# THE QAMAR NEWSLETTER

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The world has its eyes on Saudi Arabia and Russia as the cartel mulls over the future of its production cuts. Cover story by Robin Mills.

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## INSIDE: MENA ENERGY REVIEW



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.

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# OIL BEYOND 2018: WHAT LIES AHEAD FOR 'SUPER OPEC'

Robin Mills • *A version of this article appeared in The National, Feb. 26, '18* • **COVER STORY**

In an exclusive interview with The National a week ago, UAE energy minister Suhail Al Mazrouei, who currently presides over OPEC, said that plans to formulate an "OPEC super group" are in the works. The new group would aim at longer-term cooperation with the 24-member "Vienna group" of OPEC countries and allies, beyond the expiry of their production cut deal at the end of 2018.

If efforts succeed and such a group is indeed formalised, what should it do?

The current grouping includes the OPEC countries plus Russia, Oman, Mexico, Kazakhstan and some smaller oil producers. Since their December 2016 accord, they have agreed to limit their oil production to reduce over-stocked inventories, an implicit effort to raise oil prices that had languished since the mid-2014 crash. The progress was frustratingly slow at first, but most countries have complied closely with their targets and, helped by strong demand in the second half of last year, crude prices have indeed risen and inventories are falling closer to the group's target levels.

The deal to curb output is set to expire at the end of 2018. However, Mr Al Mazrouei and the deal's other two leading lights, Saudi energy minister Khalid Al Falih and his Russian counterpart Alexander Novak, have increasingly talked of a framework for future cooperation.

This super-OPEC faces essentially four challenges:

Firstly, it needs to wind down the current deal before a damaging spike in prices, but without a disorderly exit that would lead to a new price crash. As Reuters analyst John Kemp observes, OPEC has historically failed to do this well, usually acting too late and setting off a new boom-and-bust cycle.

Secondly, the group has to avoid encouraging too much competing production, particularly North American shale but also from Brazilian deep-water, and the possibility of the shale revolution spreading into other countries such as Argentina.

Thirdly, it has to guard against competition within its own ranks. Iraq has the most tangible and realistic plans for major production expansion, and has already been one of the least compliant of the deal's members. But Iran, Russia, the UAE, Kuwait, Kazakhstan and Mexico all have their own plans for growth. Of course, new production will be needed to meet growing demand and compensate for declines elsewhere, but this means some members will lose market share to their peers.

Fourthly, the long-term outlook for oil demand is uncertain, due to growing efficiency, maturing demographics in some key markets, environmental pressures and the rise of electric vehicles. Demand will keep growing for now, but with many forecasters seeing a peak in the 2030s or 2040s, the super-OPEC may at some point have to manage competition between its members over a shrinking or at least stagnant market.

The International Energy Agency (IEA), representative of the wealthy OECD countries, has not been standing still either. India and China, the two most important countries for future demand growth, have become associates of the IEA, and last Monday, Mexico became a full member – putting it in the anomalous position of being a member both of the Vienna-OPEC pact and the IEA.

Faced with these pressures, some OPEC members might chose to expand production more rapidly, hoping to make up on volume what they lose on price, forestall other competitors and ensure that they produce as much as possible from their resources before demand dries up.

Others might decide to expand production only gradually, to keep prices relatively high but accept a shrinking market share. And yet others, such as Venezuela, Algeria or Ecuador, would find that they are not able to play either game – because of domestic political instability, a lack of resources or high production costs.

So the super-OPEC's most important task would be to manage these tensions.

The key is Russia: no other really large producers, such as Brazil, are likely to join, and the inclusion of smaller producers, mostly from Africa, does not help the framework much. They add to complexities, slow down the decision-making process, and their cooperation makes little difference to overall production. If one of them should be lucky to make a large discovery, it will probably exit the pact or at least cease complying.

Some of the second-tier producers, such as Oman and Azerbaijan, which each have output a little under 1 million barrels per day, could become members without affecting the group's strategic balance or politics very much.

But Russia is a completely different beast. Its oil output is about equal to that of the US and Saudi Arabia as the world's three biggest producers. It is also the world's largest gas exporter by a long way, with exports twice that of second-placed Qatar.

Though its economy is rather moribund, its GDP is still twice that of the largest OPEC member, Saudi Arabia. It is a nuclear-armed power with a permanent UN Security Council seat, which can exert control through diplomatic and military channels, not just through the functioning of the oil market. It was invaluable in roping Iran and some former Soviet countries into the Vienna deal.

Cooperation with Russia is essential if the super-OPEC is to have enough power and market share to execute a meaningful strategy. But Russia's interests extend beyond just oil. As in the popular fake photo of Vladimir Putin riding a bear, OPEC may find that it is easier to get on than to dismount.

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## INDIA'S STAKE IN ABU DHABI'S LOWER ZAKUM TICKS BOXES FOR BOTH SIDES

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

Following a spate of recent agreements, only one of the four giant Asian energy consumers remained outside Abu Dhabi's oil sector.

Now, the visit of Prime Minister Narendra Modi has brought the signature of a consortium of Indian oil companies for a stake in the offshore Lower Zakum oilfield. With China, Japan and South Korea already on board, the shape of the emirate's future oil relations is almost complete.

The Indian group, ONGC Videsh, Bharat PetroResources and Indian Oil, all state-controlled, will pay $600 million for 10 per cent of the Lower Zakum field. The old Abu Dhabi Marine Areas concession, which expires in March, grouped ADNOC (60 per cent), BP (14.67 per cent), Total (13.33 per cent) and Inpex of Japan (12 per cent). Now it has been split into three parts: Lower Zakum, which produces 360,000 barrels per day and is set to increase to 450,000 bpd by 2025; Umm Shaif and Nasr; and Satah Al Razboot and Umm Al Lulu.

ADNOC will retain 60 per cent in each concession, meaning that 30 per cent of Lower Zakum, 20 per cent in the Satah Al Razboot-Umm Lulu unit and 40 per cent of Umm Shaif and Nasr fields, is still up for grabs. Total and Inpex are likely to receive an interest in some part, with BP's future more doubtful, and China National Petroleum Corporation (CNPC) also interested. During 2012-15, new and renewed concessions onshore and offshore brought in Total, Inpex, BP, CNPC and other Chinese and Korean firms, alongside ExxonMobil's renewal, while Shell departed.

On Sunday, Spanish oil company CEPSA, wholly-owned by Mubadala Investment Company, was awarded 20 per cent of the Satah Al Razboot-Umm Lulu unit.

These deals have sealed the involvement of three of the major Asian oil consumers, helping to cement Abu Dhabi's relationships with its customers. The role of western international oil companies has diminished, but they are still present, bringing their technological capabilities and worldwide operational expertise. But it has been essential for ADNOC and Abu Dhabi to have closer relations with India.

When Sheikh Shakhbut signed the original ADMA concession agreement with a forerunner of BP in March 1953, the British Queen Elizabeth had not even been crowned. The new concession will run for 40 years, almost to the middle of this century. By then, India is expected to have overtaken the US as the world's second-largest economy behind China, adjusted for purchasing power. A population of 1.3 billion will have grown to 1.7 billion, making it the world's most populous country. This will be accompanied by important shifts in the balance of power in the circum-Indian Ocean region.

BP forecasts that India's oil demand will rise from 4.1 million barrels per day today to 9.2 million bpd by 2035, more than the entire EU will consume. 8.3 million bpd of this will be imported, making the country the world's biggest importer after China. Currently, India gets 8 per cent of its oil from the UAE, behind Iraq and Saudi Arabia.

Narendra Taneja, energy adviser to Mr Modi, said in January that India would also seek to double the share of gas in its energy mix, and boost its imports of liquefied natural gas.

Conversely, US net imports are set to continue falling because of its shale production boom, and European and Japanese consumption will drop with improved energy efficiency, new non-oil technologies and ageing populations.

Uncertainty over the future role of the US, increasingly less reliant on Arabian Gulf oil and less inclined to shoulder what it perceives as overseas burdens, means the UAE has sought to diversify its relations. India has been attractive: it is western-friendly and so less worrying to the US than a sharp tilt towards Russia or China would be. Just a couple of days' sail away, it is the Middle East's natural market. Indo-Emirati historic, cultural and personal links are deeper and go back further than those with East Asia.

But so far, Indian state oil companies' overseas expansion has been much less successful than their main Asian competitors'. Like the Chinese firms, they went out in the early 2000s seeking to "secure" India's future energy needs by taking stakes in overseas oilfields, although this is unnecessary when oil is freely available in the world market.

ONGC has done relatively well in Sudan, but its 2008 acquisition of Imperial Energy, a company active in Russia, came at the peak of the market. Projected output of 35,000 barrels per day has in fact fallen to just 1,200 bpd. After long negotiations for gas fields in Iran, the consortium of ONGC, Indian Oil Corporation and Oil India seems to have reached an impasse. And, unlike the Chinese firms, the Indian state companies have not acquired any assets in Iraq, while ONGC lost control of its assets in Syria following the outbreak of the civil war.

To remedy this weakness, the Indian government has been trying to build up a national champion. ONGC is in the process of merging with its state-controlled compatriot Hindustan Petroleum. Indian Oil might combine with Oil India Limited and/or GAIL, the state gas distributor. Investors responded well to the news from Abu Dhabi, with ONGC's shares rising 4 per cent.

The concession award to the ONGC-led consortium ticks some key boxes for both countries. With only a few more assets left to decide for decades-long periods, Abu Dhabi has to choose and balance carefully. And India needs to use this win to build a Middle East position commensurate with its energy weight.

## IRAQ'S OIL INDUSTRY IS ON THE MEND

Robin Mills • *A version of this article appeared in The National, Feb. 11, '18*

Iraq's problems in recent years have been so dramatic as to obscure all else: the war against ISIL, the Kurdish struggle for independence, and a severe budget squeeze. Yet among all this, since 2011 and the Libyan revolution, Iraqi oil output has gained more than any country besides the US. The excellence of the country's geology, the contribution of international oil companies, and gradual gains in national capabilities, have managed to outweigh insecurity, bureaucracy, corruption and logistics.

From 2011 to 2016, Iraq's output rose by almost 1.7 million barrels per day and it became the second-largest producer in OPEC, and the fourth-largest in the world. It is still far short of 2009's dreams of reaching 12 million barrels per day by now, and a long way behind Saudi Arabia's 10 million bpd, but it has growing weight within the organisation. The International Energy Agency sees it growing another 0.7 million bpd by 2022, the biggest gain within OPEC.

Iraq's southern oil exports reached a record in January. According to OPEC's secondary sources, Iraqi production was at 4.405 million barrels per day in December, somewhat above its OPEC target of 4.351 million bpd – it has been the least compliant country to the agreed cuts.

Continuing field developments could add another 270,000 bpd of capacity this year, mostly from the Halfaya field operated by Malaysia's Petronas. Kuwait Energy, in partnership with ENOC subsidiary Dragon Oil, is hoping to double production at its Faihaa field to 30,000 bpd. Iraq's 2018 budget seems to expect exports to gain about 100,000 bpd on last year, putting further strain on the OPEC deal.

But Baghdad's plans suffered a significant blow when Shell and Petronas withdrew from the giant Majnoon field, part of a complex that includes Faihaa and two giants in Iran, Azadegan and Yadavaran. They are not the first companies to leave big projects in Iraq because fiscal terms were too tight and inflexible. Majnoon, whose 220,000 bpd output was supposed to reach 420,000 bpd by 2020, is a vital part of anticipated production growth.

In the longer term, Baghdad is hoping to boost output further from other fields under current development by international oil companies. A revised contract model, still under discussion, needs to sweeten the deal for newly-offered exploration blocks along the Kuwaiti and Iranian borders. The bid deadline is just before the national elections on May 12.

Since the central government retook control of the important city and giant oil-fields of Kirkuk in October, its exports via Kurdish Regional Government territory have been cut off. If Kirkuk had access to export routes, another 280,000 bpd or so of production could return. Iraq has agreed to truck 30,000-60,000 bpd of Kirkuk crude for refining in Iran, but really unlocking it will depend either on rebuilding the pipeline to Turkey destroyed by ISIL, which would take a couple of years, or reaching a deal with the Kurds. BP, which was part of the consortium that discovered the field back in 1927, recently signed a preliminary deal to restore the Kirkuk area's production to 700,000 bpd.

Baghdad has plenty of leverage with Erbil, given the autonomous Kurdish region's debt crisis: it has no way of repaying the $22 billion it owes to a number of creditors, of investing further in boosting its own production, and of paying government salaries and social benefits. The federal government is demanding control over the Khurmala field, the northern end of Kirkuk, operated by the Kurds since 2009, which yields a third of the Kurdistan region's remaining output.

The elections will reshuffle the pack again. Current Prime Minister Haider Al Abadi gained great credit for defeating ISIL and even more in the Arab parts of Iraq for regaining territory from the Kurdish authorities. But he was then embarrassed when an electoral pact with militias close to Iran immediately fell apart, while his predecessor Nouri Al Maliki is angling for a comeback. Possible violence around election time, followed by protracted coalition-building and political manoeuvring after it, will delay the next phase of oil projects.

With some optimistic assumptions, the World Bank sees Iraq's budget deficit falling next year, but this excludes any of the gigantic rebuilding costs for the areas liberated from ISIL. Mr Al Abadi has put reconstruction needs at $100 billion, but it appears that the US will not make any financial contributions at a conference held in Kuwait this week.

Once again, it will be up to the oil sector to shoulder the burden. The draft budget has a $19bn deficit, almost 11 per cent of GDP, which will come down a little allowing for higher oil prices, but continuing OPEC limits on output. Bringing back Kirkuk and boosting production elsewhere as planned would virtually eliminate the deficit – but cannot be done without blowing the OPEC deal apart and likely bringing down prices.

This tension can only be managed, not resolved. The country's corruption, mismanagement and conflicts slow progress, but still advance is apparent. Iraq needs a long-term vision for where its oil sector is going; the rest of OPEC needs a plan for how to respond.

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# CALYPSO COULD RESURRECT CYPRUS' ENERGY SECTOR

Robin Mills • *A version of this article appeared in The National, Feb. 04, '18*

The tale of East Mediterranean gas has the twists and turns of a Greek legend.

The latest drama brings rumours of a large gas discovery off Cyprus. Named after the nymph who detained the hero Odysseus for seven years, the Calypso field may in fact have the magic to release the Cypriot gas industry.

In 2011, Noble Energy, which had conjured up the East Mediterranean gas rush with large finds in Israel, discovered the Aphrodite field off the eastern coast of Cyprus. Cypriot demand is minor at some 0.1 billion cubic feet daily, meaning that most of the production would have to be exported. But with 4.5 trillion cubic feet of gas, Aphrodite was too small to support an independent pipeline or a liquefied natural gas (LNG) facility.

Turkey, the most obvious nearby market, is inaccessible until the division of Cyprus is resolved, with the Turks backing the otherwise unrecognised state of northern Cyprus. Turkey has also sought to warn off companies from drilling around the island, firstly maintaining that the dispute, which dates to 1974, should be resolved first; and secondly claiming that its own maritime border takes a wide swathe of the sea to the west of Cyprus.

Interest in Cyprus languished until in 2015 Italian firm Eni found the giant Zohr field off Egypt, just south of Cypriot waters. Total and Eni drilled on the other side of the border in July and confirmed that the geology of Zohr did exist in Cyprus' sector, but found only a small quantity of gas.

Meanwhile Israel developed its fields for its own use, but has far more gas than it needs and has struggled to find export markets. It could not reach Turkey, since Lebanese and Syrian territory is barred to it. In any case, relations with Ankara have been rocky. Noble has begun sending limited amounts of gas from Israel to Jordan, but discussions over exports to Egypt have not led to a deal. The development of Zohr, which began producing in December, has reduced the urgency for Cairo, which hopes to eliminate its need for LNG imports this year.

BG, now owned by Shell, bought a stake in Aphrodite in 2015. It hoped to bring gas to its plant at Idku near Alexandria, which has been almost unused due to shortages of Egyptian gas, liquefy it and re-export it. But Eni would probably rather use Zohr's infrastructure to bring gas from other fields it owns to the Damietta LNG plant in which it and Zohr partner BP hold shares, rather than helping Noble and Shell.

This possibility was boosted in December. After years in a political labyrinth, Lebanon finally managed to award two offshore blocks to a consortium of Total, Eni and Russian firm Novatek, which hopes to drill next year. Israel described the tender as "very provocative", as the countries have a disputed maritime border, which one of the blocks adjoins. Without diplomatic relations, they cannot even negotiate a resolution. But Lebanon's good relations with Cyprus means that it could use the island as a hub if it makes a large discovery – or, if the Syrian civil war permits, it could build a pipeline to Turkey.

Calypso is rumoured to hold 6-8 trillion cubic feet of gas, according to the Middle East Economic Survey, itself based in Nicosia. The geology is said to be the same as Zohr, suggesting further big finds could be made in a broad swathe of deep sea between Egypt and Cyprus. Energy minister Yiorgos Lakkotrypis said on Friday that there were "encouraging indications", but the size of the find has not been officially announced yet, pending the result of the Cypriot elections on Sunday, which may be followed by further negotiations over re-unifying the island.

In December, Cyprus and Israel signed up to an EU-backed initiative to construct a €6 billion (Dh27.45bn), 2,000km undersea pipeline to carry 1.6 billion cubic feet of gas per day to Greece and Italy. Most observers have written this off as unfeasible. But if – a big if - it could be built for the estimated cost, it would have a delivery cost of some $1.5 per million British thermal units, cheap enough to be competitive in Europe and cheaper than building a new LNG plant in Cyprus or Israel. At least, it gives the supply countries additional leverage in negotiations with Egypt or Turkey.

Calypso and Aphrodite might just about be enough together to feed such a pipeline but, more likely, additional gas would be required from one of the four East Mediterranean countries. Eni is next going to sink a well off Cyprus's east coast, adjoining Lebanese waters. Given the iron logic of pipelines, whichever partnership and export route gets going first will likely set the pattern for the basin's development.

Between them, Eni and Total are strongly placed, with acreage in three of the four regional countries, and major discoveries in two of them. It is a tribute to their persistence in the face of challenging geology, some drilling disappointments, and convoluted politics. Calypso is still teasing us, but soon her secrets may be revealed.

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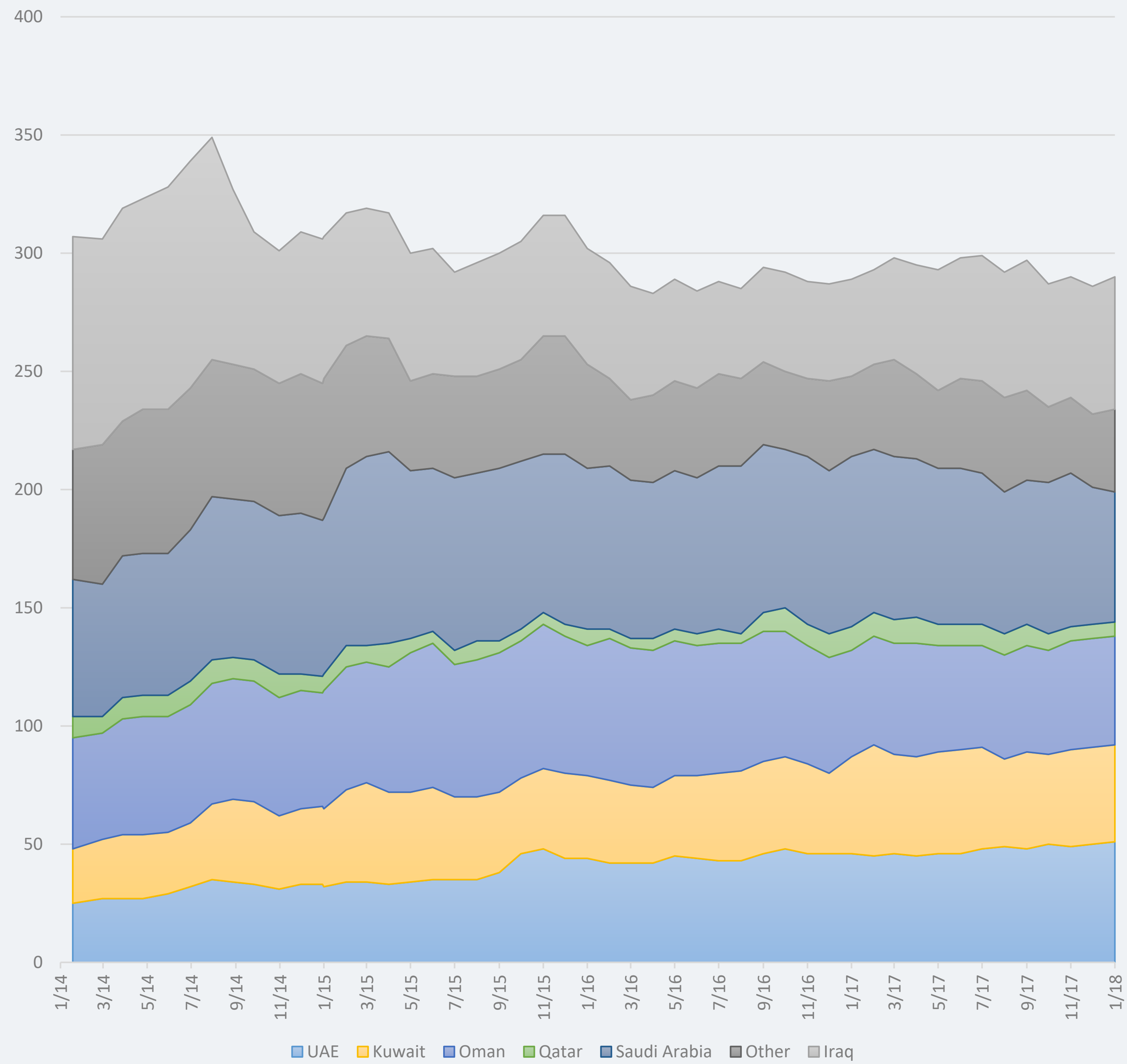
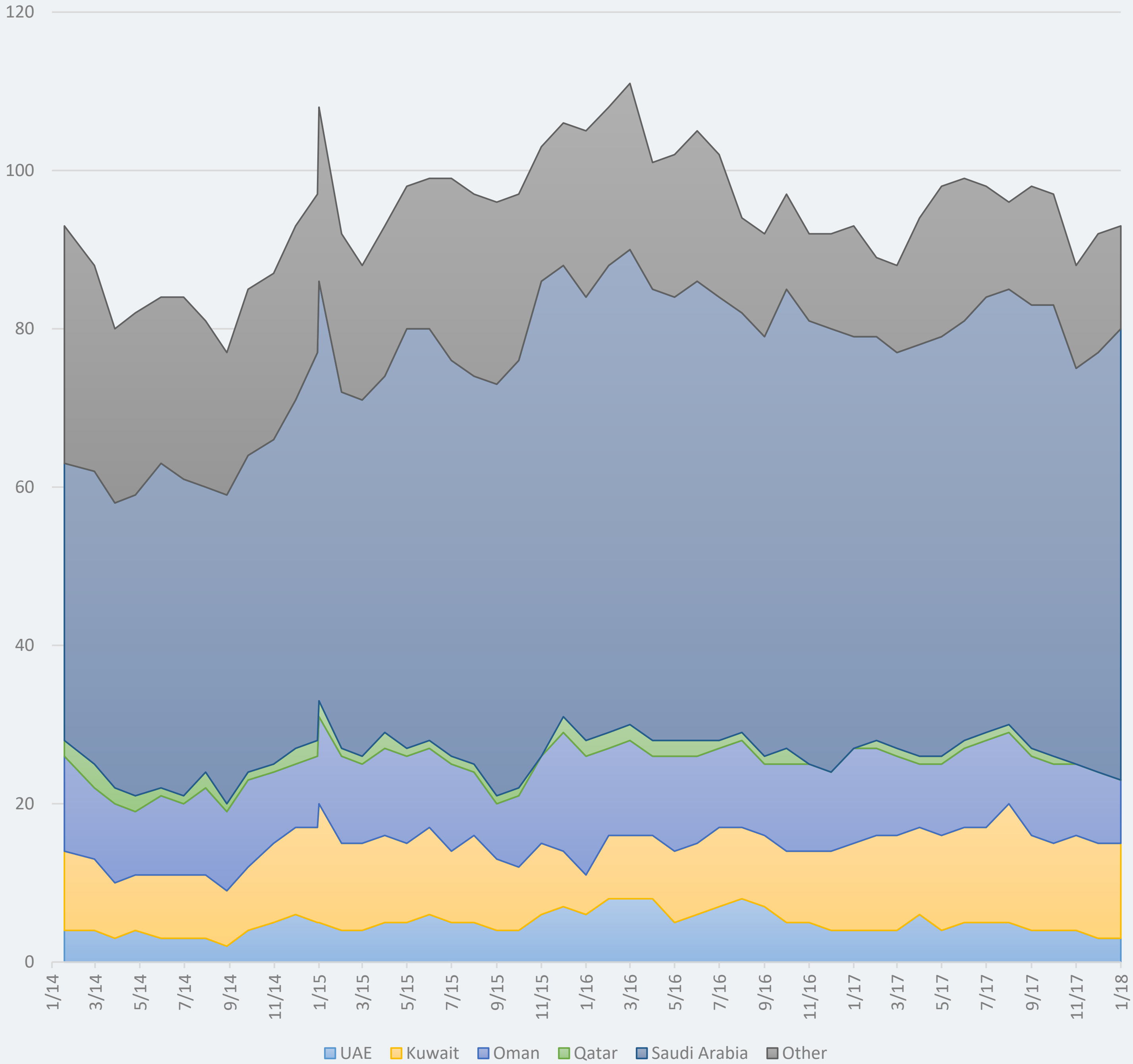
# RIG COUNT SNAPSHOT: **OIL**




- The Middle East's oil rig count in January increased by +4, excluding Iran.
- Iran 's rig count is not included in Baker Hughes; however, OPEC reports total (oil and gas) rig count in Iran increased by 2 in 2017 from the previous year.
- The GCC's rig count declined by 2 and drilling remained steady at near-record levels; Iraq witnessed an increase of +2 in January as Chevron announced the resumption of drilling operations in Kurdistan; Halfaya is undergoing expansion to double its output capacity in 2018 to 400 kbpd.
- Kuwait's rig counts stayed steady this month at 41 oil rigs since November 2017, while Saudi Arabia's count further fell by -3 in January, furthering speculations that the US will overtake the Kingdom in crude output early this year, but this is being challenged by the kingdom as it increased production in February by 23 kbpd.
- The Middle East's oil rig count averaged 293 in 2017, and has averaged 316 the last four years. The region's count increased by +4 in January.

**Source:** Baker Hughes

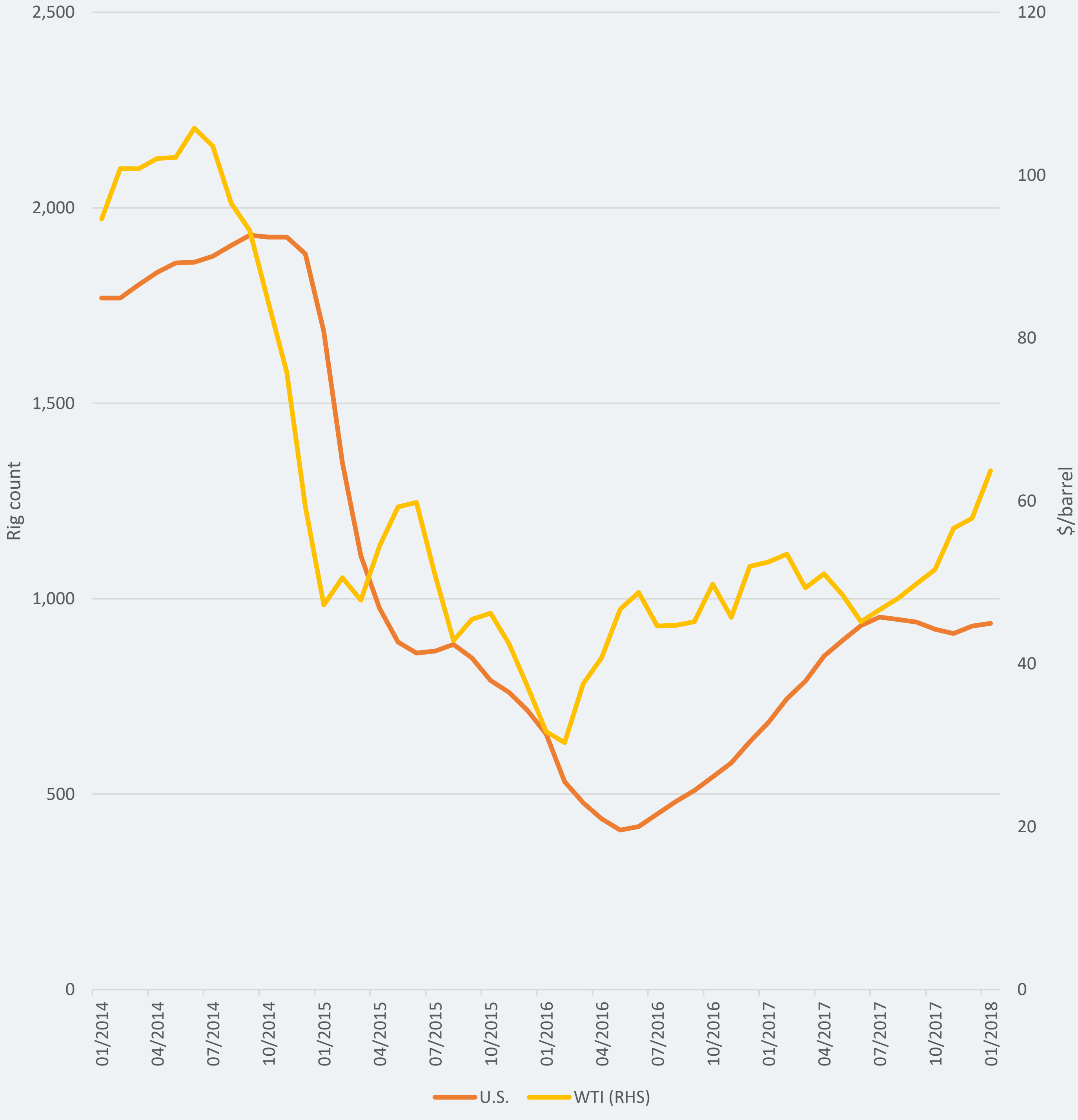
# RIG COUNT SNAPSHOT: **GAS**




- The Middle East's gas rig count averaged 94 in 2017. It highest level reach was in January 2014 at 123 gas rigs. Q4 2017 saw the Middle East's rig count fall by -6 from Q3 2017; January witnessed a rise of +1.
- Qatar's gas rig count has been at zero since November 2017, down from 1 rig in October.
- The UAE witnessed no change in its rig count from December; earlier this month ADNOC awarded FEED contracts for its offshore ultra-sour gas fields to ramp up domestic production, indicating a future increase in rig counts.
- Kuwait once again stayed steady since November 2017 with 12 gas rigs, from its year-high count of 15 in August 2017.
- Saudi Arabia continues to stay steady, averaging 53 rigs in 2017, and started the New Year with a rise of +4, due to higher production from Wasit, and plans to increase production from Midyan, Fadhil, and Turaif.

**Source:** Baker Hughes

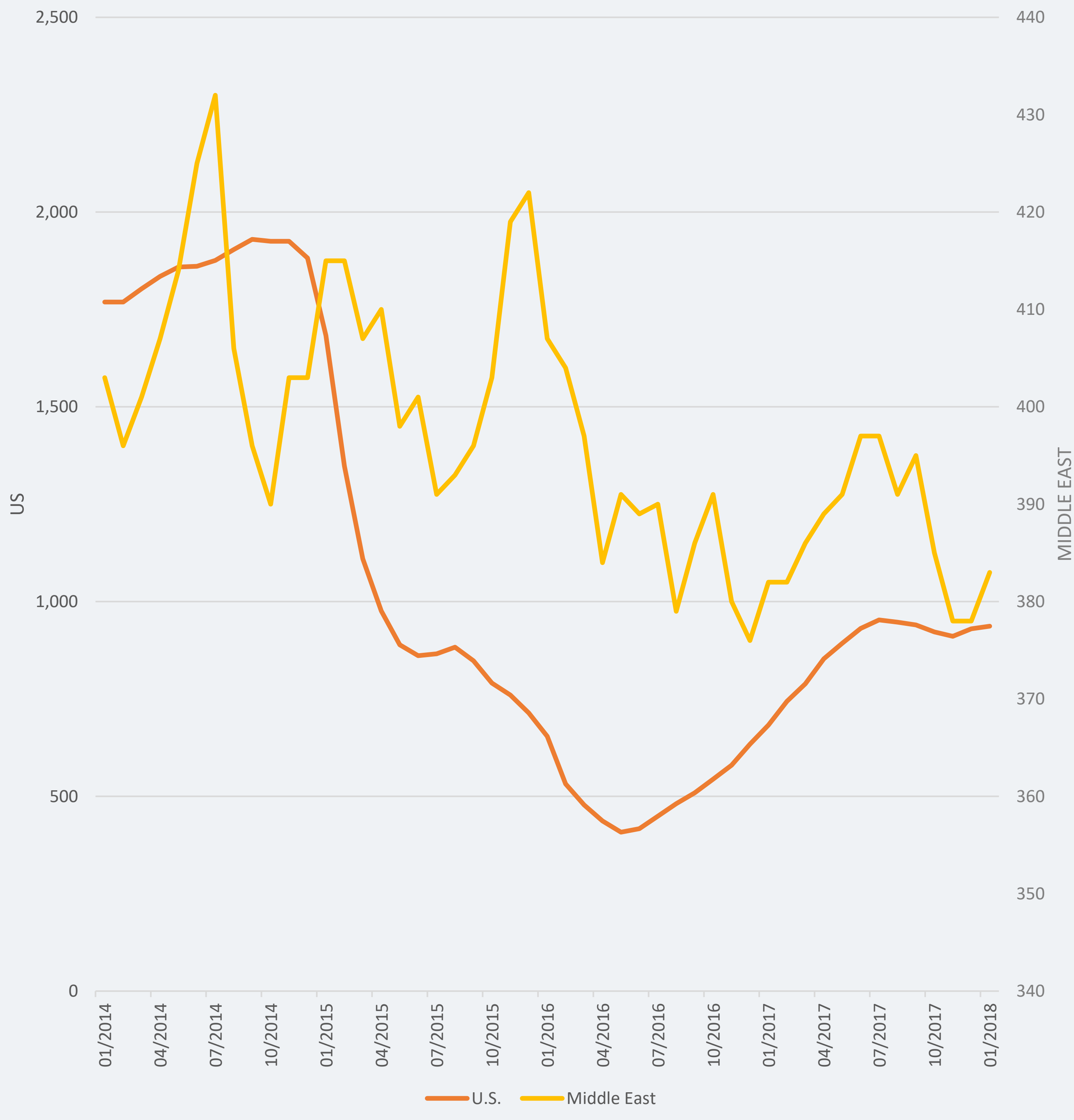
# RIGS VERSUS OIL PRICES: US RIGS & WTI




- US oil rig count jumped by 31.2% in February y-o-y, a rise of 190 rigs. The US is looking to take over Saudi Arabia in crude output this year.
- Total US rig count has been in decline since August due to producers trimming spending plans citing softer oil prices; however at 937 for January, it appears that the country has made a quick recovery and may pass 2017's high of 953 rigs within H1 2018.

**Source:** Baker Hughes, EIA

# RIG COUNT: US & MIDDLE EAST




- While the US' onshore rig count has surged over the course of 2017, the country witnessed a fall of -6 in its offshore count, owing mainly to Hurricane Harvey and other natural disasters earlier in the year. The US fell by an additional -1 in its offshore rig count last week.
- Total Middle East's rig count witnessed a rise of +5 in January, even as OPEC members continue to maintain relatively positive compliance rates, for example, Saudi Arabia has averaged 121% compliance in 2017.
- The region's rig count has averaged 392 for the last two years.

**Source:** Baker Hughes, EIA

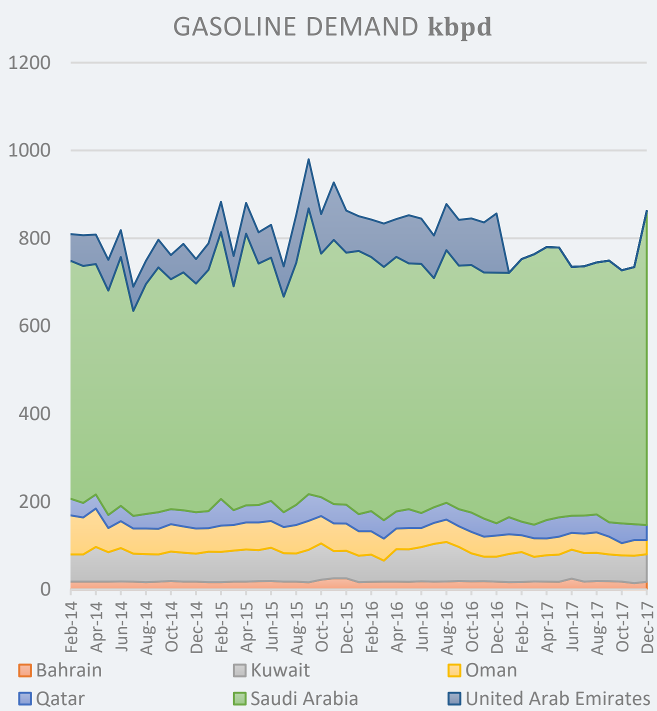
- The UAE was the first GCC country to remove fuel subsidies in August 2015; gasoline prices rose 6.1% in February. Fuel prices have been announced to be revised marginally downward in March.
- In Qatar, diesel prices for February increased by 88.8% from 2013, the highest ever since Qatar started pegging its fuel prices to the international market. In Saudi Arabia, gasoline prices have increased by 126% in the New Year, and diesel by 14%.
- 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 merely a day after it was approved, finding the change 'too sudden', especially for citizens with a limited income.
- In Oman, the Ministry of Oil & Gas increased the prices for Gasoline 91, 95 and diesel in February by 4%, 2.34%, and 6% respectively from January's fuel prices, raising concerns among local and expatriate consumers.

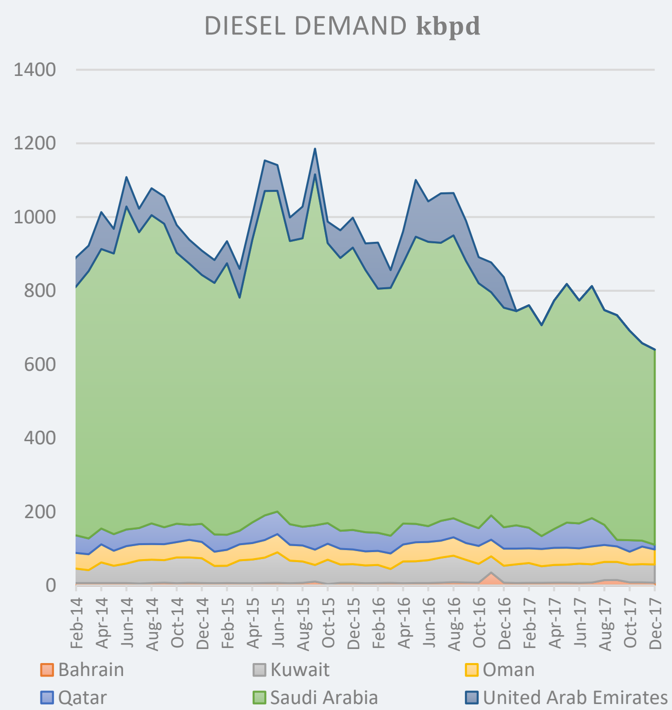
The following table represents the prices of gasoline 95 and diesel ($/litre) for February 2018 in the GCC countries.

| 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 | 0.61 | 0.68 |
| Qatar | 0.27 | 0.27 | 0.52 | 0.51 |
| Bahrain | 0.27 | 0.42 | 0.53 | 0.42 |
| Kuwait | 0.21 | 0.36 | 0.35 | 0.38 |
| Oman | 0.46 | 0.39 | 0.57 | 0.63 |
| US - PRE TAX | 0.52 | 0.57 | 0.58* | 0.66 |

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

**Source:** EIA, Qamar Energy




***Note:** UAE figures for 2017 are not available. Prior to 2017, UAE figures cover ADNOC sales only.*

**Source:** EIA, Qamar Energy

# A NEW HOPE: IRAQ OIL'S WAY FORWARD

*This is a **preview** of **Robin Mills's** report for the **Al Bayan Center**, published in February '18. To view the full version, follow the **link** under the excerpt.*

Iraq has been considering the development of several fields. The Nassiriya field has potential for 200 kbpd, and lengthy discussions have been held involving its development in combination with a local refinery of 300 kbpd. The Ministry of Oil has been in talks with ExxonMobil and PetroChina to develop Nassiriya as well as Luhais, Tuba, Nahr Bin Umr (currently 35 kbpd) and Ratawi (currently 17 kbpd), located around the giant southern fields, as a joint project including the common seawater supply facilities, oil pipelines and oil storage. These fields produced 237 kbpd in late 2015 and have a production target of 345 kbpd, though with combined reserves of about 15 billion barrels, they could easily produce 1 Mbpd or more. Other statements suggested a target of 550 kbpd for Nahr Bin Umr and Ratawi combined.

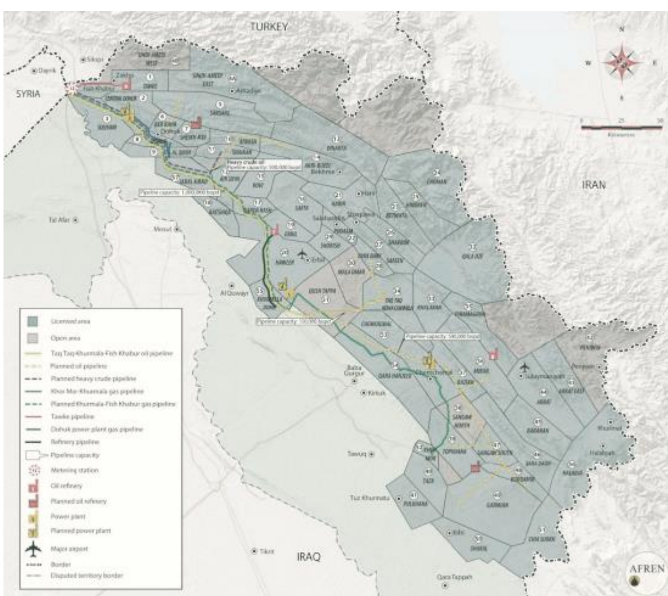
In October 2016 the Ministry of Oil also offered 12 small/medium-sized fields, though these discussions have not progressed. These fields are...

**Full Report**:

[A New Hope: Iraq Oil's Way Forward, *Robin Mills*, Al Bayan Center for Planning and Studies, February 2018]

# A ROCKY ROAD: KURDISH OIL & INDEPENDENCE

*This is a **preview** of **Robin Mills's** report for the **Iraq Energy Institute**, published in February '18. To view the full version, follow the **link** under the excerpt.*




When the KRG began serious development of its hydrocarbon resources from about 2005, both general and petroleum-specific infrastructure was very limited. Since then, it has undergone major development, to the point of being mostly sufficient for the energy industry's current needs albeit with some weaknesses. The figure on the left shows petroleum infrastructure in the KRI and the adjoining part of federal Iraq in about 2013-15. Not much has changed since then, given the hiatus in development imposed by the lack of budget and the conflict with ISIS.

The key items of KRG petroleum infrastructure are pipelines, processing plants, refineries and power plants. A gas pipeline was built from Khurmala to Dohuk in...

**Full Report**:

[A Rocky Road: Kurdish Oil & Independence, *Robin Mills*, Iraq Energy Institute, February 2018]

# ARABIA MONITOR ENERGY, WITH 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 Analysts:**

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

**Upstream Firms:**

- What are the chief economic, political and energy policy 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?

**Alternate/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*
*Deep Dive into NOPEC*
*MENA Energy Investments*
*MENA Energy Fiscal Systems*
*MENA Energy Upstream Bidding map*
*MENA Economic Outlook*
*Probability Scorecard for Bearish & Bullish Oil Supply/Demand*
*Investor Implication Scenarios*
*(Under 3 Oil Price Dynamics)*

**AME SAMPLE**

## Example 1 – Scenarios to Watch

***Renewed Oil Crisis***

**Timing:** 2021

**Event:** Rising demand and global production hampered by years of underinvestment, collide with a sudden crisis in a major oil-exporting country. Oil prices soar to over $120 per barrel, threatening Asian economies. China calls on its GCC partners to support it preferentially, while India, Japan and South Korea also claim their special relationships.

**Impact:** Higher oil prices would mean higher revenues enjoyed by the MENA exporting countries at the expense of its importers. In the event of a supply cut occurring from a major exporting country, especially one that exported significantly to Asia, Asian countries would look to replace their lost imports by convening with other major exporters in the region with a promise of increased investment. Simultaneously, exporting countries would feel it only advantageous to reduce Asian crude grade prices and gain market share. Asia would also try to lessen its dependence on the Middle East by sourcing higher imports from most possibly Russia or the US.

**Mitigation:** Realising that this is a time of a restive Middle East, Asian countries, particularly China, are already keeping their guards up at a time of low prices. Chinese state companies are boosting strategic reserves and discussing with Aramco the potential of becoming a large investor in the IPO if they would be the number one priority for the Kingdom in case of an emergency. The GCC countries are investing in new and existing storage tank capacity in Asia for use in emergency. New pipeline export routes bypass the Gulf if required.

**Scenario Probability:** 30%

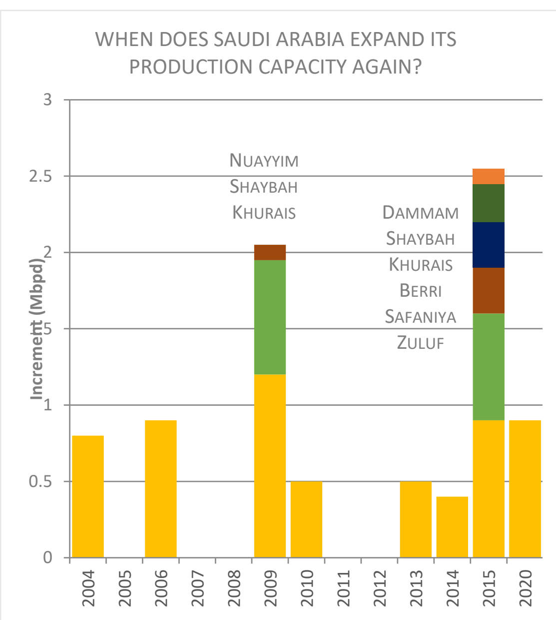
**Alternative Futures**

1) 40%: No sudden crisis in a major oil-exporting country occurs

2) 20%: The loss of supply from one major oil exporting country is made up with new supplies from other countries (revival of Libya, Nigeria, Venezuela, and higher exports from Iran and Iraq).

3) 10%: The Asian countries would not be significantly affected as they would have already lessened dependence on Middle East with higher imports from US shale or Russia.

## Example 2 – Headline Developments




**Summary of the key Issues in Oil Operations in Kuwait**

**Technical:**

- New challenging resources (deep sour Jurassic gas, heavy oil)
- Maturing oil fields (Raudhatain, Sabriya fields, Greater Burgan) and KOC's lack of experience in Enhanced Oil Recovery
- Pollution from heavy oil burning
- Relying on technology from IOCs
- Water demand soon to outpace supply – need for expansion of water supply capacity

**Economic:**

**Commercial:**

**Organisational:**

**Political:**

# OPEC WATCH

AVERAGE CRUDE PRODUCTION FOR JANUARY 2018

32.30 Mbpd

- 0.08 kbpd

From December 2017

***Non-OPEC Oil Supply***

58.88 Mbpd

+ 0.33 Mbpd

from Dec. '17

**Non-OPEC Crude Output**

United States

Canada

Brazil

## LATEST ORGANISATIONAL CHANGES

- UAE Minister of Energy Suhail Al Mazrouei has been elected as president of the OPEC Conference for one year, with effect from January 1 2018.
- Major General Manuel Quevedo, the Minister of Petroleum and Energy of Venezuela, has been elected as alternate president for the same period.

## Non-OPEC (NOPEC) SUPPORT

- Non-OPEC compliance for January averaged 85%, owing mainly due to Kazakhstan's increased output from Kashagan – the country's compliance averaged -720% in January. Among the FSU countries, Kazakhstan is expected to lead output growth in 2018 ahead of Russia.
- OPEC compliance reached a new high of 137% in January, compared to 135% at the end of 2017, due to higher compliance from the UAE and large cuts in production from Venezuela due to its political crisis.
- Angola continued to lead in OPEC compliance (second to Venezuela) with 232% compliance for January. Iran had a compliance of 114% for the same period and averaged at 105% for 2017 even as it expands its export capacity.
- Oman's January compliance was 79%, up from December's 63%, as it tries to balance its 1 Mbpd production target while maintaining its promised 45 kbpd cutback.

## PRODUCTION LIMITS

- While exempt from the original OPEC deal, Nigeria and Libya received production quotas to cap output from their 2017 high of 2.8 Mbpd combined: Libya at 1 Mbpd, and Nigeria at 1.8 Mbpd.
- While Nigeria's output fell by 8.1 kbpd in January, Libya's jumped by 21 kbpd to reach almost 1 Mbpd, at 0.98 Mbpd.
- Crude output from OPEC countries fell to 32.30 Mbpd in January. Higher production was witnessed in Iraq and Saudi Arabia.
- Iraq's production rose by 30.2 kbpd in January to touch 4.43 Mbpd even as exports fell due to a pipeline leak at Basra Oil Terminal. Saudi Arabia had a rise of 23.3 kbpd, keeping production barely under 1 Mbpd.
- While Algeria's production gained in December, raising questions over compliance, its output fell by 8.5 kbpd in January.
- Iran's production inched past its 3.8 Mbpd cap in January, reaching 3.81 Mbpd; unofficial rumours in the country however estimate that production is already at 4 Mbpd.

**NEXT OPEC MEETING: 22.06.2018**

174th (Ordinary) OPEC Meeting in Vienna, Austria

OPEC & US Shale Producers Meeting: 05.03.2018

# KEY MENA ENERGY SCORECARD
FEBRUARY 2018

## QATAR CRISIS

Qatar's economy performed better in 2017 than in 2016 despite the ongoing crisis as foreign deposits rose in Qatari banks for the first time since June 2017 by $606M; President Trump will meet with leaders from Saudi Arabia, the UAE, and Qatar in March and April to discuss a resolution between Qatar and the GCC; Oman and Qatar have reaffirmed their 'strategic ties' and have signed a MoU for bilateral trade; Qatar is set to continue supplying the UAE with 1.8 Bcfd of natural gas through the Dolphin gas pipeline but increases in volumes are not likely under current conditions; the country's LNG exports remained steady at 77 million tonnes end-2017, despite the embargo, and expansion plans are in progress.

## MENA ENERGY PRICE REFORM

UAE considering gradually scrapping subsidies on electricity and gas sold to power generators to reflect 'real' prices by 2030; 5% UAE VAT on petrol prices from January; Kuwait Parliament's Financial and Economic Committee has approved the proposal of MP Waleed Al-Tabtabaie to cancel the decision to increase fuel prices (enforced in September 2016); Egypt's fuel subsidy costs jumped 34% in H1 2017-2018 fiscal year to $2.9B; Saudi Arabia has introduced the Citizen's Account Program, a cash handout scheme for low- and middle-income Saudi citizens impacted by rising fuel prices, electricity tariffs, and the introduction of VAT.

## FEDERAL IRAQ DEVELOPMENTS

CNPC has awarded Petrofac a $30M project management consultancy to oversee development of Halfaya's expansion to 400 kbpd by end-2018; Ministry of Oil handed over Nassiriya Integrated Project to Dhi Qar Oil Company after China expressed reservations about $9B price tag; BOC to ramp up Majnoon production from 235 kbpd to 400 kbpd and cut production cost by 30% per bbl; Iraq will also build new 300 kbpd refinery at the Fao Peninsula with Power China and Norco; country has also resumed transfer of oil products from Doura Refinery to Khor Zubayr in Basra after 14-year hiatus.

## MENA NUCLEAR POWER

Saudi Arabia assessing two potential sites – Umm Huwayd and Khor Duweihin – for its first nuclear power plant project near UAE and Qatari borders: tendering to start by end-2018 - delays likely due to technical plans, and commercially due to negotiating agreement with the US; Egypt and Rosatom signed contract to develop $21B Dabba nuclear plant, raising rhetoric in Israel that Sisi is resorting to former President Gamal Nasser's Pan-Arab policy to overtake Israel's nuclear superiority.

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

# KEY MENA ENERGY SCORECARD

FEBRUARY 2018

## ENERGY INFRASTRUCTURE SECURITY

On February 7, Iraqi Security Forces and the KRG's Peshmerga launched military operations against remnants of ISIS in eastern parts of Kirkuk to secure Iraq-Iran oil transit route and oil fields of Hamrin, Ajeel, and Alas; Israel's IDF has warned Hezbollah that it risks starting another Lebanon War if it fires rockets at its offshore natural gas platforms in Mediterranean which Lebanon claims fall within its own economic zone; on February 24, Libya's National Oil Corporation (NOC) declared force majeure and shut down production at its 70 kbpd El Feel oil field, following withdrawal of field guards due to wage disputes.

## ABU DHABI DEVELOPMENTS

ADNOC awarded India's ONGC Videsh a 10% stake in Abu Dhabi's Lower-Zakum field; ADNOC will utilise 40% of funds to expand refining capacity by 60% and triple petrochemicals production by 2025; Al Reyadah to expand $CO_2$ capture beyond the Emirates Global Aluminium facilities to the Taweelah power facilities from 2030; ADNOC announced its downstream strategy would be released soon as it plans to double refining capacity, triple petrochemical output, and look at new international investments.

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

## IRAN DEVELOPMENTS

President Rouhani has called for Iran's armed forces to divest from downstream petroleum projects to aid country's economy; on January 12 Trump waived nuclear sanctions but issued ultimatum demanding changes to JCPOA; Quercus to invest $594M for 600 MW solar plant in central Iran - Iran's government targeting installation of >5GW renewable capacity by 2022; ONGC Videsh has backed out of Iran after receiving exploratory rights in Israel's Block 32 and stake in ADMA's Lower-Zakum field amid Indian fears of being side-lined by Iran in deference to Russian companies; Schlumberger is only American company in 29 companies that have qualified for bidding in NIOC's oil and gas tender.

## KUWAIT DEVELOPMENTS

Kuwait will invest $22.4 B each year for the next five years to increase the country's output from 3.2 Mbpd to 4 Mbpd by 2020; Jurassic gas planned to reach 500 Mcf/d by mid-2018 and 1 Bcf/d by 2020; KOC has announced launch of operations at Al-Sabriya and the West Al Raudhatain early production facility (EPF) to produce Jurassic oil and gas to help meet domestic demand and limit imports; 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).

# KEY MENA ENERGY SCORECARD

FEBRUARY 2018

**MENA RENEWABLE ENERGY**

ACWA Power won Saudi Arabia's Sakaka IPP PV solar project in line with the kingdom's aim of producing 9.5 GW of renewable energy by 2023; IFC (World Bank Group) has provided $653M for the development of Egypt's 752 MW Nubian Suns solar project; Oman is mulling a solar panel scheme with subsidised installations of 3kW panels to achieve 10% of total power consumption through renewables by 2025; Masdar completed the Morocco Solar Home Systems project to power 19,438 solar home systems, each consisting of two solar panels with a total capacity of 290W; Morocco closed bidding RFPs for MASEN's Noor Midelt Solar Hybrid Complex; Vestas, Siemens, Enercon and Ray Power prequalified for 250MW Gulf of Suez Wind Farm; Bahrain is planning to tender a 100 MW solar power plant in Q1 2018 on IPP model to be assessed by Italy's CESI.

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

**EAST MEDITERRANEAN GAS COMMERCIALISATION**

ENI and Total in the process of beginning drilling on Block 6 offshore Cyprus; ExxonMobil planning at least two wells in H2 2018 on Block 10 offshore southwest Cyprus with Qatar Petroleum; ENI, Total and Novatek awarded E&P licenses to develop Blocks 4 & 9 offshore Lebanon, raising tensions with Israel; Egypt's EGAS will hold an international bid round for gas exploration in 11 concession areas by mid-2018, including 8 sea areas and 3 land areas; Turkey recently commissioned its second FSRU and the world's largest, having an LNG storage capacity of 1.65 Mbbl as it tries to reduce its dependency on pipeline gas and minimise investment costs for transmission and distribution lines; Egypt has begun settling arbitration rulings ordering the country to pay Israel Electric Corp. and the East Mediterranean Gas Co. $1.03 B after it cancelled exports of its gas to Israel following attacks by Islamist militants in northern Sinai in 2012; once settled, the $15 B gas-import deal announced on February 19 will be likely to materialise.

# 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. He holds a first-class degree in Geology from the University of Cambridge, and speaks five languages including Farsi and Arabic.

**RECENT APPEARANCES & TALKS**

S&P Global Platts

**Platts 5th Annual Middle East Crude Oil Summit, Dubai •** *Presentation on* **Special Session: Iraq – Production, Compliance, & Political Status**

PETROLEUM ECONOMIST

**Petroleum Economist Energy Strategy Forum, Kuwait •** *Presentation on* ***Long-Term Investment Scenarios for Energy Majors in MENA***

Oil and Gas Consultants

**Oil & Gas Consultants LNG Breakfast Seminar, Dubai** *• Presentation on* ***LNG Oversupply: Myth or Reality?***

QAMAR NEWSLETTER ARCHIVES

May 2017 • June 2017 • July 2017 • August 2017 • October 2017 December 2017 • January 2018

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