Issue 15: Read our piece on OPEC and Shale

Photo courtesy of Canary USA

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OPEC Should Invest in Shale to Really Understand the Rival

By Robin Mills

A version of this article appeared in The National newspaper on July 9, 2017

In May, just before the last OPEC meeting, an enemy walked into its Vienna headquarters. Often we can learn more from our enemies than our friends. Mark Papa, the chairman of Centennial Resources and legendary chief executive of the oil company EOG, was there to tell OPEC about shale.

The major oil and gas producers have persistently underestimated shale, to their detriment. In 2011, Alexei Miller, the chief executive of the Russian state company Gazprom, commented that "shale gas is a well-planned propaganda campaign" and his deputy called it "a bubble". Qatar's oil minister said as late as January 2014: "We do not consider the US shale gas revolution to be a game changer."

Mr Papa was one of the leading characters in this revolution. Starting in the late 1990s, he built EOG into the United States' fourth-largest driller, increasing its value almost 2,000 times by developing shale reservoirs in North Dakota and Texas. One of the first to spot the shift in value from shale gas to oil, EOG became renowned for its in-house technology and low production costs. Since retiring, Mr Papa was tempted back to start Centennial Resource Development, investing in Texas's Permian Basin and turning US$500 million into $2.85 billion in two years.

Since then, OPEC has awoken to the threat, but still struggles to understand shale. The production cuts that began at the start of this year have left the oil price exactly where it started and, by April, rising US shale production almost precisely offset OPEC's reduction. So Mr Papa's expertise was welcome and it is understood that he actually forecast a lower rise in US output this year than OPEC's own analysts. Mohammed Barkindo, the organisation's secretary general, had already met him and several other shale chief executives in Houston in March.

Talking to experts such as Mr Papa demonstrates a welcome and overdue openness. For too long, OPEC's analysts and officials relied on the reports of fringe sceptics who have repeatedly been proved wrong. But to understand shale fully requires more than occasional meetings.

Shale production is not just another big but comprehensible competitor, like Brazilian deep-water oil or Canadian oil sands with discrete projects with long lead-times. Its business model is entirely different: short-term flexibility; relentless improvement in costs and efficiency; a continual inflow of finance; and hedging to lock in acceptable oil prices for one or two years while wells recover their costs.

The former Shell chairman Sir Mark Moody-Stuart and the former BG and Schlumberger chairman Andrew Gould sit on the Saudi Aramco board - but neither are shale experts. Major oil-producing countries could bring in practitioners such as Mr Papa into advisory roles. But the best way to learn is to do the thing. OPEC countries, via their national oil companies or strategic investment vehicles, can enter North American shale plays.

Other national oil companies have bought into North American shale assets – India's GAIL, the Korea National Oil Corporation, China National Offshore Oil Corporation, and Kuwait Foreign Petroleum Exploration Company (Kufpec) in Canada. But, with exception of Kuwait, these are not OPEC companies. Qatar Petroleum's joint venture for liquefied natural gas with ExxonMobil does not include the upstream – the production of oil and gas. Abu Dhabi National Energy Company (Taqa) is present in Canada but in conventional, not shale, fields. Kufpec and Mubadala are natural investors for such a venture, but ADNOC or Aramco could also take part.

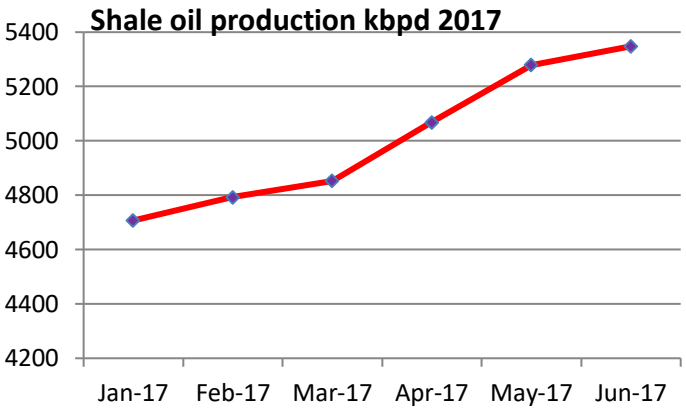
So why should OPEC countries invest in shale? They should not sink huge sums, nor expect to earn stellar returns, in a very competitive business but they should not aim to lose money either. The main benefits would be threefold: to hedge; to learn; and to apply.

The hedge refers to betting on the future progress of shale. If shale production cannot keep up with demand, and prices rise, OPEC investors will benefit from gains in both domestic oil revenues and their shale earnings. If, on the other hand, as currently seems the case, shale output grows rapidly and caps prices from rising much above $50 a barrel, the shale investors will at least gain from greater production volumes.

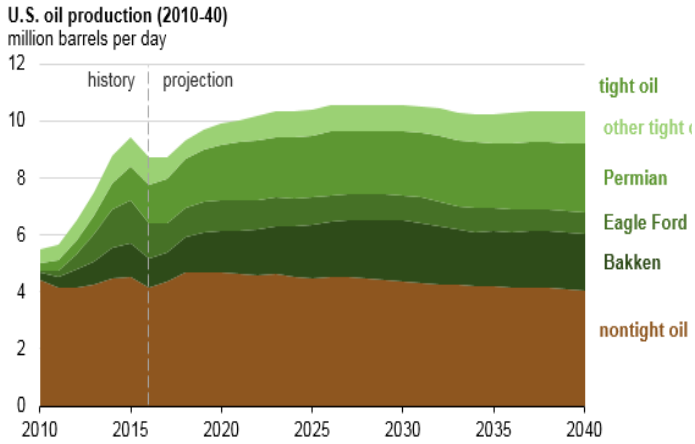
Learning is essential for big oil-producing countries to plot their response to shale. There is no substitute for being involved in the day-to-day hurlyburly of the fields in Texas or North Dakota - to be able to judge how quickly costs are rising or falling, how technology is advancing, and whether shale companies are really profitable and financially sustainable. That in turn would inform them on whether to try to ride out the current slump, whether to meet it with modest production cuts as now, or to boost output to bring down prices below shale's break-even.

The third angle is application. OPEC members - Abu Dhabi, Algeria, Saudi Arabia, Venezuela - have shale resources of their own. For those whose oil production is in decline, these are worth developing. Even for those with abundant low-cost conventional oil, the techniques of shale production are still applicable to their reservoirs. Long horizontal wells and hydraulic fracturing has led the boom in the Permian Basin, whose carbonate reservoirs are not so different from many in the Middle East.

Shale is a novel challenge for all conventional oil producers. By getting more deeply involved, they would be better able to plot their strategies. No doubt Mr Papa or his peers would lend a few tips on where to drill.



Source: EIA



Source: EIA

Qatar Warms Up to Iran on Natural Gas

By Robin Mills

A version of this article appeared on Bloomberg View on July 20, 2017

The world's biggest gas field lies between Qatar and Iran, and the half-competitive, half-cooperative race to exploit it has taken a new turn. For both countries, this enormous resource is also a source of political power. Now, with the emirate at odds with Tehran's foe, Saudi Arabia, its tacit cooperation with Iran is gaining, even as the two are set to compete more intensely in gas markets.

In 1971, Shell first drilled into what became Qatar's North Field and was disappointed to find not oil, but gas, though in vast quantities. The country was only a modest oil producer with a tiny domestic and regional energy market. Through the 1980s and 1990s, it struggled to develop a liquefied natural gas project to export to Asia, but with low global energy prices, a cost-cutting BP gave up and Mobil took over. The emir, Sheikh Hamad bin Khalifa Al Thani, who took power from his cautious father in a bloodless coup in 1995, was keen to press ahead.

Exxon might not have had the entrepreneurial mindset to create the project, but when it bought Mobil in 1998, and soon afterwards oil and gas prices began to rise, it had one of its most valuable global assets. The wily former oil minister, Abdullah bin Hamad al-Attiyah, worked with the emir to use Qatar's strategic position to sell gas both east and west. Total, ConocoPhillips and Shell also built LNG plants, while the Abu Dhabi state firm Mubadala, with Total and Occidental, constructed the Dolphin pipeline to the neighbouring United Arab Emirates.

When the U.S. import market disappeared because of the rise of shale gas, Qatar was nimble enough to focus on Europe and Asia, and reacted rapidly to boost supplies to Japan after the 2011 Fukushima nuclear accident. The Japanese were grateful, even if they felt they paid a stiff price as LNG prices soared to records. And in less than two decades, Qatar became the world's wealthiest country per capita, a major global investor and an expansive political actor involved across the Middle East.

Meanwhile, despite Qatari maps showing the field conveniently ended at the border, Iran drilled its sector in 1991,

and gradually established that it had about a third of the total reserves in what it called South Pars. But it was slowed by sanctions, mismanagement, and indecision and political infighting over what the gas should be used for -- reinjected in ageing oil fields to boost recovery, sold to petrochemical industries, burnt to generate power or heat homes, or exported by pipeline to neighbours or as LNG.

In 2005, Qatar imposed a moratorium on further development of the North Field, saying it needed to study the reservoir. That moratorium has only just been lifted -- but a field study does not take 12 years. There were good commercial reasons to halt -- the LNG market was becoming oversupplied and domestic construction capability was overstretched. Saudi pressure blocked new pipelines to Bahrain and Kuwait, which even made difficulties over the route of the Dolphin pipeline.

But there has also been suspicion that the Iranians warned Doha to stop new projects that they felt would start draining "their" gas. Since 2014, Iran's production has been gaining rapidly as long-delayed phases of South Pars, awarded to domestic contractors who were hampered by sanctions and financing problems, have finally been completed. By 2020, Iran's output from South Pars will exceed Qatar's from the North Field.

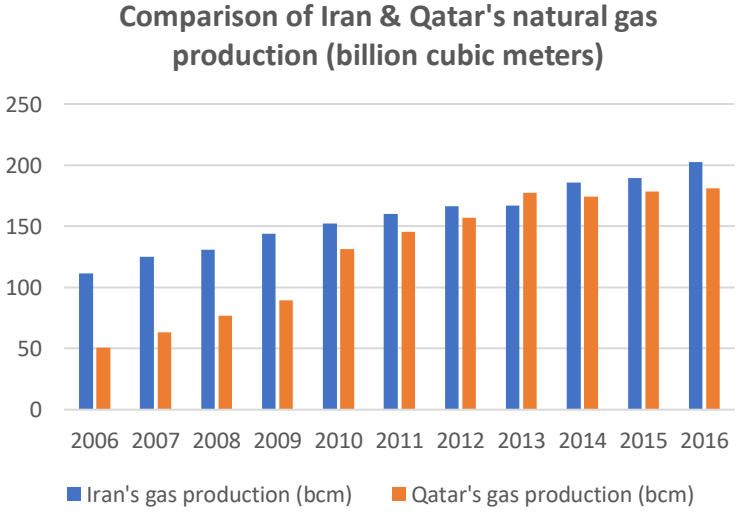
The South Pars phases that have not begun development -- 13, 14 and 22-24 -- are at the northeastern end of the field, well away from the border. The one exception is Phase 11, which lies on the border, and has been a priority to prevent gas migrating from the Iranian to the Qatari side.

The contract that Total and China National Petroleum Corporation signed on July 3 for Phase 11 is thus a crucial part of Iran's strategy, as the first deal awarded under the new Iran Petroleum Contract, designed to attract foreign investment following the lifting of nuclear-related sanctions at the start of last year. The production will initially go to the domestic market, but later could support Iran's first LNG export project. It is a key public relations win for both post-sanctions Iran and for the administration of recently re-elected President Hassan Rouhani.

This came only two months after Qatar announced the end of its moratorium, with the beginning of a new gas production project. Just a day after the signature of the South Pars Phase 11 deal, Qatar Petroleum Chief Executive Saad Sherida Al Kaabi said its new project would double in size, raising total LNG export capacity by 30 percent to 100 million metric tons per year by about 2023, maintaining it as the world's largest, outpacing Australia and the U.S.

This was a signal to high-cost LNG competitors that Qatar would fight for its market share, and it was a sign of defiance to the Saudi-led coalition. The chief executives of ExxonMobil, Total and Shell all visited Doha recently.

The interesting question is, what deal or understanding did Iran reach with Qatar over its expansion? If the emirate had instituted its moratorium on account of warnings against further projects by the Iranians around 2005, this could not be sustained now that their own production nearly matches Doha's, from just a third of the total reserves. The Saudi-led blockade has pushed Doha closer to its big northern neighbour, and at the same time, the Iranians, seeing a chance to divide their Arab neighbours, may be willing to make life a little easier for the Qataris. Cooperation suits both owners of this field -- for now.



Source: BP Statistical Review of World Energy 2017

Iraqi Kurds' Ambitions Tied to Ability to Keep Energy Sector on Track

By Robin Mills

A version of this article appeared in the National newspaper on July 30, 2017

This month a new version of Finding Neverland emerged.

The star of this instalment was not Johnny Depp or Kate Winslet, but an Italian-registered crude oil tanker. The Neverland, carrying oil from the Kurdish region of Iraq, disappeared off Canada on June 30 after the Iraq oil ministry initiated legal action, and reappeared empty, near Malta, on July 21.

The timing is interesting: just after the declaration of victory over ISIL in Mosul and ahead of the planned referendum on Kurdish independence. Whether the Kurdish region stays within Iraq in some form or becomes independent, oil is both its lifeblood and a dangerous drug.

The region's inhabitants, have, of course, the right to determine their future. The referendum has attracted a flurry of op-eds in the western press, some claiming it would be a "failed state" and comparing it to another oil-rich secession, South Sudan, now mired in civil war. Others support the Kurdish region for various reasons, among them its prominent military role in the anti-ISIL campaign. Victory over ISIL in Mosul was declared on July 10 (even though fighting continues). The referendum is scheduled for September 25, with a "Yes" vote backed by all the major parties and expected to be overwhelmingly affirmed.

A declaration of independence will not necessarily follow a yes, with the Kurdish Democratic Party saying it would strengthen their hand in negotiations with the federal government in Baghdad. External parties, though, remain unconvinced: Iran, Turkey and the Assad regime in Syria, all with Kurdish minorities of their own, are opposed to independence; Russia is non-committal; and the UK and US recognise the Kurds' aspirations but say that now is not the time.

Petroleum is persistently a key part of the region's strategy: underpinning its economy; buying domestic political support through patronage; and acting as a bargaining chip for external allies.

But it has been a tough few years for the Kurdish oil sector. The government was already struggling with the collapse of oil prices, war costs and accumulated debts of some US$22 billion by early this year. It was unable to pay oil companies operating in the region regularly, and they could not invest to boost output.

This was compounded by geological disappointments from what had seemed one of the great oil frontiers, with production at Genel Energy's flagship Taq Taq field collapsing from 14,000 barrels per day in 2015 to just 1,000 bpd in May. Genel's Miran and Bina Bawi gasfields, intended to supply Turkey, have at best been inching forward. At other fields there have been sharp reserves downgrades, and ExxonMobil has withdrawn from several of its blocks.

Kurdish exports have been quite stable at around 600,000 barrels per day since September. Abu Dhabi's Taqa started production from its Atrush field this month, with planned output of 30,000 bpd. Some other small fields are contributing, but a lack of capital and investor confidence is holding up full-scale output from finds such as Gulf Keystone's giant Shaikan, near Atrush. Instead, exports have been supported by a deal with Baghdad to supply crude from the Kirkuk field to Kurdish refineries, and by the continuing strong output at various fields around Kirkuk claimed both by Baghdad and Erbil. Some were occupied by the Kurdish peshmerga to avoid ISIL overrunning them.

The Kurds have long awarded oil blocks to push forward their territorial aspirations. Of 20 new (or repackaged) blocks announced late last year, several are in disputed areas. The big Bai Hassan field near Kirkuk, the Ain Zalah field north-west of Mosul, and the Sinjar block near the Syrian border, have been discussed with Russia's state-owned Rosneft, in parallel with an oil export deal.

Conversely, Baghdad's recent oil exploration offers include blocks in the Diyala province to the south of the Kurdish region, which the federal government reinforced in mid-2014 to prevent Kurdish forces entering. The referendum question refers also to Kurdish areas outside the official Kurdish region, which also contain Arab, Turkmen, Assyrian and other populations. Whatever happens in Kurdish region will affect the aspirations of the largely Sunni Arab parts of Iraq, after the expulsion of ISIL.

For economic and political sustainability, an independent Kurdish region would need to maximise oil and gas exports to sustain its budget. It needs to polish its tarnished image with energy investors. Conflict and dispute with Baghdad would severely hamper that.

Oil exports will continue to be almost entirely dependent on the Turkish route, at least until the contours of a post-war Syria become clearer. But at least large-scale gas sales to Turkey would give it a measure of leverage, with Ankara trying to diminish dependence on Moscow and Tehran. The Turkish market is stagnant or shrinking, so after years of delay, the Kurds need to move fast to cement a stake.

The Kurdish region would also need to reconcile its squabbling political factions, diversify the economy, cut down on pervasive corruption and slim a patronage-based, overstuffed public sector.

These moves would bear fruit whether the region becomes independent soon, later, or whether it stays in Iraq under a new arrangement. The Kurds can be successful, but they should not underestimate the difficulties. If an independent Kurdish region is to be more than a Neverland, its energy sector needs to go full steam ahead.

CPEC: A Game Changer for Pakistan's Energy Sector

By Sarmad Ishfaq, researcher at Qamar Energy

The China-Pakistan Economic Corridor (CPEC) is a massive venture consisting of numerous infrastructure projects undertaken throughout Pakistan with the aid of the rising power, China. The current value of the corridor is estimated around $62 billion and it will primarily consist of a 3000-km network of railways, roads, and oil and gas pipelines from Pakistan's southern port of Gwadar to China's Kashgar City. The CPEC project comes under China's 'Belt and Road Initiative' which endeavours to connect China more effectively with Eurasian and Middle Eastern countries. CPEC spans the length and breadth of Pakistan with work being conducted in all four provinces, and the administrative territory of Gilgit-Baltistan (which borders China).

Although, the vast umbrella of CPEC contains a copious number of projects, the work being done vis-à-vis energy might be the most essential for the country. Pakistan has been suffering an energy crisis (electricity and gas) since 2007 due to a huge disconnect in supply and demand. Electricity and gas load shedding has been commonplace in the country for around a decade. This energy crisis is not only tragic but is rather ironic as Pakistan sits on a plethora of untapped natural resources including coal, gas and oil. According to Dawn News, the total installed electricity capacity of the country is around 25000 MW but it faces a 4000 MW shortage due to a rift between installed capacity and actual production. Express Tribune reports that the primary sources of electricity production in the country are imported furnace oil (35%), local and imported gas (29%), and hydroelectric power (29%).

Concurrently, the country has also been marred by fuel shortages, specifically CNG (compressed natural gas), which became a popular and cheap alternative for motorists in recent years. Due to this distressing backdrop of energy related issues, CPEC's arrival is a godsend for the country.

Foreign Policy News remarks that under CPEC's "Early Harvest" scheme, energy projects are slated to provide around 10400 MW of electricity in the coming years – around $30 billion has been earmarked for these projects. The "Early Harvest" scheme highlights coal as an essential fuel source, with coal providing most of the country's new electricity. In the Punjab province, a massive $1.8 billion coal power plant (3200 MW) under CPEC is now fully functional. Furthermore, three huge coal based projects are expected to be built in the Sindh province – which also produces around 63% of the country's gas – and a 660 MW one to be built in the Balochistan province. It is estimated that in 2018 the energy crisis will subside or at least significantly improve as Pakistani and Chinese officials see most of the "Early Harvest" projects being completed before 2019 (some estimate 2017-2018).

Due to the power crisis, Pakistan has also been focusing on LNG imports, which began in 2015 to meet the power deficit. Pakistan's LNG demand has been rising as LNG imports have doubled to $965 million in the current fiscal year from the previous year. Under CPEC, a major gas pipeline which will stretch for 711 km from Gwadar to Nawabshah in Sindh, connecting to the main south-north gas trunkline, is currently under construction by a Chinese company. Under the same project, an LNG re-gasification terminal will also be constructed at Gwadar sea port. This pipeline project is supposed to be an alternative to the Iran-Pakistan gas pipeline.

With respect to oil, the province of Khyber-Pakhtunkhwa (KPK) is presently the largest producer in Pakistan – it produces above 50% of national output. KPK also produces 510 tons of LPG every day and 40 million cubic feet of gas. Under CPEC, a Euro-VI crude oil refinery will be established in Kohat district of KPK which will process local and imported crude oil into LPG, kerosene, motor oils, diesel and other products. The refinery will produce around 15,000 barrels per day (bpd) and is estimated to cost $300 million.

Not only is CPEC focusing on coal, oil and gas, it is also diversifying into alternative energy such as wind and solar power. Pakistan aims to generate 25% of its electrical demands by renewable sources by 2030. The second phase of the Quaid-E-Azam Solar Park near Bahawalpur (900 MW capacity) will be completed via CPEC by the company Zonergy. With regards to wind energy, one of the main projects includes the creation of Dawood wind farm (50 MW) which is in its completion stages.

Linking Gwadar's warm water deep-sea port to Western China is daunting yet not impossible as Pakistan and China already enjoy trade and tourism through the Karakoram Highway which stretches from Punjab in Pakistan to Kashgar in China. Under CPEC, new roads from Gwadar will connect to a revamped Karakoram Highway to Kashgar.

Initially, CPEC may have seemed as an overly ambitious plan being implemented in an erratic country, but due to the recent idyllic period Pakistan has enjoyed, many CPEC projects have come to fruition & will soon pay dividends. This encouraging period can be attributed to the 2015 Zarb-E-Azb operation which has curtailed Pakistan's other great nemesis, terrorism, to a major degree. The relatively sparse amount of terrorist attacks around the country recently has augmented Chinese confidence and might eventually attract other international investors.

Conversely, there are certain obstacles in the path of CPEC. The security condition

in the country might have improved but external actors like rival India have not made life easy for Pakistan. A relatively recent example is the alleged spy, Kulbashan Jadhav, who confessed to assisting anti-state Baloch rebels at the behest of India. Therefore, sensitive areas where CPEC projects are being undertaken such as Balochistan must be provided with extra security. Furthermore, China and India themselves are currently at odds in the Doklam border area near Bhutan as troop build-ups continue.

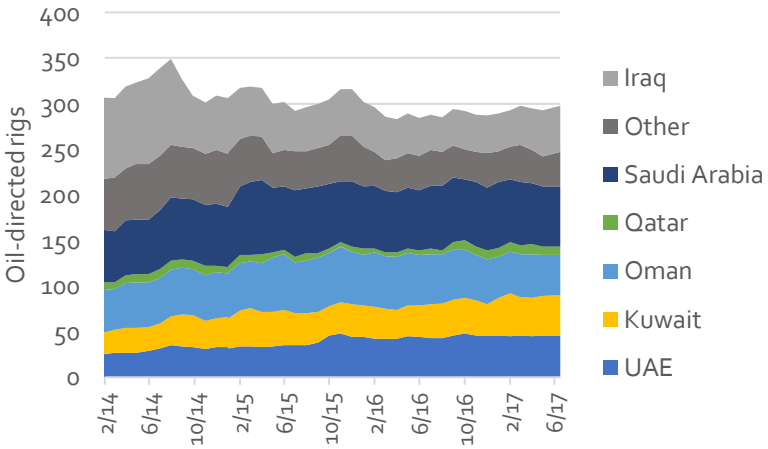
A further point of concern is Nawaz Sharif's ouster as the Prime Minister by the Supreme Court. This event, albeit significant, should not be exaggerated as an existential threat to CPEC as the current government, which sees CPEC as its crown jewel, is still in place, as are the Pakistani officials previously in charge of CPEC.

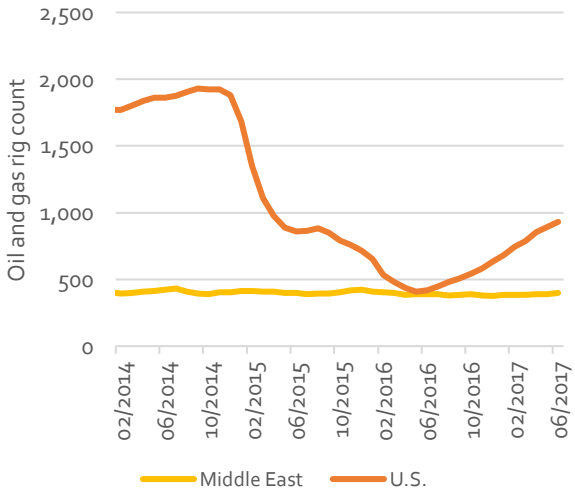
Simultaneously, the opposition political parties and the Pakistani people see CPEC as a beacon of hope and will not let it get undermined. Pakistan and China have considered each other integral allies and 'iron brothers' since many decades ago.

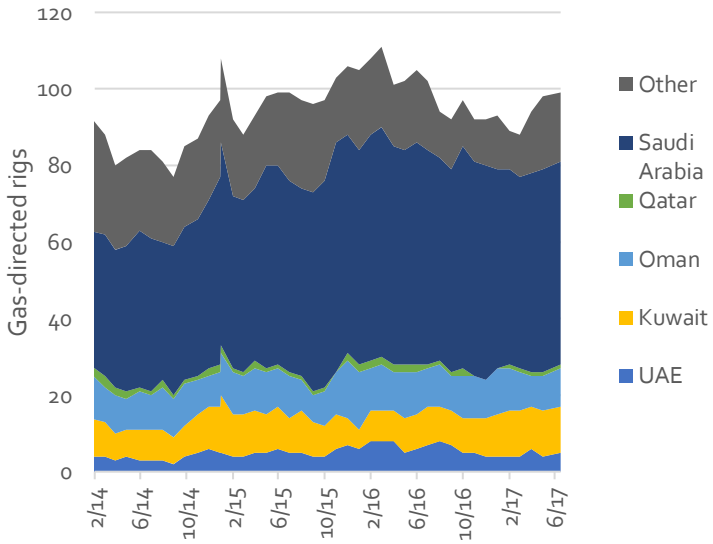
CPEC has already provided a necessary jolt to a previously stagnating economy and is expected to create around 2.32 million jobs for Pakistan & its burgeoning youth population in the coming years. Once labelled as an 'Asian Tiger', Pakistan may finally break free of its figurative shackles & cage via the CPEC venture.

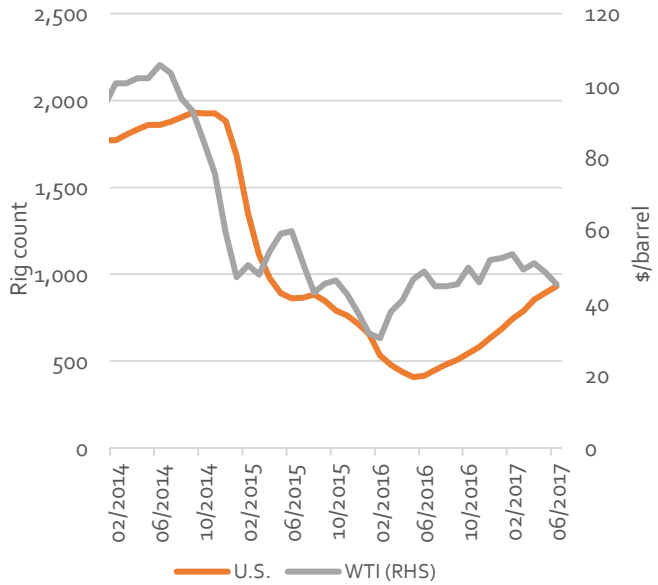
Rig count snapshot

- In June, overall Middle East oil rig count increased by +5 rigs and gas rig counts increased by +1 (not including Iran).
- **Oil rig count:** Kuwait +1, Oman -1, Other Middle East +5 (Pakistan, Sudan, Jordan, Syria, Egypt, Yemen).
- **Gas rig count:** UAE +1, Egypt +1, Oman +1, Other Middle East -1 (Iraq, Pakistan, Sudan, Jordan, Syria, Egypt, Yemen).
- In April 2017, there were 116 active oil and gas rigs in Iran according to Iran Drilling Information.
- Oil rig increase can be cited due to Egypt (+3) being the 3rd largest market for contract awards in 2016. Saudi Arabia had no increase possibly due to cutting supply (OPEC cuts).
- For 2016 the average number of rigs (oil & gas) for the US was 510. This average has currently increased to 816 in 2017 (January - June).
- For June 2017, the number of active rigs in the US amount to 931 which is the highest number since April 2015.
- Oil rigs are on the rise with higher efficiency lowering breakeven prices and higher availability of capital.









Rig count data: Baker Hughes; Oil price data: EIA

Fuel prices and subsidy reform

The UAE was the first GCC country to remove fuel subsidies in August 2015. The other GCC countries, Saudi Arabia, Oman, Bahrain, Qatar and Kuwait have reduced subsidies. The UAE and Oman set prices monthly based on market levels, while Qatar adjusts them monthly based on a discount to the market. The following table represents the prices of gasoline and diesel ($/litre) for July 2017 in the GCC countries.

	Old ($/litre)		New ($/litre)	
	Gasoline 95	Diesel	Gasoline 95	Diesel
Saudi Arabia	0.16	0.07	0.24	0.12
UAE	0.46	0.63	0.48	0.50
Qatar	0.27	0.27	0.45	0.41
Bahrain	0.27	0.42	0.42	0.37
Kuwait	0.21	0.36	0.34	0.36
Oman	0.46	0.39	0.47	0.49
US (pre-tax)	0.62	0.57	0.59	0.51

Source: EIA; News Sources

OPEC Watch

Strategy	Comments
Organization changes	• Created the Joint Technical Committee (JTC) to monitor adherence to the OPEC and NOPEC deal. • Saudi Arabia elected as OPEC president for 2017. • Equatorial Guinea joins OPEC as the 14th member. The country produces on average 250 kbpd. • Indonesia is open to re-joining OPEC, but only if it can determine its own production levels. No decision has been made on its membership yet.
Production limit (Libya and Nigeria exempt from deal)	• OPEC extended the deal for 9 months (to March 2018) to reduce OECD inventories to their 5-year average. • Libya & Nigeria are still not under the production cuts. Libya's output increased OPEC's production by 90,000 bpd – a 2017 high • The Libyan & Nigerian surges in production means OPEC output averaged 32.85 million bpd in July, around 1.1 million bpd above its supply target (adjusted to remove Indonesia and not including Equatorial Guinea) • Iraqi oil output has increased in July while supply also increased slightly for UAE, Gabon and Ecuador. Ecuador said it planned to abandon the deal, due to lack of finances. • Overall implementation of production cuts decreased to 78 percent from 95 percent in May after members including Saudi Arabia increased output • IEA says OPEC compliance with production cuts at lowest in six months
Support from non-OPEC (NOPEC)	• NOPEC agreed to reduce output by 558 kbpd, but compliance rate of less than 100% so far. • Highest compliance rate was in May at 86% compared to 72% and 53% in April and March respectively. • Russia announced it will cut full pledged 300 kbpd by the end of April, but by May it still did not reach full cuts (cut 281 kbpd in May). • Russian Energy Minister Alexander Novak said on Monday that Russia had reduced its oil output by 303,000 to 305,000 (bpd) so far in July. • Kazakhstan continues to pump more than it should and had a compliance rate of minus 145% for June. • 4th Meeting of JMMC (Joint OPEC-Non-OPEC Ministerial Monitoring Committee) was held in St. Petersburg, Russia, on 24 July 2017 to review the June 2017 report.
Next OPEC meeting	• The Joint OPEC-Non-OPEC Ministerial Monitoring Committee (JMMC) plans to meet in Abu Dhabi, UAE, next week (Aug 7-8) to discuss how to improve compliance of members that have not followed the production cuts fully. • 30 November2017 – 173rd (Ordinary) OPEC Meeting in Vienna, Austria • The 5th Meeting of the JMMC is scheduled to take place in September 2017, or earlier if deemed necessary.

Key MENA Energy Scorecard

Qatar crisis	🟠	⇔	Qatar filed a complaint with WTO against Saudi Arabia, UAE and Bahrain for violating trade laws; Qatar said it would raise LNG capacity by around 30 percent to 100 million tonnes per year; ExxonMobil, Shell and Total have all expressed interest in the expansion project; Total and Qatar Petroleum recently inaugurated their North Oil Co. joint venture; Qatar's LNG exports continue without interruption; Qatar turns down new LNG deals with Egypt; no interruption to LNG supplies; QP says ADNOC declares force majeure on Qatar condensate imports.
MENA energy price reform	🟡	⇔	Oman fixes fuel prices amid protests of high prices in front of the Ministry of Oil and Gas; Kuwait increased prices of electricity and water for May 2017 - upward pressure in inflation expected; Tunisia raises petrol price 6.7% to $0.726/litre on IMF advice
MENA unconventional oil & gas	🟠	⇔	Algeria considering shale gas again aiming to add unconventional gas production of 80 BCM to total output by 2025; Estimated that Algeria has 3rd largest amounts of shale gas resources worldwide; Saudi Arabia estimates it has around 16.9 TCM (600 Tcf) and has earmarked $7 billion for unconventional gas.
MENA alternative energy	🟡	⇧	According to MEED, $200 bn investment needed for renewable energy projects (67 GW capacity); DEWA's first phase of Al Maktoum Solar Park has received International Renewable Energy Certificate (I-REC); Oman's RAECO considering implementation of ~26 MW of PV capacity at RAECO existing power plants; Oman is creating a wind farm for ~$125 million which will have 25 wind turbines (2-3.5mw per turbine); Saudi Arabia issued request for qualifications for first large-scale wind project (400MW); Algeria to increase gas production and solar investments; UAE launches new energy vehicles club.
MENA nuclear power	🟡	⇧	Abu Dhabi's Baraka nuclear power plant will start running from next year –first of four reactors is 96% complete; UAE will host upcoming IAEA International Ministerial Conference on Nuclear Power in the 21st Century, in Abu Dhabi from 30th October to 1st November; Russia's State Atomic Energy Corporation (Rosatom) won approval from Turkey to build $20 billion Akkuyu nuclear power plant; contract for Egypt's first nuclear plant which will be developed by Russian firm Rosatom is ready to be signed
Energy infrastructure security	🟠	⇩	Reports of ISIS increasing presence in Libya may affect oil and gas production if ISIS creates strong presence; On the contrary Libyan National Army asserted earlier that the country's oil facilities are secured by the armed forces; Nigeria still plagued with insurgency, oil theft, militancy etc; Boko Haram recently kidnapped and killed some members of the Nigerian Mining and Geosciences Society and other professionals during oil exploratory work in the Chad Basin in the north-east; Niger Delta's energy infrastructure still under threat due to oil theft, sabotage etc
OPEC production	🟡	⇧	OPEC crude oil production averaged 32.61 Mbpd in June, +393 kbpd from May; Saudi Arabia and Iraq increased production to 9,950 Mbpd and 4,502 Mbpd; Libya had significant increase by 127 kbpd to 852 kbpd in June; Nigeria's oil production increased by 96.7 kbpd to 1733 kbpd in June; Venezuela's oil production declined from 1951 Mbpd in May to 1938 Mbpd in June – likely to decline further with increased political tensions.
East Mediterranean gas commercialisation	🟡	⇧	Vast gas reserves found in Zohr field in Egypt has led to interest in gas investment; Lebanon to open 5 new offshore blocks for exploration this year; Turkey and Indian companies bidding on Israeli gas exploration license; Cyprus, Greece and Israel making progress on agreement to build 2000-km East Med pipe; Israel extends offshore exploration bidding deadline by two months (to July) due to poor response.
Egypt energy reform	🟠	⇔	Egypt will hike electricity prices by up to 42% from Aug 1, 2017 for households but will keep energy subsidies in place three years longer than expected; Core inflation increased to 31.95% year on year in June from 30.57% in May.
Kuwait developments	🟡	⇔	Kuwait Petroleum Corp. (KPC) was aiming to increase non-associated gas and light oil production to 510 mmcf (14.4 mcm) per day and 200,000 bpd respectively by the end of the year; talk about reviving the PNZ gas plan with Saudi Arabia; Kuwait Development Fund granted $27 million loan to Djibouti for drilling up to 10 wells and construction of 15 MW geothermal power plant.
Abu Dhabi developments	🟡	⇧	Discussions with multiple parties on ADMA offshore concession renewal (March 2018), to be split into 2 or more parts; ADNOC planning IPO of its service stations unit; ADNOC has picked a local bank and 3 foreign lenders as bookrunners for planned IPO; ADNOC in talks to obtain a syndicated loan of around $5 billion for future expansion.
Iraqi Kurdistan (KRG) developments	🟡	⇔	KRG and Iraq discussed creation of joint committee to cooperate in oil and electricity sectors; Kurdish MP says Kurdistan now capable of exporting oil and gas to Turkey and can meet 50% of the country's needs.
Federal Iraq developments	🟡	⇧	Iran and Iraq have agreed to commission a feasibility study of oil pipeline to export Kirkuk's oil to Iran; July's average oil exports were 3.230 Mbpd, a decrease from June's 3.27 Mbpd and average sales price was $43.8 per barrel; deal is set to increase Iraq's gas imports from Iran by up to 5 times more (from 7 million cubic meters to 35)
Iran developments	🟡	⇧	Iran's largest solar plant, Mokran Solar Power Plants Complex, is open (20 MW); Iran signed a $5 billion deal with Total and China's CNPC to develop South Pars offshore field; Iran's oil exports increased by 45 000 bpd in July from June – Iran aims to raise oil output to 4 Mbpd by year end from an average of 3.8 Mbpd

🟢	Very positive	⇧	Improvement in last month
🟡	Positive	⇔	No change
🟠	Negative	⇩	Deterioration in last month
🔴	Very negative		

bpd = barrels per day
Bcfpd = billion cubic feet per day
Tcf = trillion cubic feet
MMcfpd = million cubic feet per day
Mbpd = million barrels per day
kbpd = thousand barrels per day

About Qamar Energy – what we do

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

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Oil traders

Oil service companies

National Oil Companies and governments

About Qamar Energy- who we are

Robin Mills will be speaking at Platts Crude Oil Summit on 12th December at H Hotel, Dubai, UAE.

Robin Mills

CEO

Robin established Qamar Energy to meet the need for regionally-based Middle East energy insight and project delivery. He is an expert on energy strategy and economics, described by Foreign Policy magazine as **"one of the energy world's great minds".** Robin is the recipient of the 2016 'Energy of Words' Global prize at the St. Petersburg International Economic Forum.

Prior to this, he led major consulting assignments for the EU in Iraq, and for a variety of international oil companies on Middle East business development, integrated gas and power generation and renewable energy.

Robin worked for a decade for Shell, concentrating on new business development in the UAE, Qatar, Iraq, Iran and other Middle Eastern countries, when he was described as the "Shell expert on Iran".

He subsequently worked for six years with Dubai Holding and the Emirates National Oil Company (ENOC), where he advanced business development efforts in the Middle East energy sector, including major gas import schemes for Dubai and upstream developments in Iraq, Qatar, Yemen, Pakistan, Turkmenistan, Algeria and elsewhere.

He is the author of two books, *The Myth of the Oil Crisis*, which evaluates global long-term oil supply, and *Capturing Carbon*, the first comprehensive overview of carbon capture and storage for the non-specialist. He is the columnist on energy and environmental issues at The National newspaper (Abu Dhabi), and comments widely on energy issues in the media, including Foreign Policy, the Financial Times, The Atlantic, CNN, CNBC Arabiya, BBC, Al Jazeera, Bloomberg, Sky News and others.

Robin has authored the ground-breaking study, *Sunrise in the Desert: Solar becomes commercially viable in MENA*, on solar power competitiveness in the Gulf (with PWC/Emirates Solar Industry Association) as well U*nder the Mountains: Kurdish Oil and Regional Politics* for the Oxford Institute for Energy Studies and *Risky Routes: Energy Transit in the Middle East* for the Brookings Doha Center.

He has been Non-Resident Fellow for Energy at the Brookings Doha Center. He holds a first-class degree in Geology from the University of Cambridge, and speaks Arabic, Farsi, Dutch and Norwegian.

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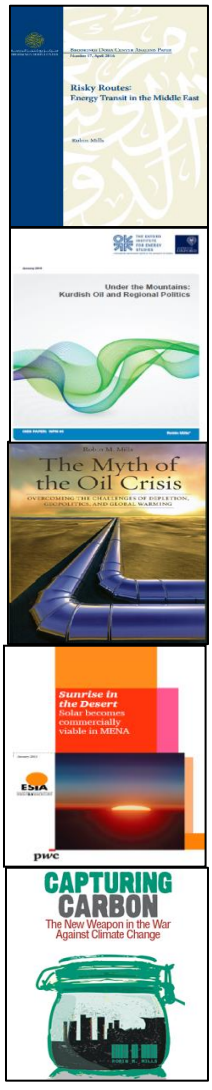

Robin Mills receives the 2016 'Energy of Words' at the Global Energy Prize in St. Petersburg, Russia.

For prize announcement click here