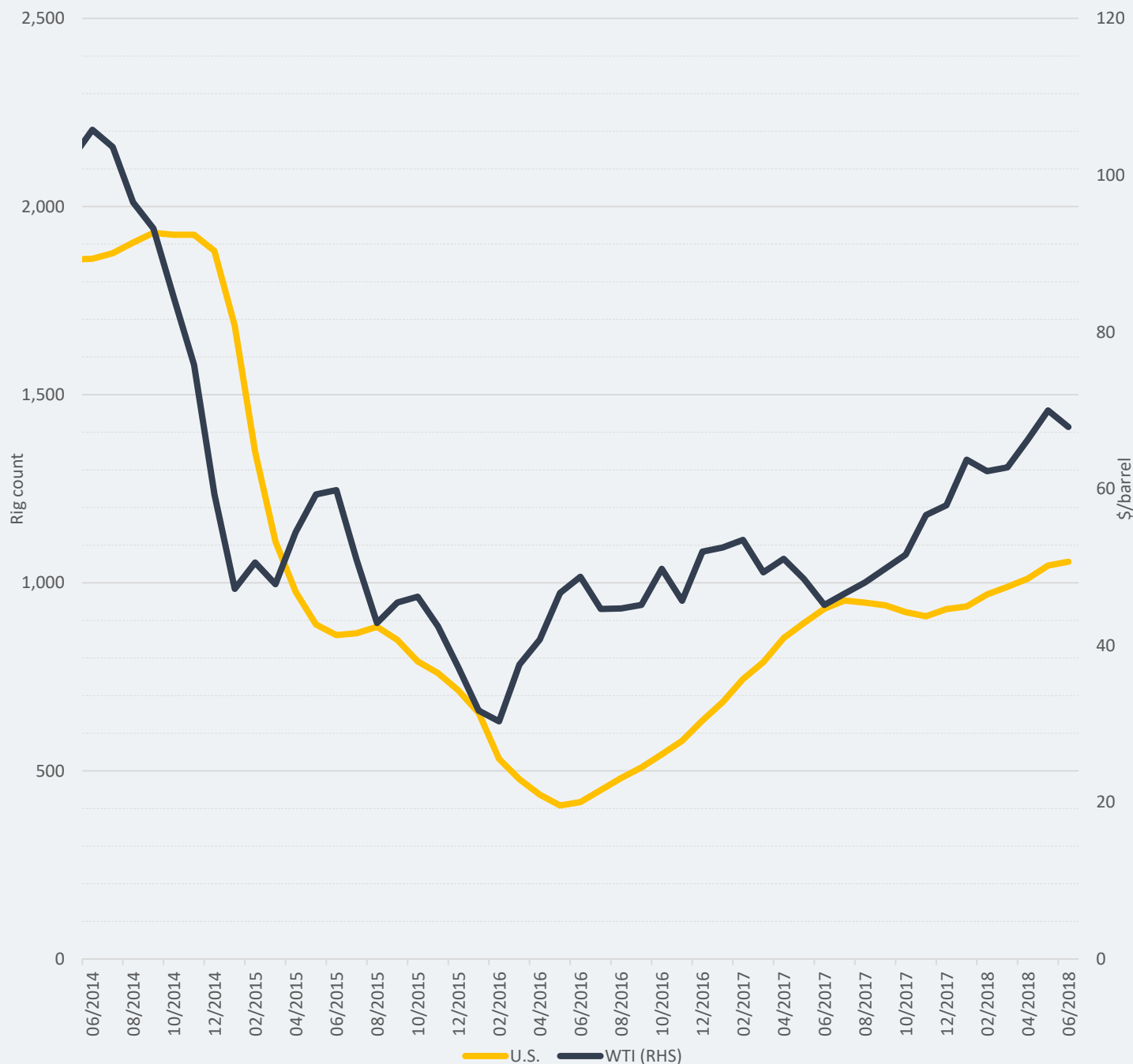
## RIG COUNT SNAPSHOT: GAS



- The Middle East's gas rig count fell to a low of 87 in June, with 86 being a record low in 2012. Its highest level reached was in January 2014 at 123 gas rigs. The region's count had crossed 100 for the first time last month since August 2016.
- The fall came mainly due to a decrease of -12 in Saudi Arabia's count; Weatherford announced earlier this month the sale of its rigs in Saudi Arabia to ADES International Holding. Combined with Kuwaiti and Algerian rigs, the total number of rigs sold is 31.
- Oman's rig count fell by -1, even after Petroleum Development Oman announced a significant gas find with estimated recoverable reserves of more than 4 Tcf and 112 MMbbl condensate in March in the north of its concession area.
- The UAE witnessed a fall of -2 in its count; the country has earmarked \$109 B for downstream assets and sour gas development, indicating a future increase in rig counts.
- Kuwait gained by +4 in gas rigs from January, after having stayed steady since November 2017 with 12 gas rigs, beating its previous year-high count of 15 in August 2017. The Kuwait Oil Company plans to increase Jurassic gas production from 170 MMcf/d to 520 MMcf/d in 2018.

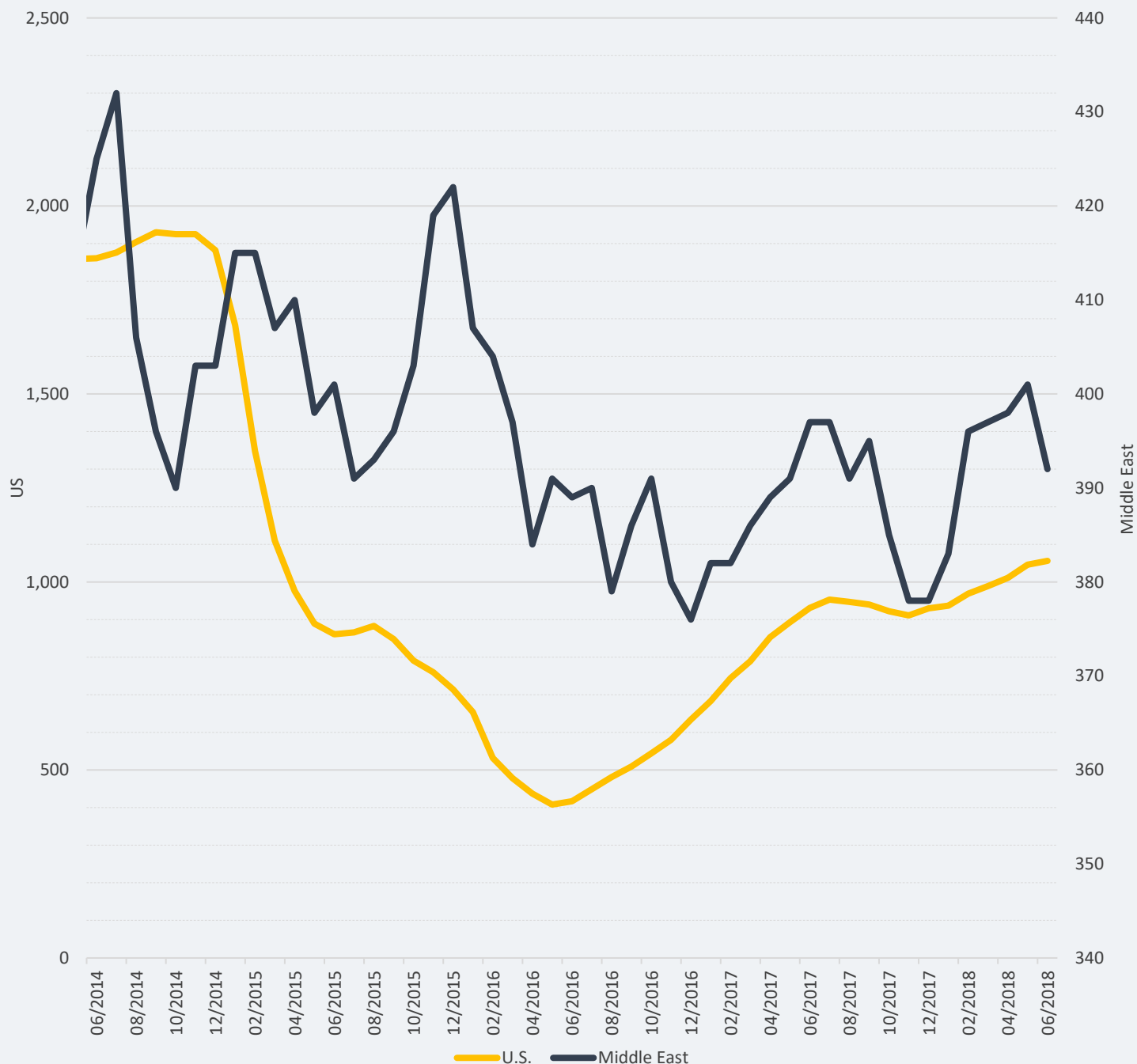


## RIGS VERSUS OIL PRICES: US RIGS & WTI



- US rig count jumped by ~10% in June y-o-y, a rise of 90 rigs. The US has overtaken Saudi Arabia in crude production, averaging ~10.8 Mbpd in June, about ~415 kbpd higher than the kingdom's output for the same month.
- Total US rig count has been in decline since August of last year due to producers trimming spending plans citing softer oil prices; however, at 1056 for June, an increase of +10 from May, the country has made a rapid recovery, passing 2017's high of 953 rigs and nearing 2015's >1000 levels.

## RIG COUNT: US & MIDDLE EAST



- The US witnessed a further fall in its offshore count, falling by -8 y-o-y from June 2017, during which time its rig count fell owing mainly to Hurricane Harvey and other natural disasters. The country had made a steady recovery, with a fall in its count occurring only in May this year.
- Total Middle East rig count stayed steady in June from increased oil activity. The UAE and Saudi Arabia slipped below 100% compliance rates due to higher production with to 83% and 26% respectively in June. Other OPEC members have struggled to increase production with compliance rates at 100% or above, for example in Angola, Algeria, Ecuador, and Gabon.
- The region's rig count has averaged 392 for the last two years.

# FUEL PRICES & SUBSIDY REFORMS

JULY 2018

- The UAE was the first GCC country to remove fuel subsidies in August 2015; gasoline prices will rise by a marginal ~0.5% in August from July. Fuel prices were announced to be revised upwards on April 30 in line with increasing world prices.
- In Qatar, fuel prices for August will witness no change from July. In May, Qatar's gasoline prices increased by ~9.9%, the highest level since Qatar started pegging its fuel prices to the international market in April 2016.
- Meanwhile in Kuwait, the Parliament's Financial and Economic committee has approved the cancellation of the decision enforced in September 2016 to raise fuel prices to 'reduce financial burdens on citizens'. Similarly in Bahrain the Council of Representatives urged the government to rethink its fuel price hike just a day after it was approved, finding the change 'too sudden', but on May 27, the High Administrative Appeals Court dismissed the complaint, allowing the Ministry of Oil & Gas to raise fuel prices from September 2018.
- In Oman, the prices of Gasoline 91, 95, and diesel for July fell by ~0.45%, ~0.5%, and ~1.6% respectively from June's fuel prices; demand for M-95 and diesel declined by ~3.5% and ~7% in June, after having gained ~21% and ~22% in April.

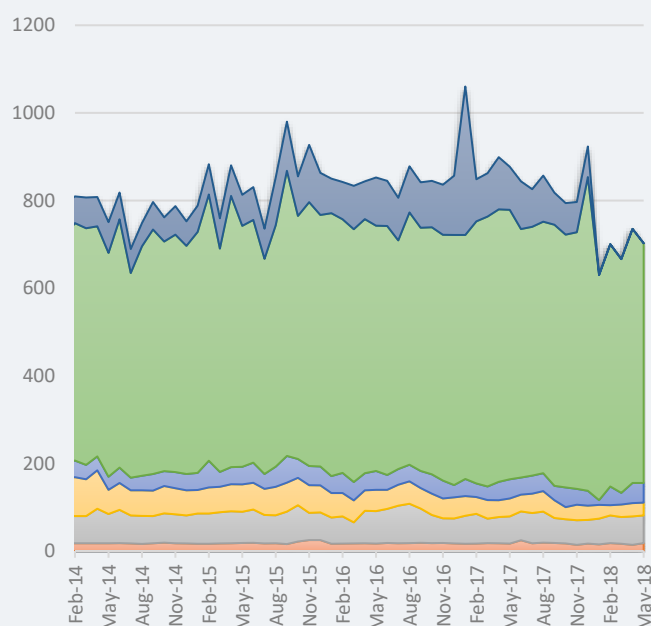
The following table represents the prices of gasoline 95 and diesel (\$/litre) for July 2018 in the GCC countries.

GCC Country	PAST US \$ PER LITRE		CURRENT US \$ PER LITRE	
	Gasoline 95	Diesel	Gasoline 95	Diesel
Saudi Arabia	0.16	0.07	0.54	0.13
UAE	0.46	0.63	0.67	0.72
Qatar	0.27	0.27	0.56	0.56
Bahrain	0.27	0.42	0.53	0.42
Kuwait	0.21	0.36	0.35	0.38
Oman	0.46	0.39	0.58	0.64
US - PRE TAX	0.52	0.57	0.64*	0.71

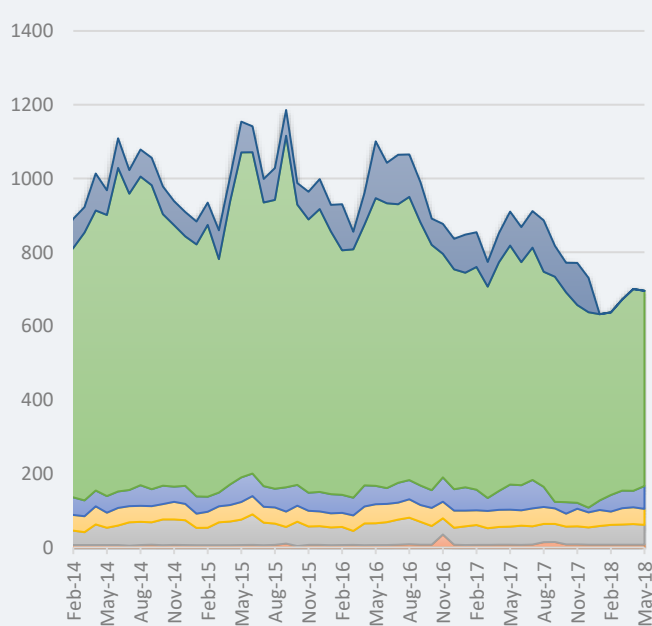
\*US Gasoline 95 values are calculated for Premium Grade.

Source: EIA, Qamar Energy

GASOLINE DEMAND kbpd



DIESEL DEMAND kbpd



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

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

Note: UAE figures for 2018 are not available.

# CAN IRAN CAPITALISE ON ALTERNATE-EOR LIKE ITS RIVALS ACROSS THE GULF?

Maryam Salman • Editorial & Research Analyst

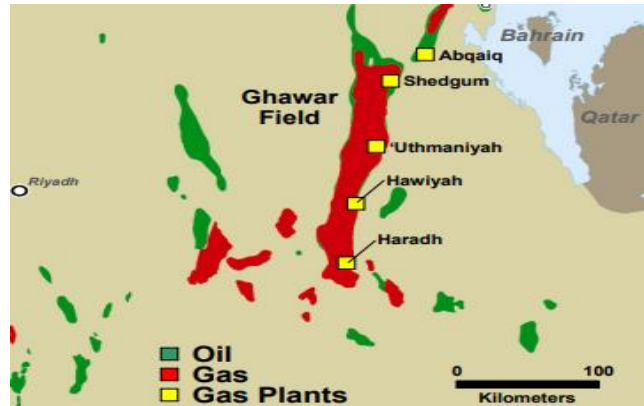
Most of the Middle East is characterised by maturing brownfields making it one of the largest potential markets for EOR. In Iran 70% of all crude production is sourced from some of its oldest oilfields. The country has long been betting on a potential 1% increase in their recovery rate that can allegedly bring in a cash windfall of \$525 B, yet it remains unsuccessful, even as its rivals across the Arabian Gulf (most prominently Oman, Saudi Arabia, and the UAE) embark on newer enhanced oil recovery (EOR) and improved oil recovery (IOR) technologies to reverse declines. Currently stuck between defying looming US sanctions and protecting its market share against other regional competitors, a decline in its exports would mean a decline in production as storage builds and customers dissipate. This would be in stark contrast to Oil Minister Zanganeh's bold proclamations of Iranian production crossing the 5 Mbpd mark by 2021, which in any case is too far-fetched a goal, as prominent western investors have bid adieu to major development plans in the country. And a rapidly declining recovery rate from its mature fields, reliant heavily on natural gas injections to stay online, is not helping its cause.

Some 1500 kilometres away from Tehran, Petroleum Development Oman (PDO) has grown into a global innovator, spearheading EOR technologies to leverage every dollar worth from Oman's challenging and maturing fields<sup>1</sup>. According to PDO, EOR is expected to contribute to ~25% of Oman's overall production by 2025 which currently stands at just under 1 Mbpd, excluding condensates. One of its largest successes in this area is the solar-enhanced EOR recovery project with GlassPoint for the Amal field. The technology will predominantly feature "solar steam" which could contribute more than \$12 B to Omani GDP if solar steam generators are localised. Oman has been trying to diversify away from gas reinjection and thermal injection (which also requires gas) to utilise gas for higher value applications such as power generation, desalination, industrial development and export.

In this regard, the UAE and Saudi Arabia too have made developments. In November 2016, ADNOC and Masdar established the Mussafah carbon capture facility to gather 800 kt/y of carbon emissions from Emirates Steel that will be piped to ADNOC Onshore after compression and dehydration for EOR at the Bab and Rumaitha oilfields, reducing dependence on gas imports for recovery. Iran's arch-rival Saudi Arabia was the first in the region to develop a carbon capture plant to enhance its domestic oil production from maturing fields. In 2015, it commissioned a 0.8 Mtpa storage plant for capturing CO<sub>2</sub> from the Hawiyah NGL plant and transporting it via pipeline for injection into the Uthmaniyah production unit in the Ghawar oil field (see figure<sup>2</sup>), as it seeks to save gas for power generation.

Currently thermal EOR is most widely used in the Sultanate, though the popularity of chemical EOR techniques (alkaline surfactant polymer and high-viscosity polymer injections) is growing. EOR via gas injection is the preferred technology in Iran, but the strain on the country's gas production is palpable, even as it plans to add 84 Mcm/d from South Pars "in the coming months". Iran's use of natural gas injection for EOR has increased by 56% in the last decade, reaching about 20% of its current natural gas production that could instead be exported, providing some form

of buffer against the loss of crude exports elsewhere. Gas exports have not been sanctioned by the US or EU in the past. More importantly, the gas can be redirected to Iran's private sector, where dozens of industrial projects remain stalled since a decade ago.



As with Oman, the use of solar-induced steam EOR could also help stem some of the criticism about the country's strained energy budget. For example, PDO's Miraah solar-thermal plant utilises 36 glasshouses to generate 6000 tonnes of steam a day to support EOR technology at the Amal field, which has resulted in over 55% of cost savings for Oman compared to a pilot project carried out last October. However, solar steam only applies to heavy oil. That could be used in Iran but may not be the primary target currently. For now, Iran's main EOR alternative would be CO<sub>2</sub> instead of gas for injection in its mature onshore fields, and possibly polymer injection with waterflood in the offshore fields.

Iran has managed to engage a number of small local firms for these EOR-IOR endeavours and secondary recovery techniques. The more advanced tertiary techniques of its neighbours cannot be realised yet without requisite technology and expertise. Iran has significant potential for CO<sub>2</sub> (and solar induced EOR to an extent) to recover oil from its maturing oil reservoirs, yet the NIOC's prime focus is on natural gas injection, which is somewhat of a catch-22, as it would find itself trying to mitigate the natural decline of its brownfields at the expense of profitable new markets. In 2014, studies for CO<sub>2</sub>-injection at the Ramin oilfield (part of Ab Teymour and Mansouri located around the super-giant Ahvaz oilfield) were concluded. CO<sub>2</sub> was to be captured from the Ramin Power Plant in Ahvaz and subsequently injected into Ramin after purification, but as of 2017, there has been no progress. The amount of CO<sub>2</sub> which is produced in power plants in the vicinity of oil fields with relatively short pipelines for CO<sub>2</sub> transport currently is expected to increase as overall power production increases by ~20% by 2022. Initiatives are also being discussed for the capture of CO<sub>2</sub> from petrochemical plants in the southern port city of Mahshahr that could then be transported for injection into the country's maturing southern oilfields.

Yet a lack of prominent EOR-IOR contracts, declining western investment, and increasing isolation fed in part by internal anti-reformist sentiment are likely to see Iran fail to capitalise on the alternate-EOR resources at its disposal anytime soon.

<sup>1</sup> Petroleum Economist

<sup>2</sup> Ghawar: The Anatomy Ghawar: The Anatomy of the World of the World 's Largest s Largest Oil Field Oil Field, Saudi Aramco



# MIDDLE EAST LNG IN PERSPECTIVE: THE UAE'S GROWING LNG IMPORT APPETITE

Lennart Luten • LNG Specialist



We are midway through 2018 and the market seems to have turned a page regarding the widely anticipated LNG supply glut. It seems that notably China's appetite for LNG has been robust enough to absorb new volume additions, which has provided support for LNG spot prices. The recent oil price increase too has had its effect on LNG pricing and so there is no sign of sub-5 USD/MMBtu LNG cargoes in this market, yet. However, in the coming years, more liquefaction capacity will come online, and freshly minted and emerging importers such as Pakistan, Bangladesh, India and Lebanon and Sudan respectively will need to step up their intake of LNG to help balance the supply-demand equation. FSRU-based LNG import projects continue to be the flavour of the day, with new developments and prospects in Australia, Kenya, India, Libya, the Philippines, Ghana, Brazil, Saudi Arabia, the UAE and various other countries.

The Middle East remains an important centre of gravity for LNG supply, and indeed Qatar is pushing ahead with its plan to expand the current 77-Mtpa export capacity to 100 Mtpa by 2024, which at that point in time will account for around 22% of market share. The UAE, with Abu Dhabi as its anchor LNG exporter, faces new challenges and opportunities. Abu Dhabi's long-term LNG supply arrangement with JERA expires in 2019 and, in all likelihood, ADNOC will seek a partial contract extension whilst exploring alternative supply opportunities for a significant part of its export capacity as the sovereign strategizes for the future.

From an import perspective, all eyes continue to be on the Sharjah LNG import project, where a Final Investment Decision (FID) may slip into late-2018, possibly early-2019, as SNOC and Uniper try to smoothen out challenges related to the project's technical configuration, gas demand and off-take commitments, creditworthiness, and inter-Emirate gas supply dynamics. The project sponsors have released tenders for the EPC and FSRU elements of the project, which have reportedly attracted quite a bit of attention, though no binding contracts have been signed to date.

The Mubadala-backed Emirates LNG venture was officially disbanded in March of this year, bringing an end to what has essentially been a 5-year long attempt at developing an LNG import terminal initially for Fujairah, and later Ras al-Khaimah. As Abu Dhabi plans for the future, it is not unthinkable that its LNG terminal development ambitions will be revitalized. ADNOC has an aging LNG carrier fleet at its disposal, and is contemplating alternative utilization and diversification options. Indeed, the presence of synergistic opportunities, such as the Sharjah LNG import project, may tempt a foray into the floating storage and regasification unit (FSRU) business. The recently signed JV between Qatar's Nakilat and Excelerate Energy aimed at co-ownership of FSRUs may be the first in a line of partnering initiatives, and it is reported that various FSRU providers have explored similar opportunities with Abu Dhabi.

Meanwhile, the FSRU in Ruwais has reportedly received 4 cargoes to date since it started commercial operations, back in 2016. It is a common misconception that the Ruwais LNG Terminal was put in place as backup against the prospect of gas supply curtailments by Qatar through the Dolphin gas pipeline. The LNG import project was conceived well before Saudi Arabia, the UAE and other Arab countries fell out with Qatar.

Now that the terminal is there, it arguably serves as welcome insurance policy. Dubai's FSRU-based LNG import project operates at a significantly higher rate than Ruwais, and DUSUP regularly imports cargoes not only for immediate CCGT consumption but also to be pumped into the Margham gas storage facilities for use at a later stage.

Our next article will look at LNG import activities and developments in Kuwait, Jordan, Saudi Arabia, Sudan and Lebanon, which all harbour the potential for significant in-take of LNG in years ahead.

# ARABIA MONITOR ENERGY:

A Collaboration Between  
Arabia Monitor & Qamar Energy



## ARABIA MONITOR ENERGY

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

## WHAT SETS IT APART?

### 1. INSIDE OPEC

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

### 2. NOC & IOC ANALYSES

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

### 3. SPOTLIGHT THIS MONTH

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

### 4. SCENARIOS TO WATCH

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

### 5. STRATEGIC IMPLICATIONS

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

### 6. OUTLOOK FOR THE YEAR

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



## WHO BENEFITS?

### ENERGY TRADERS

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

### INVESTMENT AND RISK ANALYSIS

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

### UPSTREAM FIRMS

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

### DOWNSTREAM FIRMS

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

### NATIONAL OIL COMPANIES

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

### ALTERNATIVE / RENEWABLE ENERGY ORGANISATIONS

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

## THE DELIVERABLES

### 8 MONTHLIES

- Oil Price Scorecard
- Headline Developments
- Spotlight this Month
- Scenarios to Watch
- Projects in the News
- Macro Dashboard for Oil Exporters/Importers
- Outlook for the year

### 4 QUARTERLIES

- MENA Map as per Political Grouping
- Map of New Licensing Rounds
- Political & Regional Security Issues
- Oil & Gas Prices Outlook
- Global Barriers to Oil & Gas Production
- Deep Dive into OPEC & NOPEC
- MENA Energy Investments
- MENA Energy Fiscal System
- MENA Energy Upstream Bidding map
- MENA Economic Outlook
- Probability Scorecard for Bearish & Bullish Oil Supply/Demand
- Investor Implication Scenarios (Under 3 Oil Price Dynamics)

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Qamar Energy provides leading-edge energy strategy, commercial and economic consulting across the energy spectrum.

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Arabia Monitor  
Economic Research and Strategy



# QAMAR SUPPLY CHAIN CONSULTANCY



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With a new period of dynamism across the energy sector, cost control, insight into expenditure, and added value from procurement beyond lowest-cost are essential to allow regional companies to stay competitive.

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OPERATIONAL COST REDUCTION

IMPROVING  
OPERATIONS/PRODUCTIVITY

MAXIMISING REVENUE

INCREASING SUPPLY NETWORK AGILITY

DEBOTTLENECKING SHORTCOMINGS



## WE TARGET

ENERGY MAJORS  
OIL & ENERGY TRADERS  
INTERNATIONAL OIL COMPANIES  
NATIONAL OIL COMPANIES  
UPSTREAM FIRMS  
DOWNSTREAM FIRMS

## WHY US?

ECONOMICAL OVERHEADS  
NO HIDDEN COSTS  
INHOUSE PROCUREMENT  
PAYMENTS LINKED TO RESULTS  
SPECIALISED MODELS  
EXECUTION ACROSS FULL STREAM



## OUR SERVICES



Qamar Supply Chain Consultancy streamlines the management of procurement and sourcing in the Middle East's energy sector to drive efficiencies and added value. Our extensive regional and global network spans every sector of the energy spectrum: upstream, midstream, and downstream.

We complete our diagnostic and recovery services in one full week, followed by a detailed value and costs assessment to strategise procurement and categorise spend. The final execution and implementation of our changes is always personalised to different needs, and can span a period of 4 to 12 months.



## OPEC WATCH

AVERAGE CRUDE PRODUCTION FOR JUNE 2018

# 32.33 Mbpd

## + 173.0 kbpd

From May 2018



### Non-OPEC Oil Supply

## 59.50 Mbpd



- 150 kbpd  
from May '18

### **Non-OPEC Crude Output**

United States  
Brazil  
Canada



### OPEC & Non-OPEC COMPLIANCE

- OPEC compliance stayed above 100% for June at 120%, despite Saudi Arabia, Iraq, UAE and Kuwait's increases in production due to fast declines in Angola and Venezuela, 410% and 765% compliance in June respectively.
- Angola is struggling with mature and declining production with a lack of investments, even as Total began production at the offshore Kaombo Norte which is expected to peak at 230 kbpd.
- Non-OPEC compliance stayed hovering just over 60%, mostly due to a production ramp-up from Russia, whose compliance was at its lowest in 20 months at 55%. Russia increased its production by around 100 kbpd in June from May.
- After Russia, among the FSU countries, Kazakhstan is expected to lead output growth in 2018. OPEC and IEA forecast the country's production to increase by 11 kbpd in 2018. Oman's compliance in June increased by 2% to average 93%, as it tries to maintain its 1 Mbpd production target (~974 kbpd in June).

### NEXT OPEC MEETING: 03.12.2018

175<sup>th</sup> (Ordinary) OPEC Meeting in Vienna, Austria

### LATEST ORGANISATIONAL CHANGES

- At the 174<sup>th</sup> Ordinary OPEC meeting on June 22 in Vienna, OPEC members decided to maintain 100% compliance, down from 162% for May, which equals a 750 kbpd increase in production. Non-OPEC members can increase production by 250 kbpd.
- The agreement is slated to stay in force till the 175<sup>th</sup> Ordinary OPEC meeting in December.
- Congo joined OPEC on June 22 in line with its ambition of becoming sub-Saharan Africa's 3<sup>rd</sup> largest producer with a 350 kbpd target for this year. Potential of other African countries to join. Chad?

### OPEC PRODUCTION

- Libya's production fell by over 400 kbpd in June, due to ongoing militia clashes between the PFG and LNA. Nigeria's production gained by 28 kbpd in June, but remained below its 1.8 Mbpd cap (~1.67 Mbpd).
- Iraq's production witnessed a rise of 72 kbpd in May, and reached 4.53 Mbpd mainly due to increased output at West Qurna-1 and Zubair in the south.
- Saudi Arabia's production gained by ~406 kbpd as opens taps on its 2 Mbpd spare capacity after OPEC relaxed production cuts on June 22.
- Algeria's production grew by ~5 kbpd in June after oil field maintenance work was completed, bringing its compliance down to 100% from a yearly average of 150%. The country's production is in overall decline since 2007 due to geological complexities at its maturing fields.
- Iran's production declined by 22.7 kbpd in June mainly due to Asian and European traders and refineries cutting imports.

# KEY MENA ENERGY SCORECARD

JUNE 2018

## QATAR CRISIS

Riyadh announced it plans to construct the 60 km Salwa Marine Canal through its land border with Qatar to accommodate a nuclear waste dump and military base, signalling continuing discord between both countries; Qatar Petroleum is the majority owner of the Golden Pass LNG terminal in Texas, with ExxonMobil and ConocoPhillips holding smaller stakes, and expects an FID by end-2018; Qatar may also invest in Exxon's Mozambique venture to jointly market LNG and signed an agreement with the US major on June 03 to acquire a 30% stake in two of Exxon's affiliates in Argentina, marking its entry in Latin America; Qatar is seeking proposals for the development of a 1.6 Mtpa Petrochemicals Complex at Ras Laffan Industrial City, which will include the region's largest ethane cracker.



## FEDERAL IRAQ DEVELOPMENTS

Protests have not impacted the energy sector in Iraq and the Ministry of Oil will conduct another bid round after a new government is formed to auction the 5 blocks left unawarded in Bid Round-5; Eni lifted production at Zubair by 40 kbpd to reach 475 kbpd and plans to increase production by ~60% to 700 kbpd by 2022, the biggest planned gain among all Iraqi oil fields; Exxon increased production at West Qurna-1 by 40 kbpd and crossed its 500 kbpd target for 2018; production has started at Iraq's first commercial gas field Siba and will output 50 Mscf/d in three months, up to 100 Mscf/d by end-2018; Subba oilfield may be shut down next month due to continuing technical problems at the field and high levels of hydrogen sulphide in its crude; Exxon officially exited the CSSP on June 02.



## MENA ENERGY PRICE REFORM

UAE will gradually scrap subsidies on electricity and gas sold to power generators to reflect 'real' prices by 2030; On May 27 the Bahrain High Administrative Appeals Court dismissed the Council of Ministers' complaint to rethink a fuel prices hike, allowing the Ministry of Oil & Gas to raise fuel prices from September 2018; On June 16 Egypt announced increases in fuel as a part of its \$12 B IMF loan; M92 and M95 gasoline saw a hike of ~36% and 16.2% and electricity and water prices rose by 26% and 5% respectively. Saudi Arabia introduced the Citizen's Account Program, a cash handout scheme for low-income Saudi citizens impacted by rising fuel prices, electricity tariffs, and VAT.



## MENA NUCLEAR POWER

Saudi Arabia is assessing two potential sites – Umm Huwayd and Khor Duweihin – for its first nuclear power plant project near UAE and Qatari borders and has shortlisted Rosatom and KEPCO; tendering will face delays likely due to technical plans, and commercially due to negotiating nuclear agreement with the US; Egypt and Rosatom signed contract to develop \$21B Dabba nuclear plant, which is expected to come online by 2020-2021; The UAE's Barakah plant will begin loading fuel in 2019 (delayed from May 2018), and the plant will now generate electricity only by 2020 due to delayed operational readiness; overall completion is at 89% (Unit 1: 100%, Unit 2: 93%, Unit 3: 83%, Unit 4: 72%); Jordan has called off its plans of constructing a 2000 MW nuclear power plant due to lack of funding and will instead focus on smaller reactors.



No Change ⇄ ● Very Positive  
Deterioration in the last month ↓ ● Positive  
Improvement in the last month ↑ ● Negative  
● Very Negative

# KEY MENA ENERGY SCORECARD

JUNE 2018

## ENERGY INFRASTRUCTURE SECURITY

On June 17 the Petroleum Facilities Guard took over Libya's Es-Sider and Ras Lanuf ports, instigating an immediate counter attack by the Libyan National Army; two oil depots were set on fire, which will take years and extensive costs to repair causing Libya's production to fall by ~450 kb/d; On June 21, the LNA declared the Holy Invasion Operation and retook the terminals from the PFG and handed them to the illegitimate Eastern NOC to assert his power; however LNA leader Khalifa Haftar handed control of the terminals back to the Tripoli-NOC on July 10 after increasing pressure from the EU and US; the situation remains precarious.



## KUWAIT DEVELOPMENTS

Kuwait Energy has decided to sell some/all of its Block-9 Iraqi assets to gain much-needed liquidity for the company's shareholders and a cash buffer to repay its debt; Kuwait is also exporting 1000 tonnes of diesel and 17 mobile power generators to Iraq "free of charge" as Baghdad struggles to meet protestors' demands; KOC is planning to launch an Integrated Drilling Services tender for 29 Jurassic wells; Kuwait is also expanding refinery capacity with a 615 kbpd facility under construction at al-Zour, with two new refinery ventures underway in Vietnam (which was said to have begun operations end-February) and Duqm (to be launched mid-2018).



No Change ↔ Very Positive  
Deterioration in the last month ⇩ Positive  
Improvement in the last month ⇧ Negative  
Very Negative

## IRAN DEVELOPMENTS

US sanctions will come into effect on November 04; EU refiners have begun cutting credit lines to avoid exclusion from the US financial system and have cut purchases by 36%; India has said that it will continue to import crude from Iran since it "only follows sanctions by the United Nations and not by any specific country"; On July 11 Total exited the South Pars Phase-11 project saying it was "impossible" to operate in the country without access to the US financial system; Production from West Karoun fields has increased marginally in June, after Phase-1 of the North Azadegan, Yadavaran and North Yaran oilfields project was inaugurated by the Petroleum Engineering and Development Company (PEDEC); PEDEC will establish an integrated system for the transfer of light and heavy crude oil from the fields.



## ABU DHABI DEVELOPMENTS

ADNOC awarded BGC, a subsidiary of CNPC, a \$1.6 B contract for conducting a continuous 3D seismic onshore and offshore survey covering an area up to 53,000 km<sup>2</sup>; ADNOC and CNPC awarded an EPCC contract to the National Petroleum Construction Company (NPCC) for the development of Al Yasat offshore concession, expected to come online this year; ADNOC and CNPC may also develop a technology hub supporting transfer of knowledge and technology related to Al Yasat; ADNOC is setting up a new crude oil and refined products trading unit to deviate from its FOB-selling model and expand its downstream sector; ADNOC also signed an oil spill management contract with Abu Dhabi Ports on July 07 to "ensure safety" of the environment.





# KEY MENA ENERGY SCORECARD

JUNE 2018

## MENA RENEWABLE ENERGY

ACWA Power has signed a contract with Shanghai Electric for the 700MW Phase-4 of the Mohammed bin Rashid Al Maktoum Solar Park in Dubai which entered Phase-3 on May 1 and began generating 200MW of clean energy; Oman has received 28 bids for its 500 MW Ibri solar PV plant including Lightsource BP, ACWA Power, NTPC, and Marubeni Corporation; Lightsource BP is also bidding for an EPC for the 100 MW solar project of Petroleum Development Oman; Oman is also planning 6 new solar and wind projects that will deliver 2650 MW by 2024; ACWA Power launched the 120MW Khalladi wind farm in Tangier on July 02 which will help Morocco achieve its 2020 target of increasing the renewables energy component of its energy mix to 42%; ACWA Power is also in the process of putting finishing touches on the 2<sup>nd</sup> and 4<sup>th</sup> stations of the giant Noor Ouarzazate Solar Power Complex, which will become fully operational “in the coming days”;

## MEDITERRANEAN GAS COMMERCIALISATION

ENI has come up dry at its Rabat Deep 1 (RD-1) well offshore Morocco, having encountered tight, fractured carbonates at a depth of 3180m; the company agreed to develop a gas pipeline in southern Algeria, to link Eni's two producing oilfields in the Berkine basin, Lajmat Bir Roud and Menzel Lejmat, and enable a surplus of 7 Mcm/d of production; London-based SDX Energy announced a new gas deposit in Egypt's South Disouq region, which holds 89 feet of net conventional natural gas pay in the Abu Madi horizon; production is expected to start by end-2018; Egypt will hold an international bid round for 27 concession areas by October 2018, including 16 concessions by EGAS and 11 EGPC; Turkey is planning to send a drilling ship to offshore Cyprus to deter ExxonMobil from surveying the area, after it sent warships to deter Eni from drilling in February; Tarek el-Molla has announced that the Zohr concession will produce up to 1.2 Bcf/d of gas by August 2018, up from the current 350 MMcf/d, and will reach 2.7 Bcf/d by end-2019.



No Change ↔ Very Positive  
Deterioration in the last month ↘ Positive  
Improvement in the last month ↗ Negative  
Very Negative





## ABOUT US

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

### ROBIN MILLS • CEO

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



### RECENT APPEARANCES & TALKS



**Iraq Capital Club, Dubai, June 2018 • Speech on Iraq's Oil and Economic Outlook**



**ADNOC Downstream Investment Forum 2018, Abu Dhabi • Site visit to Ruwais Petrochemical Complex**



**Iraq Energy Forum 2018, Baghdad • Presentation on Iraq's Solar Energy Potential**

### QAMAR NEWSLETTER ARCHIVES

[October 2017](#) • [December 2017](#) • [January 2018](#) • [February 2018](#) • [March 2018](#) • [April 2018](#) • [May 2018](#) • [June 2018](#)



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