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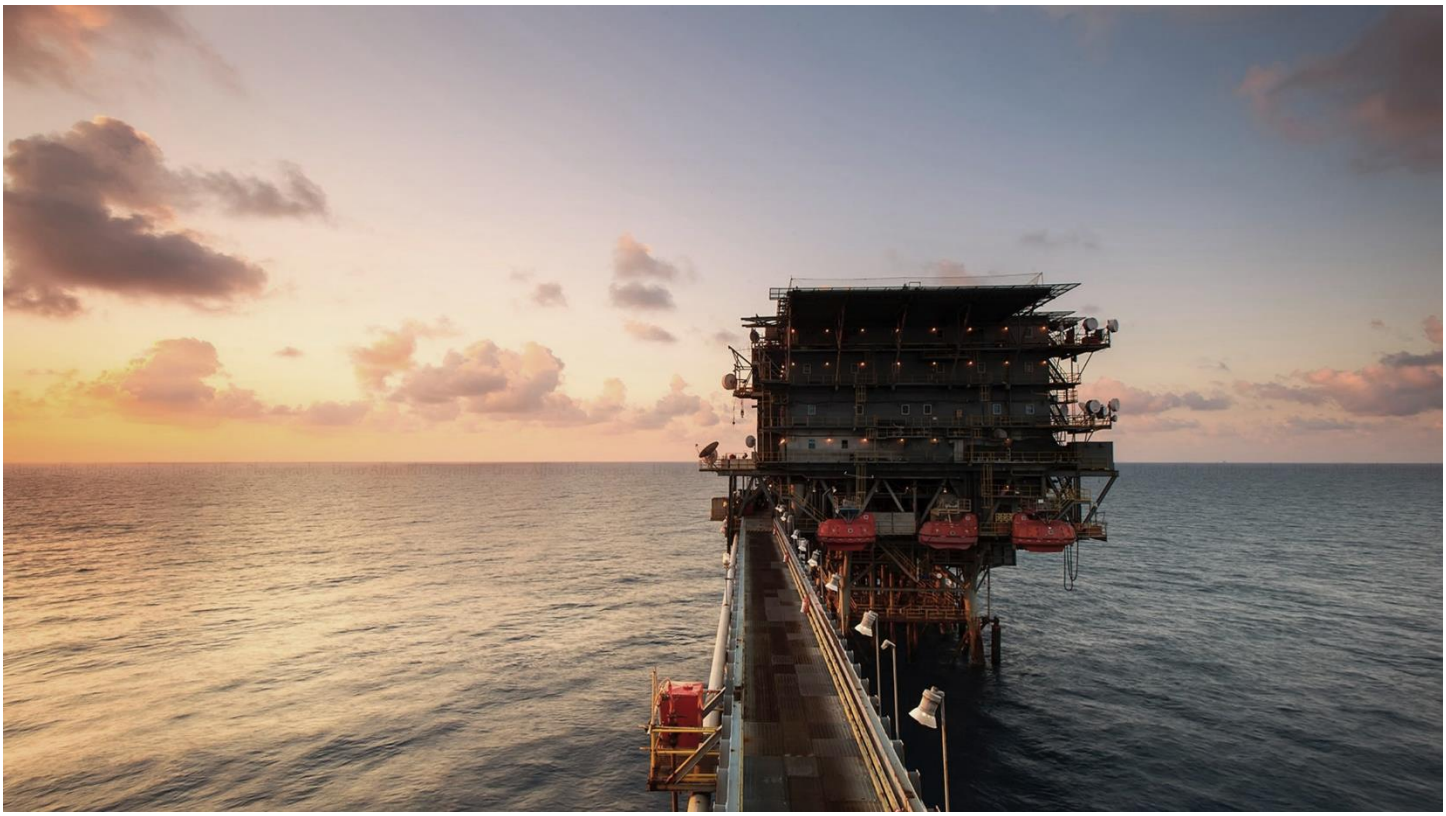

New wave of energy independents hope to bring down costs to keep fields producing longer as bigger companies shed older operations. Cover story by Robin Mills.

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Qamar Energy, headquartered in Dubai, is the leading regionally-based energy consultancy on 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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QAMAR ENERGY

NEW WAVE OF ENERGY INDEPENDENTS MAY CHANGE THE LANDSCAPE OF OIL

Robin Mills • *A version of this article appeared in The National, Oct. 29, '18* • **COVER STORY**

The Shaheen oilfield, Qatar
© OilandGas.com Middle East

For a decade or so, the giant international oil companies have had it easy. Of course, they have had to contend with volatile oil and gas prices, soaring costs on megaprojects, unimpressed equity investors, rapacious governments, capricious geology, hostile environmentalists and all the usual paraphernalia of the business. But they faced at least relatively little competition from outside their magic circle. Now, with a new breed of start-up companies, that may change.

For a couple of decades after the nationalisations of the 1970s, there was a distinction between three groups of oil companies: the large international majors such as Shell and Exxon, which spanned the full value chain; the independents, who only explored for and produced petroleum and concentrated on a handful of countries; and the national oil firms, such as Saudi Aramco.

Low oil prices in the late 1990s and early 2000s forced a wave of consolidation, with the majors gobbling each other up to form supermajors, including ExxonMobil and ConocoPhillips. And long-running European independents were swallowed: Enterprise Oil by Shell, Lasmo by Italian major Eni. Shell's 2015 buy of BG (the former British Gas) was the last big act in this drama.

National oil companies – mostly from net importing countries – emerged as serious competitors internationally, particularly the three big Chinese state firms.

The rise of Canadian oil sands, Australian liquefied natural gas and, later, US unconventional oil and gas led the North American and antipodean companies to retreat to home territory, with firms such as Encana and Devon selling what had been substantial overseas portfolios. Even companies that retain international assets such as Occidental, which has a large Arabian Gulf presence, and Apache, which has been very successful in Egypt, were compelled by shareholder pressure to sell stakes and divert more capital to the US.

The fading of the independents left a hole in the market. They had been aggressive explorers, if not always financially successful, and had helped to open up new provinces or fully exploit mature ones. Some still survive, but a company such as Tullow Oil, notable for making new finds in Africa, has a market capitalisation of just $4 billion, compared to BP's $138bn.

Now a new wave of independents is emerging: well-funded groups led by experienced executives backed by big private equity groups and often with imaginative names. They are following the trail blazed in the US, where there has been great willingness to pour capital into new companies developing shale formations. But outside North America, they are not active in unconventional reservoirs.

Some specialise in the risky frontier exploration of yesteryear, like Kosmos Energy, which struck Ghana's first major field in 2007 and has since followed up with big gas finds in north-west Africa, off Mauritania and Senegal. But most are pursuing mature basins and picking up assets discarded by the supermajors as too small and costly.

Chrysaor, named after the winged horse Pegasus' brother, is chaired by Linda Cook, formerly chief of Shell's gas and power division. After acquiring about half of Shell's UK North Sea assets

last year for $3bn, it has become the largest independent producer there.

Norway has been particularly fruitful. As companies such as Chevron and Shell have exited or downscaled, Det Norske Oljeselskap, an independent that had grown through a series of acquisitions, merged in 2016 with BP's Norwegian unit to form Aker BP.

And deals have not been limited to the North Sea. Last year, Neptune Oil and Gas, backed by private equity groups Carlyle and CVC, paid $3.9bn for the exploration and production division of French utility Engie, including assets in the North Sea, Algeria and Egypt. And in the same year, Assala Energy, backed by Carlyle, bought Shell's long-term onshore position in OPEC member Gabon.

Most recently, in September, LetterOne, backed by Russian oligarch Mikhail Fridman and chaired by former BP boss Lord Browne, merged with Wintershall, the upstream arm of chemical giant BASF, to form Europe's largest independent oil and gas company, producing 575,000 barrels of oil equivalent per day from Norway, Egypt, Algeria, Mexico and elsewhere. Wintershall is also appraising a gas field in Abu Dhabi.

The new players hope to bring down costs, be quick and flexible, and operate assets with more attention than when they were at the tail-end of a supermajor's portfolio. They will invest to keep fields producing longer, important as the bigger companies seek to shed older fields. For now, there is a strategic complementarity between the new and incumbent firms. Private equity, with its itchy trigger-finger, will within a few years look to float the firms on stock exchanges or sell them to a trade buyer. It will be interesting to see is whether a firm such as Neptune will grow into a large and internationally diversified company able to develop new frontiers and take on a range of project types, instead of just managing mature fields.

Outside North America and Russia, oil production growth in non-OPEC countries has been weak. This sector needs some more aggressive, large, technologically capable and well-capitalised private companies, able to discover and develop significant new basins in areas such as Brazil, Mexico and West Africa, and to compete with the super-majors and big national oil companies on something like equal terms. If winged horses, the Kosmos and the ruler of the seas Neptune are fanciful, their strategic aim is not.

AMID A TIGHTENING WORLD MARKET, OIL TRADE IS A BALANCING ACT

Robin Mills • *A version of this article appeared in The National, Oct. 24, '18*

Last week was the 45th anniversary of the oil embargo on the United States, launched by a group of Arab countries in response to American support of Israel in the war with Egypt and Syria. Since then, regional politics and the global oil market have changed enormously. But the possible use of the "oil weapon" has again been raised in recent days, and is it feasible?

The war broke out on October 6, 1973, and on October 16, Saudi Arabia and several other Arab states raised posted oil prices by 70 per cent and decided to reduce production by 5 per cent each month. The then Saudi King Faisal had been sceptical of using the "oil weapon", but US President Richard Nixon's announcement of military aid for Israel forced his hand.

On October 19, the Arab states banned oil supplies to the US. In contrast to their failed policy during the 1967 war, they realised they had to prevent the US from sourcing supplies from other countries, hence they also reduced overall output. Other OPEC countries, such as Venezuela, had not participated in a quarrel that did not implicate them.

Iran, under the pro-American Shah, increased output to record levels but also took advantage of the situation to raise prices. Iraq also did not join the boycott despite its strong anti-Israel stance, claiming it would not work, and wanting to benefit from higher production. The measures were therefore not issued by the Organisation of Arab Petroleum Exporting Counties but a new ad hoc body, the Conference of Arab Oil Ministers.

By March 1974, the US politician Henry Kissinger's diplomacy had brought an Israeli withdrawal from west of Suez and, even though it had not achieved its main objective, the conference (minus Libya) ended its embargo. But the long-term consequences were profound. The oil shock came against the backdrop of a tightening world market, driven by three factors.

Real prices had been low and declining throughout the 1960s, undermining investment in new production outside the Middle East and Soviet Union, and reducing US spare capacity to zero. Demand had increased rapidly due to a robust world economy. And the oil exporters had gradually gained greater control over their industries and pricing, following the founding of OPEC in 1960, the nationalisation of western oil interests in Libya and Iraq, their stronger bargaining position and more competition for the Anglo-Saxon majors from continental Europe, US independents and Japan.

Prices, already creeping up since 1970, rose in real terms by a quarter in 1973 and then more than tripled in 1974, going from $14.53 in today's money in 1972 to $52.54 in 1974, and remaining in the $50s until a fresh shock in 1979. The industrialised world fell into deep stagflation.

The economic malaise was not caused but catalysed by the political action. As American energy economist Morry Adelman put it: "We ought not blame the Arabs for what we did to ourselves."

Price controls prevented supply and demand from adjusting to the shock, leading to the long lines at petrol stations, famous in photos of the time. But OPEC had allowed the price to go unsustainably high, and the developed countries had great powers of recuperation. They founded the International Energy Agency in 1974 to co-ordinate responses to oil shocks.

Efficiency measures and a turn to alternative fuels – coal, gas and nuclear – cut oil demand. European oil consumption has never returned to its 1979 peak. The seeds of today's renewable revolution were sowed by initial research. And huge new oil provinces were opened up in the North Sea, Mexico and Alaska, undermining OPEC's dominance throughout the 1980s and 1990s.

Politically, the Arab oil exporters were tarred as unreliable, a tag they have never fully shaken off. In response to the death of

journalist Jamal Khashoggi, US politicians talked of imposing sanctions on Saudi Arabia. The head of the Al Arabiya news network, Turki Al Dakhil, wrote an opinion piece suggesting retaliation in the oil sector, reminiscent of Mohamed Hasanein Heikal's 1972 call in the Egyptian newspaper Al Ahram (I thank oil analyst Anas Alhajji for drawing my attention to this article). Mr Al Dakhil talked of a cut in exports that would send prices to $100, $200 or even more per barrel, as well as of switching pricing from the dollar to the Chinese yuan.

This brings us to the present day. The environment now is very different from that of 1973, but the lessons of that embargo remain. Clearly Riyadh has an indispensable political role as a level-headed producer of oil and holder of nearly all the world's spare capacity. Saudi oil is needed to fill the gap left by American sanctions on Iran, a campaign which the kingdom supports wholeheartedly. Already in June, Saudi Arabia led OPEC members to agree effectively to scrap individual production limits.

Donald Trump, tweeting several times against OPEC, is clearly concerned about high oil prices going into November's congressional elections. Meanwhile, although unlikely to pass, a "NOPEC" bill allowing the government to sue OPEC members is wending its way through the US legislature. The key growth markets, China and India in particular, would search for other oil partners, and likely tilt to Tehran. But neither China or Russia can yet fill the role of the US and EU as Saudi Arabia's economic and security guarantor.

WORLD NOT DOING ENOUGH TO COMBAT CLIMATE CHANGE

Robin Mills • *A version of this article appeared in The National, Oct. 15, '18*

"The era of procrastination, of half-measures, of soothing and baffling expedients, of delays, is coming to its close. In its place we are entering a period of consequences." The words of Winston Churchill in 1936 could well have prefaced the latest report from the Intergovernmental Panel on Climate Change (IPCC).

The 2015 Paris Agreement called on participants to limit warming well below 2°C, and to try to keep it below 1.5°C. The IPCC's compilation of existing research was intended to assess the impact of this level of global warming,

World temperatures so far have risen about 1°C, so we are already close to the lower limit, and likely to reach it by 2030-2052, well within both the lifespan of most people reading this article and that of the assets we are building today – power plants, roads, houses, coastal developments. Summer heat-waves, more damaging hurricanes, forest fires, droughts across Australia, California and the Middle East, and the loss of Arctic ice are already painfully visible. The difference between 1.5°C and 2°C may not sound like much, but it can be enough to trigger irreversible melting of the West Antarctic ice-sheet, kill off virtually all coral reefs, flood ten million more people and expose hundreds of millions more to poverty. Even more worryingly, every additional fraction of warming brings us closer to self-reinforcing tipping points, such as thawing permafrost and releasing methane from wetlands – at which further climate change becomes unstoppable.

Events of the past few years do not carry much hope that the world will deal with climate breakdown in a calm and constructive way. Reactions to the relatively small number of refugees from the war in Syria helped empower authoritarian and extremist politicians across Europe and the US and tip the scales on potentially calamitous decisions such as Brexit. The fallout from natural disasters, state breakdown, famines, civil conflict and waves of climate migrants seems likely to lead to even more toxic and destructive politics, even in countries well-protected from the direct climate impacts. Perhaps a hundred thousand refugees can be stopped by a wall, but ten million cannot.

The IPCC report will not change the minds of any who have decided, from ideology or short-sighted self-interest, to deny reality. Most notably present in climate rogue the US, they also form a noisy, shameful minority with outsize influence in countries such as the UK, Canada and Australia, and even Brazil's presidential front-runner.

But perhaps more dangerous are those politicians, business-leaders and ordinary citizens and consumers who pay lip-service to climate change but whose actions are far too timid to make a real difference. Then there are the "silver-bullet" monomaniacs, who reject essential parts of the climate solution in favour of their preferred approach.

Most "climate change" policies pursued so far have failed in their ostensible objective: to make sufficient reductions in emissions of carbon dioxide and other greenhouse gases. Thirty years ago, Nasa scientist James Hansen testified to the US Congress on climate, a process that led to the 1997 Kyoto Protocol. Since that testimony, outside recessions, world carbon dioxide emissions have fallen in just one year, 2015.

Climate Action Tracker ranks countries according to their progress on the Paris goals. Only two are on track to meet their share of actions to stay below 1.5°C: Morocco, with an ambitious renewable energy programme, and tiny Gambia. India is the only leading country compatible with the goal of staying below 2°C. The UAE ranks alongside the EU and Australia in the middle of the pack, making some progress but rated as insufficient so far. China, Russia, Japan, Saudi Arabia and the US are falling further short.

Those three decades have not been entirely wasted. We have developed key parts of the toolkit for reducing emissions – more efficient energy use, replacing coal with gas, affordable and reliable renewable power and electric vehicles, carbon capture and storage. Another key technology, nuclear power, has unfortunately gone backwards in most developed countries.

Deployment of these approaches is taking off, but has been far too slow. Decarbonisation at the rate of the IPCC's "middle of the road" scenarios, with emissions falling about 2.6 per cent per year to 2030, has been achieved this century by one country, Denmark, while the UK, dropping 2 per cent annually, is not far off. So this goal is not impossible, but certainly very challenging.

Adapting to the already-changing climate – sensible coastal development, drought-resistant crops, more careful water use – is further behind, particularly in supporting poorer countries.

After 2030, ever-greater efforts will be needed actively to remove carbon dioxide from the atmosphere, a task that has hardly started. And our delays make it very likely we will need some kind of geo-engineering to cool the planet, although the IPCC deliberately did not consider that.

Most of all, the world has not created a robust system, beyond the often vague and non-binding Paris pledges, to encourage and demand emissions reductions. And the international political order – under serious strain for non-climate reasons – must be rebuilt to deal with climate disasters, conflicts, migrations and depressions, and create a cleaner, fairer world. Instead of half-measures, we need full measures, and in the face of consequences, we need action.

US STATE DEPARTMENT TWEETS, BUT SHOULD THE MIDDLE EAST LISTEN?

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

An undiplomatic tweet from the US State Department has betrayed a worrying lack of understanding both of the oil market and American strategy in the Middle East. The missive, which apparently reflects President Donald Trump's views, stated that, "OPEC nations are ripping off the rest of the world. We defend many of these nations for nothing, and then they take advantage of us by giving us high oil prices."

This chimes with a recent report by Securing America's Future Energy, a campaigning group advocating less American reliance on oil, which argues that the US military spends at least $81 billion (Dh297.4bn) annually on protecting global oil supplies, equivalent to $11.25 per barrel consumed in the US.

Yet the US is pushing up oil prices itself by imposing sanctions on Iran and Venezuela. And, through purchases of American armaments, the Middle East states do in fact make a large financial contribution.

But the biggest weakness in this view is that it misunderstands the reason for the US military presence in the Middle East. The US is no longer in the region to defend its own oil supplies; it is there to maintain its global power, and to deter China. Otherwise, who, other than a weak Iran, is the Middle East foe that requires $81 billion per year to deter?

Until the fall of the Shah in 1979, the US's "Twin Pillars" policy relied on Iran and Saudi Arabia to keep the Soviet Union out of the Arabian Gulf. The Carter Doctrine, enunciated in 1980, stated that the US would use military force, if necessary, to prevent "an outside force" from gaining control of the region.

The US was increasingly drawn into the Gulf to protect oil shipments during the 1980-88 Iran-Iraq war. After the defeat of Iraq's 1990-1 invasion of Kuwait, the Bill Clinton administration turned to "dual containment", requiring the long-term stationing of expansive armed forces to confront Iran and Iraq, even though they were deadly enemies of each other.

With Saddam Hussein now long gone, Washington sees Iran as its remaining major foe, along with extremist groups such as Isil. The continuing large American military presence partly reflects its lack of capable, reliable regional partners. The recent discussions over an "Arab NATO", the Middle East Strategic Alliance, grouping the US along with the six GCC members, Egypt and Jordan, is one proposed solution.

As the so-called "realist" view of international relations has it, the US, as the world's dominant power, seeks to avoid the emergence of a regional hegemon anywhere else because one might use its control as a platform to threaten it. The Monroe Doctrine keeps other powers out of the western hemisphere; in Europe, the US has relied on NATO against the Soviet/Russian threat; in Asia, it uses Japan, South Korea, Taiwan and perhaps Vietnam and India to balance against China; and Africa is too disunited and weak to be a concern.

The Middle East is a special case. It is crucial because of its pivotal geography – controlling Suez and the routes from the Black Sea and Caspian – and its vast oil and gas resources. Hence the region has to be protected both from an outside power – which in the near future might include China as well as Russia – and from dominant local actors. In particular, Saddam Hussein threatened to become a regional monopolist after seizing Kuwait in 1990, directly controlling a fifth of then-world reserves and threatening the other Arabian Gulf states.

Now, the rise in the US's own oil production has brought it close to self-sufficiency, particularly when including safe supplies from Canada and Mexico. Many policymakers have seized on this as evidence that the US does not have to worry about the Middle East anymore, other than supporting Israel and fighting terrorism. This is mistaken: the military deployment itself may be oversized, but the strategic logic remains.

Firstly, the US is exposed to world oil prices, even if it did not import a drop itself, as its domestic fuel prices are closely linked to the global market. And the worldwide economic damage that follows an oil supply shock, as in 1973, 1980 and 1990, has led to US recessions, too. Secondly, and more importantly, the US position in the region is a deterrent to any competitor, most obviously China. The Middle Kingdom imports some 10 million barrels per day, 42 per cent of that from the Arabian Gulf, which could be shut off overnight in the event of conflict. Beijing's keenness to develop alternative pipelines from Russia and Central Asia, its push for electric vehicles, and its development of regional bases such as Djibouti and Pakistan's Gwadar shows its awareness of this strategic vulnerability.

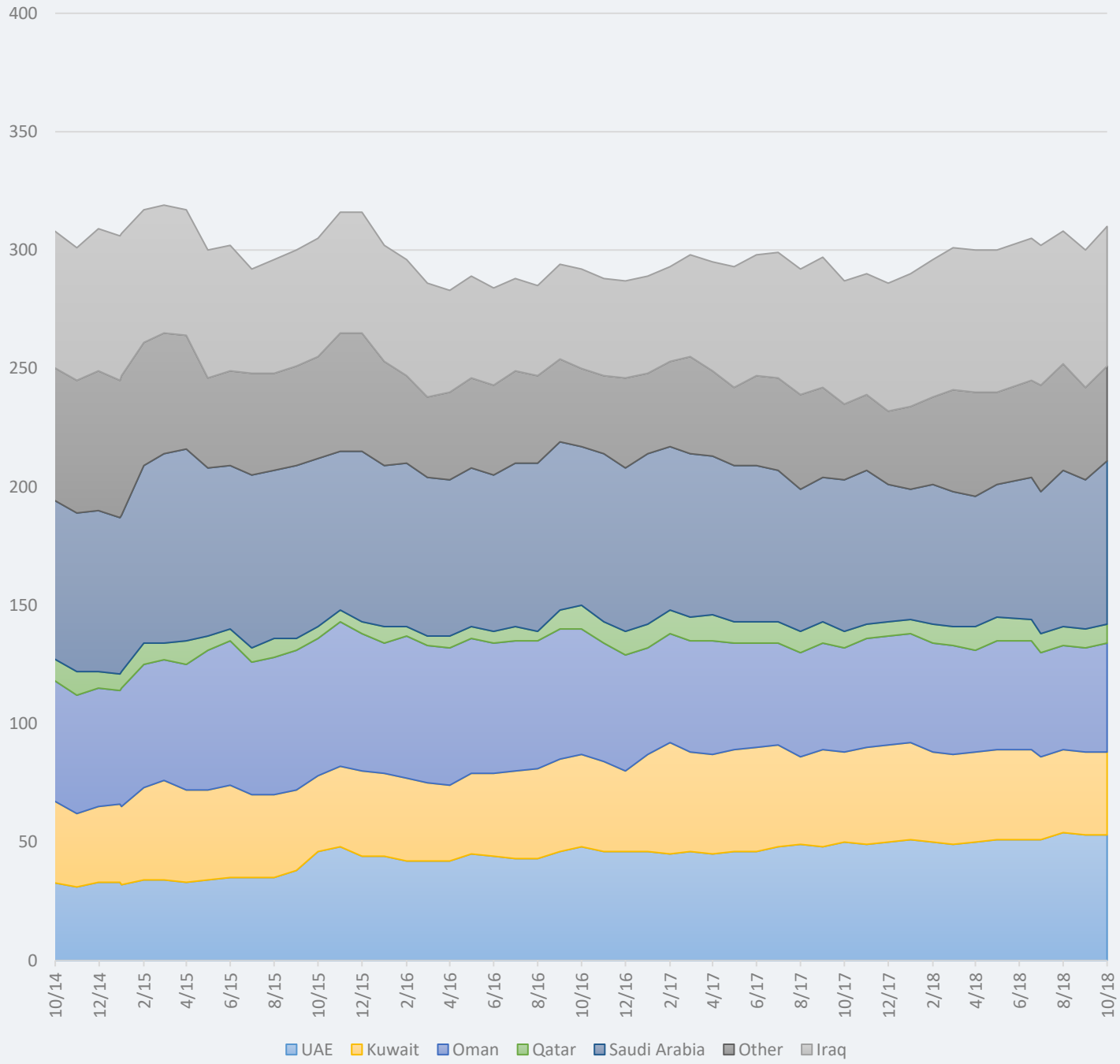
Another competitor, Russia, has ramped up its regional power in Syria, Iraq's Kurdistan region, and via its alignment with Iran and brokering the OPEC/non-OPEC production deal. Moscow is more influential in the Middle East than it has been since the 1970s, and it has a clear interest in hindering competition to its own massive oil and gas exports, as well as diminishing American leverage over it.

The State Department's tweet reflects the administration's view that "free-riders" are benefiting at the US's expense, everywhere from the Middle East to NATO to world trade.

As former marine corps commandant General James Conway puts it, "Why should we protect the oil that is going from Iran to China?"

A solid American-led regional security architecture would diminish the burden. But the substantial costs the US incurs in the Middle East are more than repaid by its geopolitical gains.

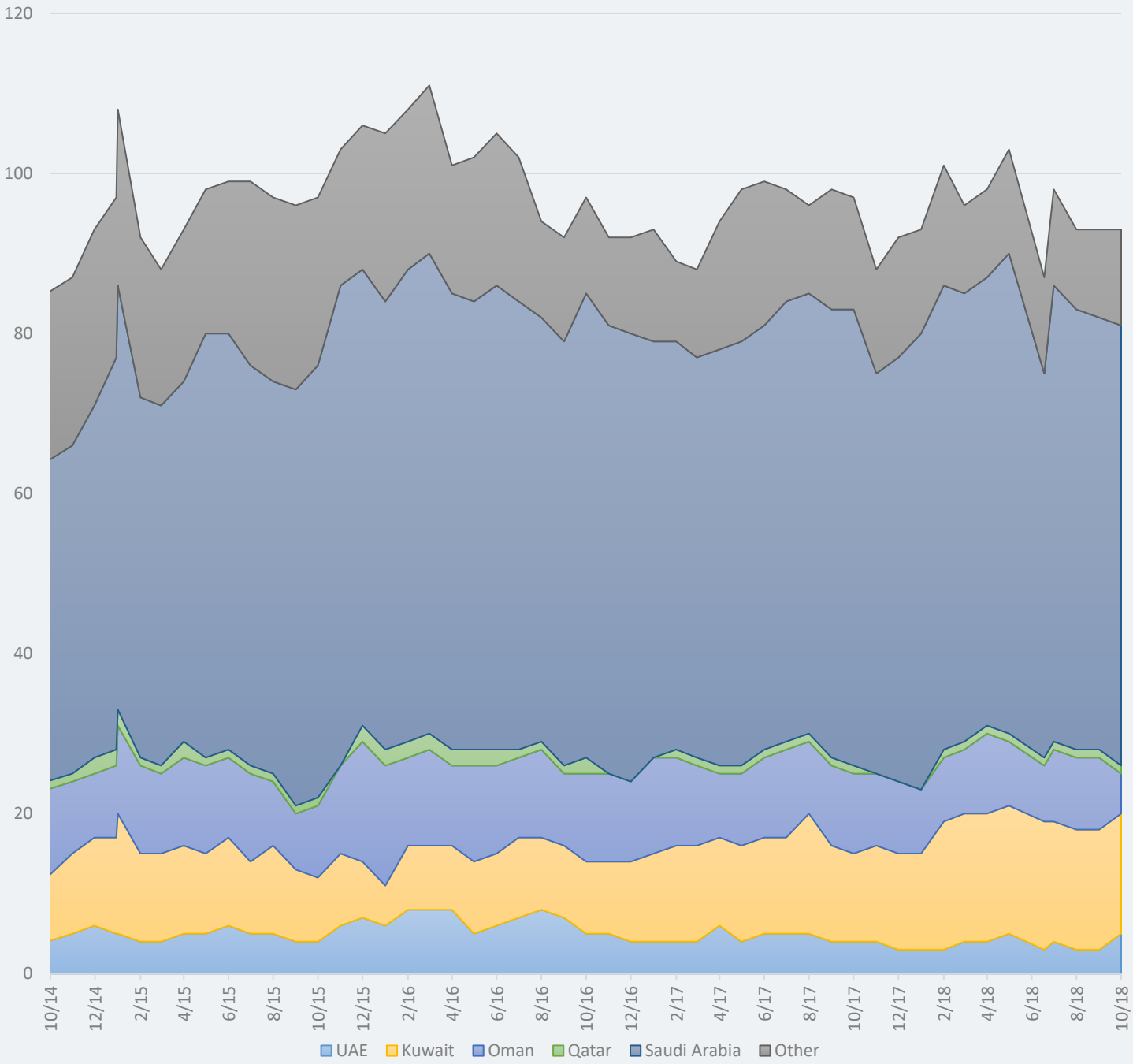
RIG COUNT SNAPSHOT: **OIL**



- The Middle East's oil rig count in October increased by +10, 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 October 2018.
- The GCC's rig count gained by +8 in October; drilling has witnessed stronger growth since June 2018, after OPEC eased its production cuts. The UAE's count has been rising steadily as ADNOC announces plans to reach 4 Mbpd capacity by 2020.
- Iraq has stayed steady at 59 rigs in 2018, witnessing minor drops in Q3 2018 due to routine maintenance. Production has reached ~30 kbpd at the Sonangol-operated Qayyarah oilfield, and is expected to reach 60 kbpd within a few months.
- Kuwait's rig count has averaged 35 since August, falling for the first time (-3) since February, even as a preliminary agreement was reached with Saudi Arabia to resume production from the shared Al-Khafji field.
- Saudi Arabia gained by +6, as overall production gained by +127 kbpd to compensate for lost Iranian oil. In H2 2018 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 +2 from September; in August, the country's production reached its highest in 10 months, averaging ~976 kbpd. This has come at a cost to its OPEC compliance, which stood at ~84% in Q3 2018, after averaging 100% in Q1 2018.

Source: Baker Hughes

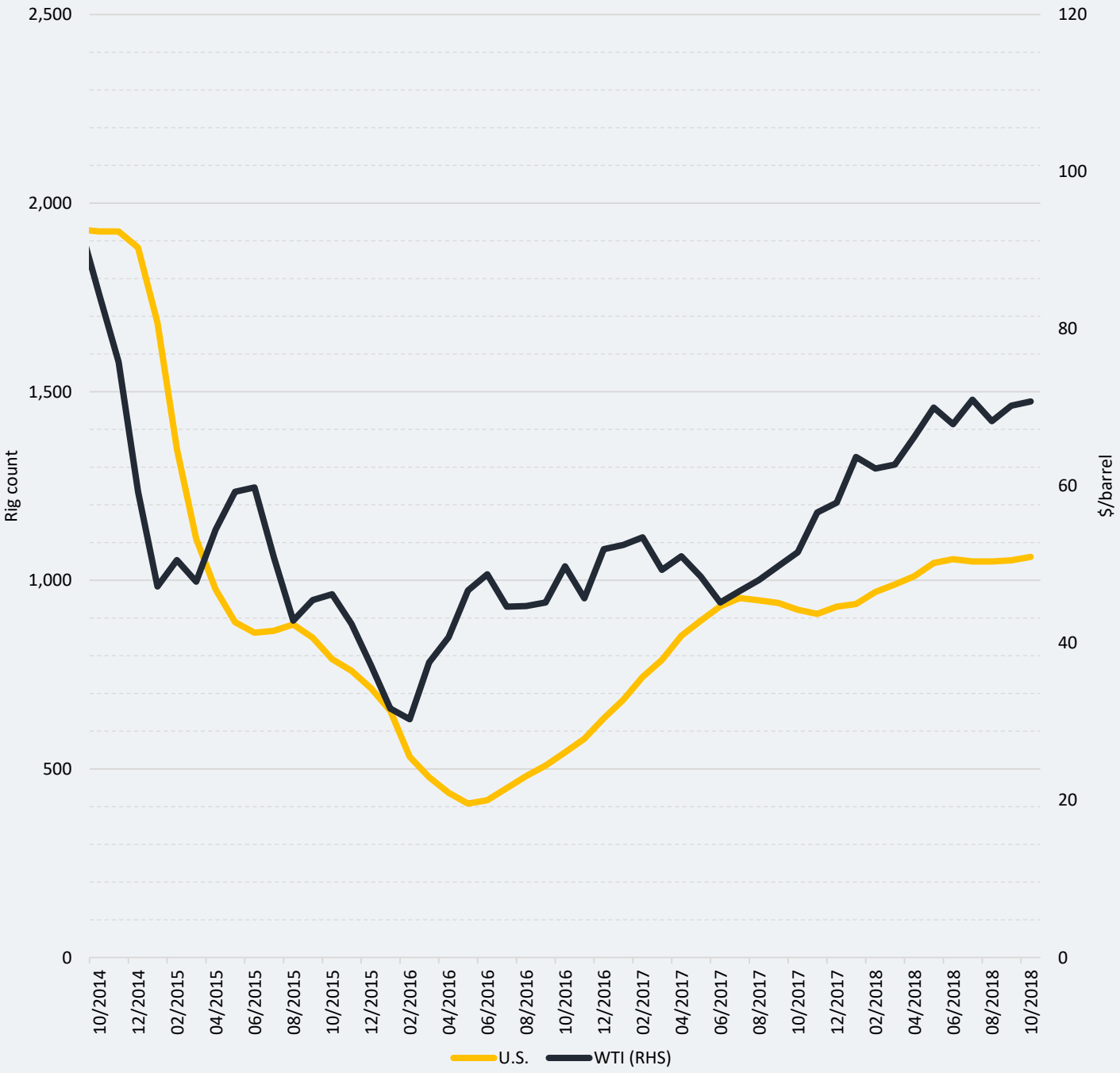
RIG COUNT SNAPSHOT: **GAS**



- The Middle East's gas rig count has not witnessed any change since August, after falling to 87 in June, the lowest rig count since 2012. Its highest level reached was in January 2014 at 123 gas rigs.
- The region's count rebounded to 93 in August, and has stayed steady since, mainly due to Saudi Arabia's rig count reaching its yearly average of 56 after falling to a low of 48 in June; Weatherford announced in June 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 to its lowest in over 5 years in October, even after Petronas agreed to take a 10% stake in Oman's giant 100 Tcf Khazzan gas field in the country's Block 61 concession.
- The UAE's rig count witnessed a rise of +2; the country has earmarked $109 B for downstream assets and sour gas development, indicating a future increase in rig counts.
- Kuwait's rig count in 2018 has remained steady at 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.

Source: Baker Hughes

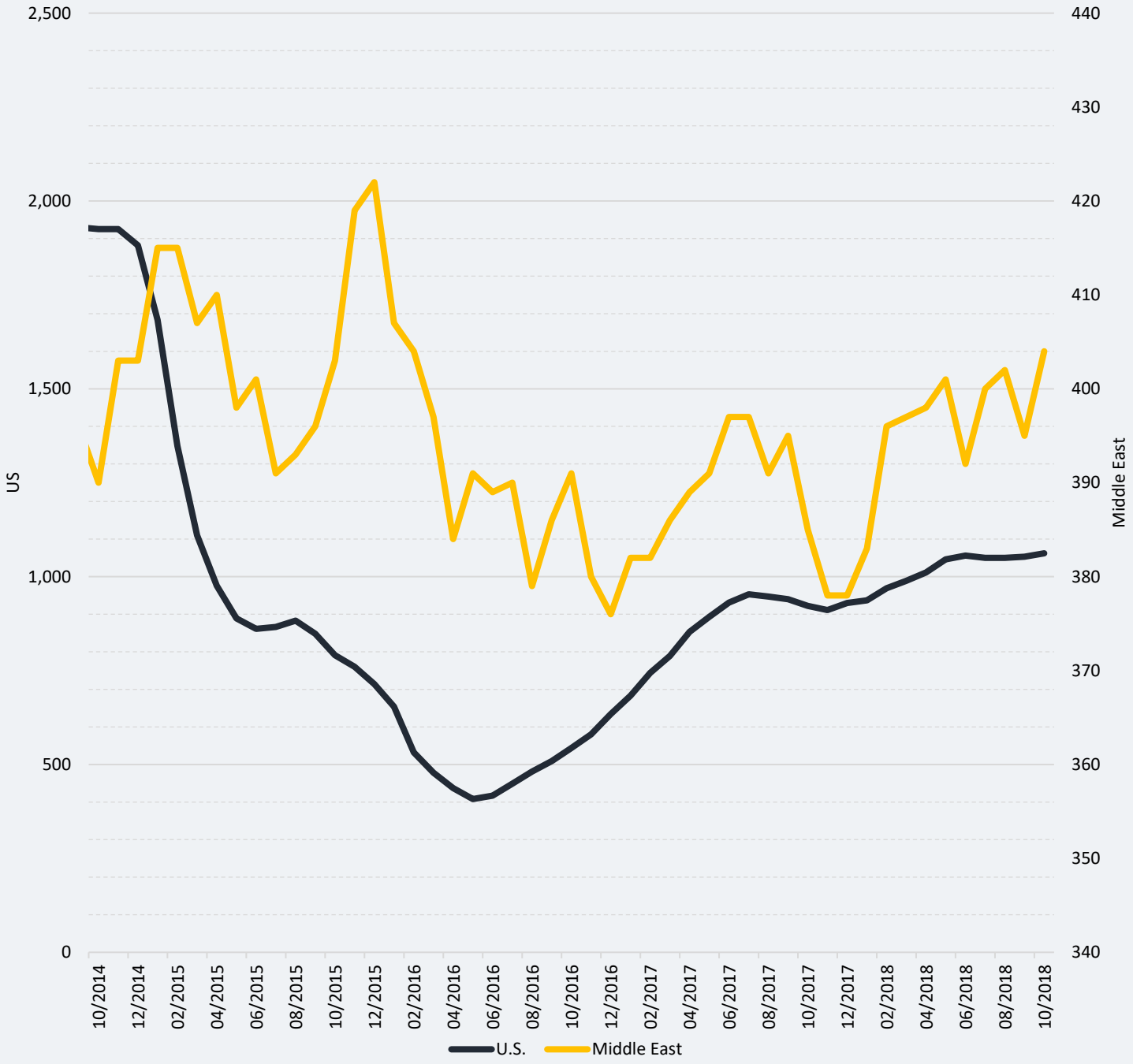
RIGS VERSUS OIL PRICES: US RIGS & WTI



- US rig count jumped by ~15.2% in October y-o-y, a rise of 140 rigs. The US has overtaken Saudi Arabia in crude production, averaging ~11.06 Mbpd in October, about ~433 kbpd higher than the kingdom's output for the same month.
- Total US rig count reached 1063 for October 2018, the highest since March 2015, after producers trimmed spending plans citing softer prices. Yet the country has made a rapid recovery, passing 2017's high of 953 rigs and averaging about 1022 in 2018.

Source: Baker Hughes, EIA

RIG COUNT: US & MIDDLE EAST



- The US' offshore rig count gained by +1 y-o-y from October 2017 even though Hurricane Florence had raised concerns of a similar fall in rig count as was observed during Hurricane Harvey and other natural disasters. The country has made a steady recovery since last August, with a fall in its count occurring only in May this year.
- Total Middle East rig count reached the highest since February 2016 at 404 due to increased oil activity, especially from Saudi Arabia and Iraq. Saudi Arabia is looking to compensate for lost Iranian volumes in the market and will bring 300 kbpd of output online from Khurais, while Iraq is planning to double production from Halfaya.
- The region's rig count has averaged 392 for the last two years.

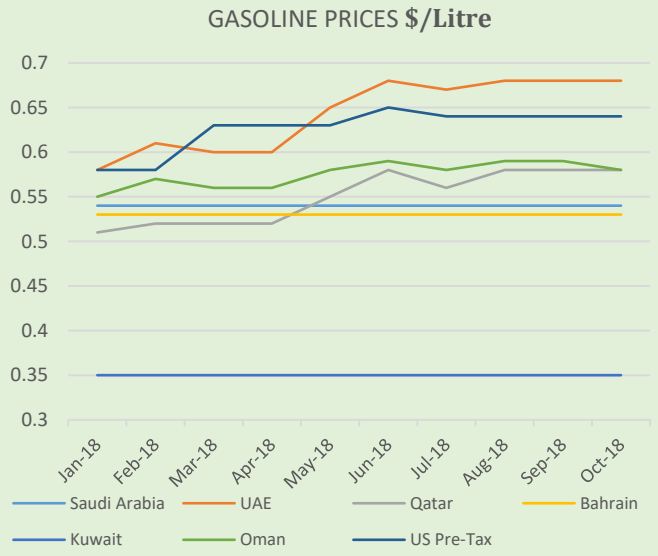
Source: Baker Hughes, EIA

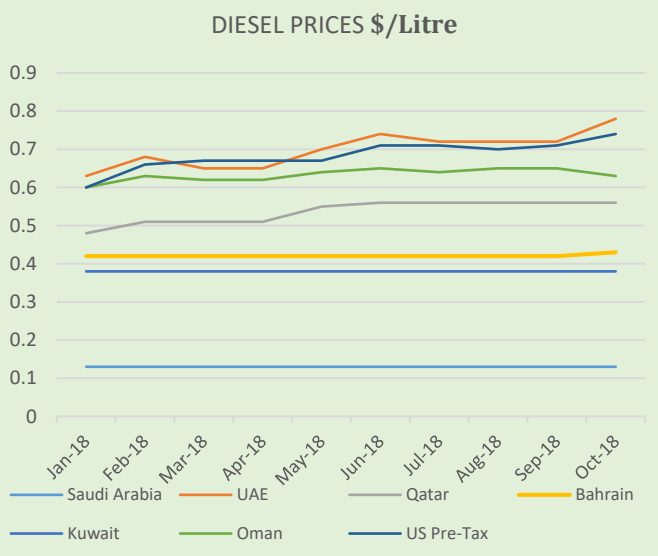
FUEL PRICES & SUBSIDY REFORMS

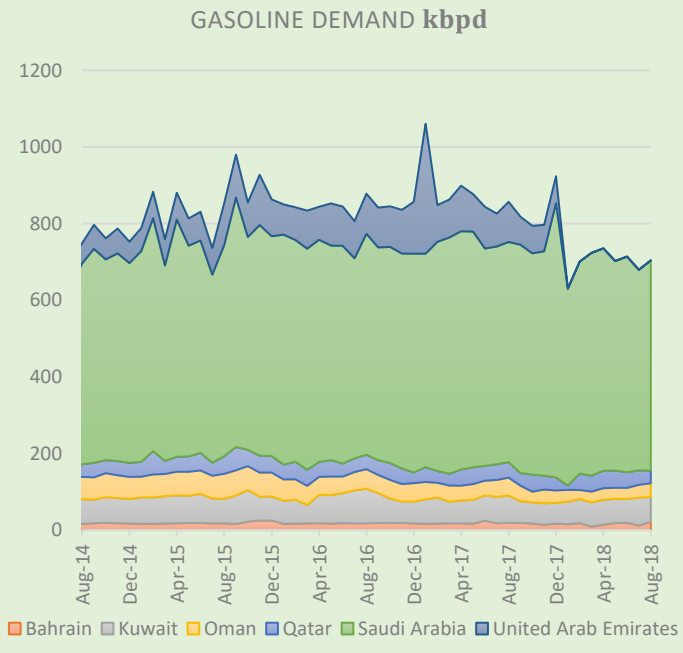
OCTOBER & NOVEMBER 2018

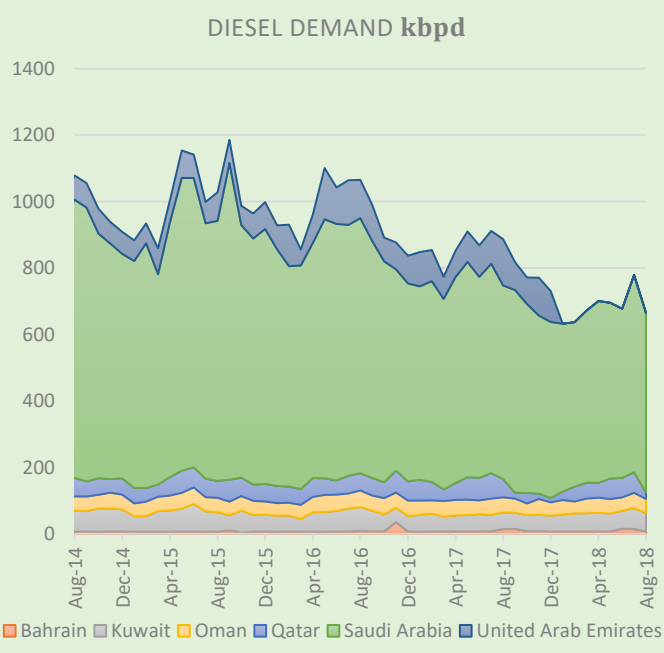
- The UAE was the first GCC country to remove fuel subsidies in August 2015; petrol prices increased by 4.5% overall in October in line with increasing world prices, but gasoline prices were reduced by 1.56% in November. Diesel prices increased for the second month running, rising 3.26% from October.
- In Qatar, diesel prices for October witnessed no change from September, but M91 rose by 2.5%. In May, Qatar's gasoline prices increased by ~9.9% to the highest level since it 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'. On May 27, the High Administrative Appeals Court dismissed the complaint, allowing the Ministry of Oil & Gas to raise fuel prices from September 2018 but this decision hasn't come into force yet.
- In Oman, the prices of Gasoline 91, 95, and diesel increased by 1.84%, 1.75%, and 2.38% in October, the highest level for 2018. Prices of gasoline remained unchanged in November, but diesel has further increased by ~1.17%.

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









Note: *UAE figures for 2018 are not available.*

Source: EIA, JODI, Qamar Energy

THE WEAK & POWERFUL NATIONS OF OPEC

Robin Mills • *A version of this article appeared in The National, Sept. 24, '18*

In Thucydides' famous words, "the strong do what they can and the weak suffer what they must".

Although in theory a mutual organisation, OPEC behaves in the same way. Sunday's monitoring committee meeting in Algiers confirmed this.

The Joint Ministerial Monitoring Committee (JMMC), an ad hoc body created to oversee the December 2016 "Vienna Group" deal, contains Saudi Arabia, Kuwait, Venezuela, Algeria and the two non-OPEC contributors, Oman and Russia. This gives Saudi Arabia, supported by two other GCC members, and Russia the decisive voice. Venezuela, with production plunging and partly beholden to Russian loans, is too weak to do more than protest.

The JMMC does not have decision-making powers; it just reports on compliance and the effect on the market. By June's OPEC meeting, compliance was well above 100 per cent, in comparison to previous OPEC arrangements where even "successful" production cuts achieved some 70-80 per cent adherence. Consequently, the group decided to raise production back into line with its desired level.

Iran said it understood June's outcome to mean that countries that were producing below their target would boost output if they could. But the other key members interpreted the communique to mean they could increase production as long as the Vienna Group as a whole remained below its target - and behaved accordingly. They have consequently taken market share from Iran, where US sanctions have already cut crude and condensate exports from 2.3 million barrels per day (bpd) in July to 1.69 million bpd in the first half of this month, even before the restrictions come fully into force in November.

Iran's oil minister, Bijan Zanganeh, has pledged to veto any OPEC decision against his country's interests. The organisation operates on a principle of unanimity. But Iran has no power to compel any other member.

Power in OPEC rests on three pillars: spare capacity - the ability to put more oil on the market at short notice; the fiscal wherewithal to cut output when the market is in surplus; and the long-term ability to expand output to gain market share and deter competitors.
Saudi Arabia possesses all three capabilities, as does the UAE, though a smaller player. Riyadh is conducting major offshore field expansions currently, though in principle these are only to replace natural declines onshore, and it boosted production by almost half a million barrels per day since May. It has the vast bulk of the world's spare capacity, some 2 million bpd at current output levels.
Abu Dhabi, meanwhile, is pushing towards its target of 3.5 million bpd capacity, and the UAE as a whole produced about 2.97 million bpd in August.

Kuwait too has all three abilities in principle, though domestic politics constrain production expansion. But its new light oil output from deep Jurassic reservoirs has hit a not inconsiderable 175,000 bpd.

Russia's cooperation with OPEC shows that, when called upon, it can trim production a little, but its partly privatised industry pushes back against deep cuts. It boosted its output to a post-Soviet record of 11.29-11.36 million bpd this month, following the decision to abandon individual country targets. With plans for another 300,000 bpd of medium-term growth, it could move beyond the peak of 11.4 million bpd it produced in 1987 when still part of the USSR. Long-term, production will continue to creep up, though at higher costs and lower government revenues as it moves into the Arctic and east Siberia, and extends tax breaks for mature and difficult fields.

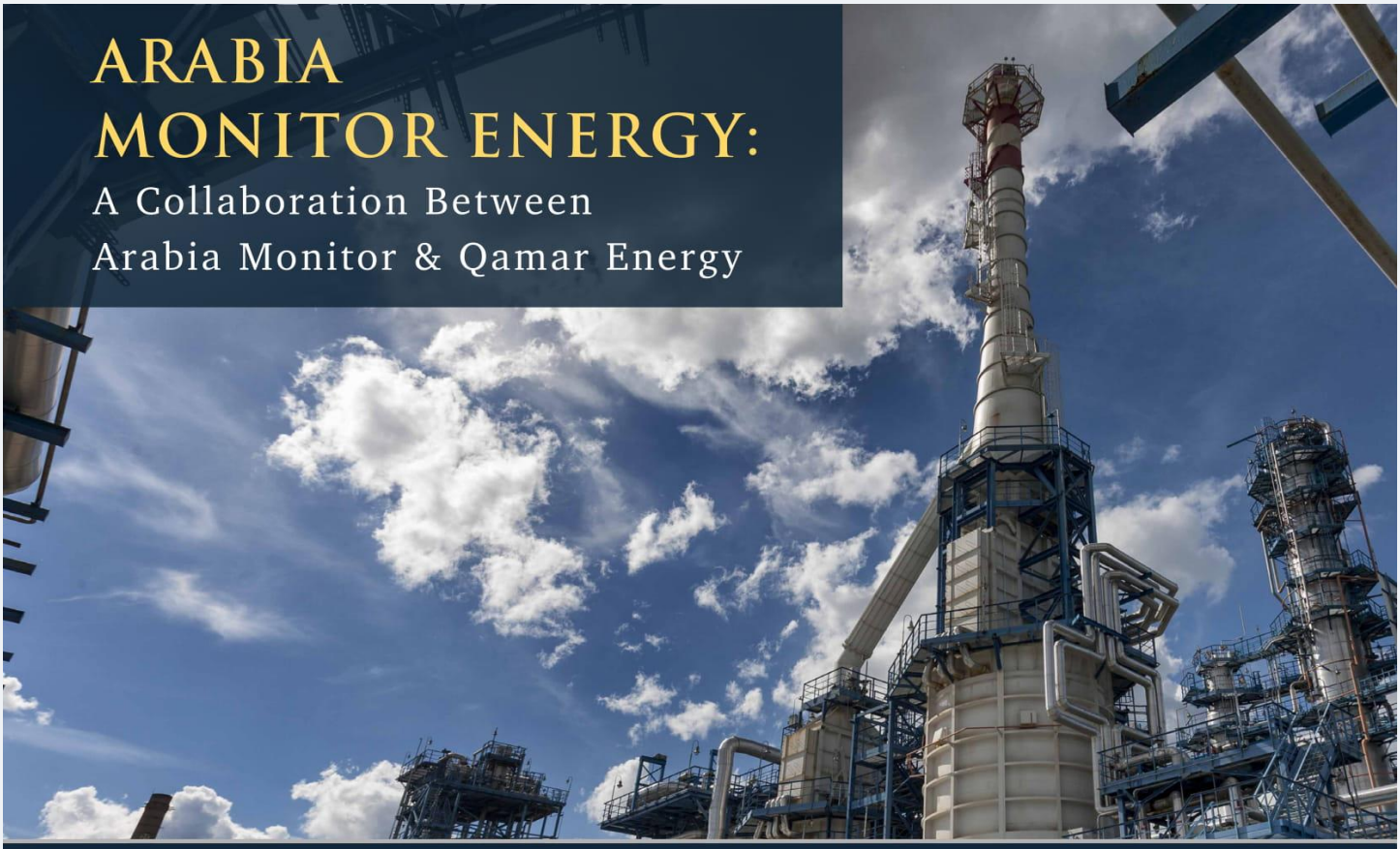
Iraq is too fiscally weak to cut production much, and it was the weakest OPEC adherer to the promised cuts. It has substantial spare production capacity, but some 200,000 bpd of this lies around Kirkuk, which is hostage to a deal with the autonomous Kurdistan region allowing exports via Turkey to resume. However, Iraq has the best potential for capacity growth of any OPEC member. It could reach almost 5 million bpd production by the end of this year, and perhaps more than 6 million bpd by the early 2020s. It needs to fix its creaky export infrastructure in the south, form a new government and deal at least superficially with the deprivation that has triggered widespread protests around Basra.

Libya and Nigeria are wildcards - production is vulnerable to security breakdowns, though both could expand output significantly in the longer term given more favourable domestic politics. The other OPEC members, including newbies Congo and Equatorial Guinea, can be disregarded - they are relatively small and mostly struggling to sustain current production, let alone yielding major gains.
In comparison, Iran lacks the basics of OPEC power. It is involuntarily cutting exports because of sanctions, but would not do so deliberately. It cannot raise production much, even if it could find buyers. And long-term capacity expansion has repeatedly been stymied by bureaucracy, tough contract terms and deterrence of investors by the shadow of US hostility.

Iran had a window between the adoption of the Joint Comprehensive Plan of Action in January 2016, and the US withdrawal in May this year, but it signed only one major field development project with an international investor, and that was for gas.
But, of course, power within OPEC and the oil market is not the only kind of power, particularly for a large country like Iran. Its response to its competitors and to sanctions will play out on the bigger fields of economics, security and geopolitics, as it seeks to avoid the fate of the weak.

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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QAMAR ENERGY

QAMAR SUPPLY CHAIN CONSULTANCY

40 YEARS EXPERIENCE | 15 COUNTRIES | CIPS CERTIFIED

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.

Qamar Supply Chain Consultancy brings more than 40 years of procurement experience and leading-edge solutions across top multinationals to drive efficiencies and added value.

- 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 OCTOBER 2018

32.90 Mbpd

+ 127 kbpd

From September 2018

Non-OPEC Oil Supply*

66.86 Mbpd

+ 31 kbpd

from September '18

*including OPEC NGLs

Non-OPEC Crude Output

United States

Brazil

Canada

LATEST ORGANISATIONAL CHANGES

- At the 174th 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 175th Ordinary OPEC meeting in December.
- Congo joined OPEC on June 22 in line with its ambition of becoming sub-Saharan Africa's 3rd largest producer with a 350 kbpd target for this year. Potential of other African states like Chad to join.

OPEC & Non-OPEC COMPLIANCE

- OPEC compliance stayed above 100% for October at 121%, despite UAE's, Saudi Arabia's and Libya's increases in production, supported by fast declines in Angola and Venezuela, and Iran losing 156 kbpd in production as sanctions kick in.
- Angola (279%) 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 rose marginally in October but has not crossed the 35% mark, mostly due to a production ramp-up from Russia, whose compliance was at its lowest since the OPEC agreement at -61%. According to the Russian Energy Ministry, Russia's production reached a 30-year high in October at 11.41 Mbpd.
- Oman's compliance in October fell by 3% to 84% as it weakens attempts to maintain its OPEC quota, averaging just 5 kbpd less than 1 Mbpd in October.

OPEC PRODUCTION

- Libya's production has surged past its yearly average of 1 Mbpd after reaching a 15-month low of 664 kbpd in July. Nigeria's production fell by 17 kbpd in October, remaining marginally below its 1.8 Mbpd OPEC quota.
- Iraq's production witnessed no change in October, staying steady at 4.65 Mbpd, even as concerted efforts to expand production in the north of the country continue.
- Saudi Arabia's production grew by 127 kbpd as it tries to compensate for the 156 kbpd of lost Iranian production in October.
- Algeria's production declined by a meagre 4 kbpd in October, raising its overall compliance to 70%, the highest since July. The country's production is in overall decline since 2007 due to geological complexities at its maturing fields.
- UAE's production gained the highest among OPEC members in October, increasing by 142 kbpd, bringing its compliance down to -106%, the highest output since the OPEC agreement of 2016.

NEXT OPEC MEETING: 06.12.2018

175th (Ordinary) OPEC Meeting in Vienna, Austria

KEY MENA ENERGY SCORECARD

OCTOBER 2018

QATAR DEVELOPMENTS

Qatar Petroleum will take over the Idd el-Shargi North Dome oilfield from Occidental Petroleum once the latter's PSA expires in October 2019; QatarGas will supply PetroChina with 3.4 Mtpa of LNG under a 20-year deal from the QatarGas-2 Project which is a JV between Qatar Petroleum, ExxonMobil and Total; Qatar may also invest in Exxon's Mozambique venture to jointly market LNG and signed an agreement with the US major to acquire a 30% stake in two of Exxon's affiliates in Argentina, marking its entry in Latin America; Qatar will increase its LNG production capacity to a new target of 110 Mtpa by 2024, overtaking its 100 Mtpa by 2020 target, thanks to the addition of a 4th liquefaction train to the North Field.

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.

FEDERAL IRAQ DEVELOPMENTS

Iraq announced a tender for trucking 30 kbpd of crude from the Qayyarah oilfield to Turkey between November 2018 and June 2019; The KRG and Iraq have reached a preliminary agreement wherein Iraq will export 100 kbpd of federal production through the KRG-Ceyhan pipeline; New Oil Minister Thamir al-Ghadhban has requested a redraft of the law calling for the establishment of the Iraq National Oil Company (INOC), which was passed by the Parliament in March; Former Oil Minister Jabbar al-Luaibi approved a preliminary agreement with Canadian firm Pacific Future Energy for the 150 kbpd Nasiriya Refinery; the firm will also build a power plant alongside the refinery; Chevron will study reservoirs of Luhais, Tuba, and Subba under an agreement with the Basrah Oil Company.

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, even though MBS launched a programme for the Kingdom's first nuclear research reactor on November 05; Egypt and Rosatom will begin construction on the $21B Dabba nuclear plant in 2021 with financial support from the Russian National Wealth Fund; 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 just under 90% (Unit 1: 100%, Unit 2: 94%, Unit 3: 86%, Unit 4: 77%).

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

KEY MENA ENERGY SCORECARD

OCTOBER 2018

ENERGY INFRASTRUCTURE SECURITY

Libya's production has remained above 1 Mbpd since August, even though clashes between warring militias broke out in September in Tripoli, killing 115 people; On September 10 IS militants attacked the NOC headquarters in Tripoli killing 2 people but production was unaffected; On October 02, an employee was abducted (but later released) from the Zawiyah refinery, and company cars were stolen, followed by an assault by gunmen who attacked security personnel and fled with stealing some personal items; On October 18 members of the Obeidat tribe began protesting outside Marsa el-Hariga, but were forced to leave within 24 hours.

IRAN DEVELOPMENTS

US sanctions came into effect on November 04; EU refiners have begun cutting credit lines to avoid exclusion from the US financial system even though a unique financial mechanism, the Special Purpose Vehicle, to facilitate trade with Iran was announced; India has said that it will continue to import crude from Iran since it expects to receive a waiver from the US; 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, after Phase-1 of the North Azadegan, Yadavaran and North Yaran oilfields project was inaugurated by PEDEC; UK's Quercus has halted the construction of a 600 MW solar power plant valued at $570 M following the re-imposition of US sanctions.

ABU DHABI DEVELOPMENTS

ADNOC will increase its oil production capacity to 4 Mbpd by end-2020 and 5 Mbpd by end-2030 due to new discoveries of 1 Bbbl OOIP reserves; ADNOC awarded Italian major Eni a 25% stake in its offshore ultra-sour gas Ghasha concession which will produce 1.5 Bcf/d by 2025; ADNOC is setting up a new refined products trading unit to deviate from its FOB-selling model and expand its downstream sector; ADNOC is in advanced talks with international players Eni and OMV to sell a minority stake in its $20 B refining business; JERA signed an LNG purchase deal with ADNOC for 8 cargoes of LNG per annum for a period of 3 years starting in April 2019, to replace a pre-existing 25-year long-term LNG contract with Abu Dhabi expiring in March 2019, under which it buys 4.3 Mtpa; Mubadala acquired a 20% stake from Eni in Egypt's offshore Nour block for E&P alongside Eni and Tharwa Petroleum.

KUWAIT DEVELOPMENTS

Kuwait is in talks with Saudi Arabia to restart up to 500 kbpd of locked-in production from the Neutral Zone fields of Khafji and Wafra by end-2018; the fields have been offline since 2014; KOC is planning to launch an Integrated Drilling Services tender for 29 Jurassic wells; Kuwait will increase production of its newly launched Kuwait Super Light to 250 kbpd by 2023 from the current 175 kbpd; 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 in Oman (which is expected to be operational by 2022).

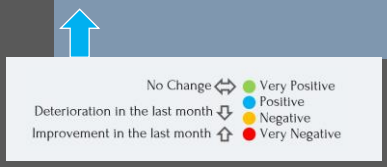
No Change ⇔ Very Positive
Deterioration in the last month ⇩ Positive
Improvement in the last month ⇧ Negative
Very Negative

KEY MENA ENERGY SCORECARD

OCTOBER 2018

MENA RENEWABLE ENERGY

Masdar has submitted the lowest bid for Saudi Arabia's Dumat al-Jandal wind plant ($c 2.13/kWh), with the second lowest bid placed by Engie ($c 2.365/kWh); the winning bid will be announced in December; 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; French renewable power plants operator Voltalia has started construction on the 32 MW Ra Solar Plant that will be part of the Benban complex in Egypt's Aswan governorate; 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 2nd and 4th stations of the giant Noor Ouarzazate Solar Power Complex, which is now expected to come online by end-2018 or 2019.



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; Eni announced a gas discovery in the East Obayed concession located in the Egyptian Western Desert on August 30; the discovery has been opened to production of 25 Mscf/d; ExxonMobil has started test drilling in its Block 10 concession offshore Cyprus, irking Turkey; Turkey has been urged by US authorities to keep away from Exxon's area and are waiting on a Turkish commitment to not send its warships; Eni has increased production at its supergiant Zohr field offshore Egypt to 2 Bcf/d following the start-up of a 5th production unit; Tarek el-Molla has said that production will reach 2.7 Bcf/d by end-2019, enabling Egypt to halt all LNG imports.

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

Indosuez Wealth Management, October 2018 • *Presentation on* ***Changing Trends in Global Energy***

Iraq Capital Club, Dubai, September 2018 • *Speech on* ***Iraq's Revenue Growth and Political Realignment***

Columbia University SIPA Centre for Global Energy Policy, Paris • *Conference on Peak Oil Demand, September 2018*

QAMAR NEWSLETTER ARCHIVES

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