Monthly Newsletter: August 2013

ENERGY CONSULTING & PROJECT MANAGEMENT
استشارة و إدارة مشاريع الطاقة

Drilling activities in Sinai, Egypt. (1970s). Photo courtesy of Eni.

August 2013

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Contents

Syria crisis continues to threaten regional markets regardless of US action

By Robin Mills

If a Middle East war is fought without the participation of the United States, does anybody hear about it? Not in the oil markets, apparently.

Oil prices were up 3 per cent last week on the prospect of a US strike following the Syrian government's alleged use of chemical weapons, then fell more than US$1 as the British parliament voted against involvement. Société Générale warned of "spillover" into Iraq.

But this seems to miss the vicious civil war that has already been raging in Syria for more than two years, and that has already "spilled over" into Iraq.

Oil prices were up $8 per barrel last month, and only in the past few days were they driven by Syria, a minor oil producer even before the war. Concerns (mostly misplaced) about Egypt were one part; more important was the loss of production from Libya through protests. Iran exports have been halved by sanctions; Yemen and South Sudan are also suffering interruptions.

None of these disruptions have much, if anything, to do with Syria. But Iraq does.

Security in Iraq has deteriorated seriously this year. More than 600 people have been killed in bombings and other attacks in August alone. The northern pipeline to Turkey has been repeatedly sabotaged, with oil now spilling into the Tigris. So far the main fields and export facilities in the south have been unaffected, but there have been some worrying security breaches at the port of Umm Qasr.

The US perhaps convinced itself too quickly that Middle East oil was losing its importance. Its own rising production, led by shale development, would allow it to execute its vaunted "pivot to Asia". Despite the shambles left behind in Baghdad, Iraq's rising production would supply Asia, giving room for strangling sanctions on Iran.

US oil imports have indeed fallen sharply, to 1993 levels. Without this boost, recent turmoil would have taken us back to the $143 per barrel territory of 2008. But the US still imports 7.4 million barrels per day, close to total Saudi exports. Even before the recent attacks, Iraq's impressive expansion had stalled over infrastructure bottlenecks - though it may revive at the end of this year.

Saudi Arabia and the UAE have boosted output close to all-time highs to fill the gap, potentially easing markets by the end of the year - and underlining their continuing indispensability.

The US may be less vulnerable to oil price spikes now, but some of its major partners are not so lucky. When denominated in the slumping Indian rupee, oil prices reached record levels recently. Turkey, is also struggling to fund its current account deficit amid problems exporting to Middle East neighbours.

Growing need for their oil represents an opportunity for the new, more pragmatic and sophisticated Iranian administration to chip away at sanctions, and improve its negotiating position for the next round of nuclear talks in the face of an irresolute America. The oil minister Bijan Zanganeh's strategy lays out just such an approach.

Meanwhile, the Syrian government's other main backer, Russia, is happy for elevated oil revenues to keep bailing out its leaky economy.

The solipsistic western impression that the war in Syria only matters insofar as the US, Britain and France are involved overlooks not only the drawn-out human tragedy, but also the country's centrality to the Middle East.

If, as signalled, the US launches only limited strikes, oil prices will spike and then fall back.

But with still no signs of a comprehensive solution - military, diplomatic, political and humanitarian - the Syrian conflict will continue to undermine regional security and damage the world economy in a multitude of subtler but serious ways.

A version of this article appeared in The National newspaper on September 2nd, 2013

Benchmark Oman crude hits 6-month highs in August

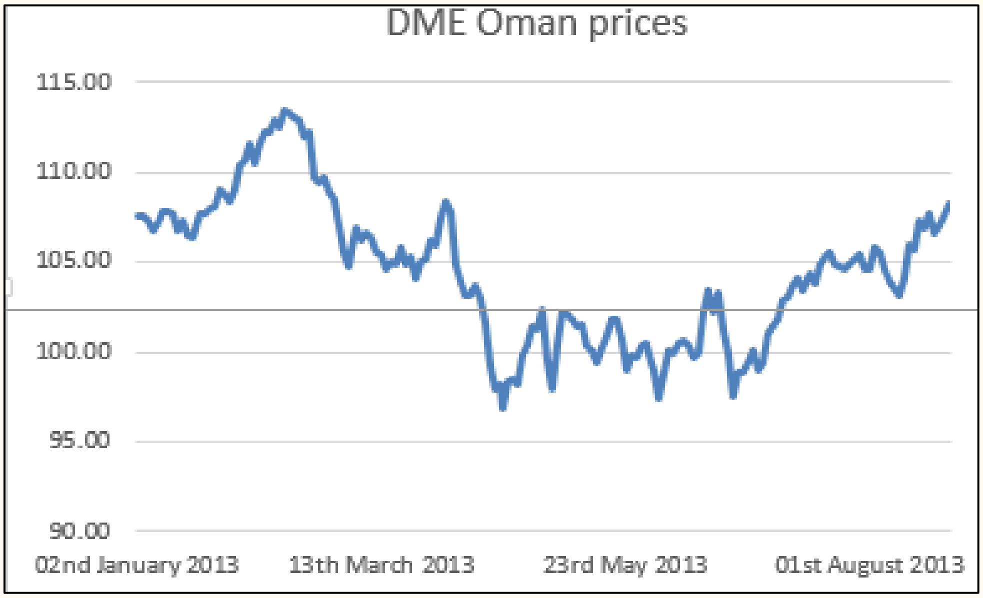
By Paul Young (DME)

Oman crude oil trading on the Dubai Mercantile Exchange rallied to six-month highs during August, as supply fears returned to dominate market sentiment. Front month October Oman traded a high of $109.35 at the time of writing (August 26), the strongest level since February of this year and pushing towards the 2013 high of over $114/b.

Oman oil prices are up more than 5% up from the monthly low on August 9, and have gained over 10% since early July when values were last below $100/b.

them can transit over 4 million b/d of crude. At the same time, the deteriorating situation in Syria has raised the prospect of a wider conflict in the region.

A scramble among buyers to secure Arab Gulf crudes has seen regional grades such as UAE's Murban and Iraq's Basra command big premiums. Basra Light on the spot market has traded at premiums of up to 30 cts/b over the Official Selling



Production losses from Libya, Nigeria, and the North Sea, combined with rising geopolitical tensions in the Middle East have added to the bullish momentum. In addition, speculation over a cut in Iraqi exports in September due to maintenance at the key Basra terminal has also boosted demand for crude in the region.

Upheaval in Egypt has raised fears of disruptions on Middle East crude transporting through the Suez Canal and Egypt's SuMed pipeline, which between

Price (OSP), while the distillate-rich Murban premium reached a six-year high of $1.20/b.

The strength of the Middle East market has also seen the gap between the European benchmark Brent crude and Oman narrow sharply – going from around $3/b at the start of the month to around $2/b in the final week of August.

However, the relatively high cost of crude has hit refinery profits in Asia, prompting fears that refiners may scale back activity as refining margins for sour crudes such as Basra turned negative for the first time in 17-months. A supply glut of high sulfur fuel oil in Asia has pushed relative HSFO values to a 2013 low of nearly $10/b under Oman crude.

Chinese demand remains the key driver on the consumption side and according to Chinese government figures, China's oil demand has averaged 9.87 million b/d in the period January-July, an increase of 5.1% on the same period last year. Crude imports were up 20% y-o-y to 6.17 mb/d, as the world's second-largest consumer builds stocks.

Energy consultant Wood Mackenzie released a report in August saying China is on track to spend $500bn a year on crude oil imports by 2020. It said Chinese net oil imports would rise to 9.2m barrels a day by 2020. The report predicted that China will overtake the United States as the world's biggest crude oil importer by 2017.

About DME

DME is the premier international energy futures and commodities exchange in the Middle East. It aims to provide oil producers, traders and consumers engaged in the East of Suez markets with transparent pricing of crude oil.

Launched in 2007, DME has rapidly grown into a globally relevant exchange. Its flagship Oman Crude Oil Futures Contract (DME Oman) contract is now firmly established as the most credible crude oil benchmark relevant to the rapidly growing East of Suez market. Reflecting the economics of the Asian region like no other contract, and the largest physically delivered crude oil futures contract in the world, DME Oman is the world's third crude oil benchmark and the sole benchmark for Oman and Dubai exported crude oil.

Manaar appreciates the assistance of the Dubai Mercantile Exchange in providing this market commentary

Expect oil markets to remain calm amid Egyptian fury

By Robin Mills

'Disruptions at the Suez Canal are unlikely, but markets never move on what's likely. They move on fear" - the opinion of Michael Hewson from CMC Markets. With violence and deaths in the streets of Cairo, Shell closed its Egypt offices and oil prices approached their highest levels this year. European Brent crude was up 5 cents to $109.77 on Friday, and US crude rose 12 cents to $107.45.

Mr Hewson was right. The likely impact of the events in Egypt - shocking as they are - on world oil markets is negligible. Prices were responding to more relevant factors.

On Friday, Iraq's northern pipeline was bombed again, meaning that exports to the port of Ceyhan in Turkey are essentially shut down. Iraqi oil shipments via the Arabian Gulf will fall next month while upgrades to its southern Basra terminals are under way. Libyan exports have fallen to their lowest levels since the revolution, as protesters block the Es Sider and Ras Lanuf ports. Iraq's and Libya's problems are their own, not related to violence in Egypt.

Meanwhile, economic news is reasonably positive, raising oil demand: the euro zone finally emerged from recession this month; and the US economy appears in good enough shape for the Federal Reserve to begin scaling back its quantitative easing programme.

Two interesting features of the market are more illuminating than the headline oil price. US crude rose more than Brent, just as it did during the downfall of the president Mohammed Morsi, even though Egypt's Suez Canal is more important for deliveries to Europe.

And the futures curve is backwardated - that is, prices for oil delivered in the future are lower than today's prices. This suggests that the market is temporarily tight but expected to be better-supplied in the future.

Egypt is a moderate-sized producer and slight net importer of oil. It is a significant transit state for oil via the Suez Canal and SUMED pipeline (from Ain Soukhna on the Red Sea to Sidi Kerir near Alexandria). SUMED carried 1.1 million barrels per day (bpd) in 2011, and boosted that to 1.7 million bpd during last year when extra supplies were required to replace the loss from Libya. The Suez shipped about 2.8 million bpd of crude oil and products in the first three months of this year.

The Suez's oil role, though, is exaggerated by the headline numbers. Most of the shipments through it net out - essentially crude oil and high-quality products (petrol and diesel) go north, while lower-value fuel oil returns south. Net trade is a mere 100,000 bpd.

The loss of Libyan and Ceyhan exports - both on the Mediterranean - does exacerbate any risk from Egypt. Saudi Arabia has already increased production from around 9.6 million bpd in June to 10 million bpd in July. As the Gulf summer wanes, Saudi domestic demand will drop, giving it more latitude to replace Libyan supplies to Europe, but that requires transit via Egypt - or a long journey around the Cape.

Keeping the Suez Canal open is a priority for any Egyptian government. If the canal were to be affected by sabotage or strikes, the impact on oil would be greatly outweighed by damage to world trade. Shipments of Asian goods to Europe would be interrupted, damaging the oil-hungry Chinese economy.

Meanwhile, West African supplies would be rerouted towards Europe, and Europe and the United States would release strategic stocks, designed exactly for such an eventuality. The US Strategic Petroleum Reserve's 727 million barrels alone could cover for SUMED and the Suez for more than two years.

So, while those who spin a story around market movements may be wrong in focusing on Egypt, oil traders are getting it right - a tale of short-term disruptions in Libya and Iraq signifying more than the fury in Cairo.

A version of this article appeared in The National newspaper on August 19th, 2013

Thanks to stronger oil demand 2013 will not mirror 1986

By Robin Mills

It was one of the great oil shocks of all time, but a negative shock: in 1986, the oil price halved as Saudi Arabia opened the taps.

The Soviet Union collapsed not long after; the major oil exporters and international oil companies endured a lost decade and a half.

Now, Professor Paul Stevens of the United Kingdom think tank Chatham House, writing in the Financial Times has pointed to the danger of a similar crash. But does 2013 really look like 1986?

The dramatic Saudi action was a response to three intersecting trends that had made the kingdom's policies untenable. Following the 1973-74 and 1978-80 oil crises, the price went up by a factor of 10, plunging the industrialised world into deep recession.

Consumers sought more efficient vehicles; large quantities of oil were still burnt for electricity generation and could be easily replaced with gas, coal and nuclear power. Global oil consumption fell 10 per cent from 1979 to 1983.

Oil production outside Opec responded to the high prices, accelerating high-cost projects envisaged before the crises. New technology unlocked offshore fields in the North Sea and Mexico, and in Alaska's Arctic tundra, while drillers returned in force to the old hunting grounds of Texas. Opec had held half of the world oil market in 1973-74; by 1985, it was down to barely a quarter.

Opec tried desperately to defend an unrealistic price target, about US$60 per barrel in today's terms.

But while Saudi Arabia and its Gulf neighbours cut output, other Opec members such as Nigeria, Algeria and Iraq took advantage. Saudi Arabia produced 10.3 million barrels per day (bpd) in 1980, but by 1985 it was down to 3.6 million bpd. At that rate, its exports would soon have reached zero.

And so in September 1985, the Saudi oil minister Ahmed Zaki Yamani, who had warned all along that Opec's price targets were unrealistic, sharply increased production. He intended to cause a price crash that would hurt Saudi Arabia's Opec rivals, bring them into line and burn off high-cost competitors elsewhere.

The strategy worked - eventually - but only after more than a decade of low prices and another price crash in 1998. For his pains, Mr Yamani was sacked by the late King Fahd Al Saud in October 1986.

Today's situation is alike and yet not alike - more a pale shadow of 1982 than a doppelganger of 1985.

Mr Stevens argues that rising competition and anaemic demand will lead to political upheaval in oil-exporting countries - and so to more volatile (but presumably lower) prices. However, this is not inevitable.

Prices are still strong. Saudi Arabia is facing competitors within Opec, notably Iraq, but this is so far mostly a future challenger, facing significant hurdles.

Sanctions on Iran and the revolution and post-war protests in Libya have so far rescued the Saudis, who have had to cut back only moderately, from 10 million bpd in mid-last year to about 9.1 million bpd now.

North American shale oil is driving strong non-Opec growth, and, contrary to what many commentators say, will continue to grow even if prices fall significantly. But other major non-Opec players such as Brazil have so far disappointed.

The biggest contrast with the 1980s is that global oil demand is still rising, driven by the Asian tigers and the Middle East itself. Electric, hybrid and gas-powered vehicles are making inroads but it is difficult to see a repeat of the early 1980s' 10 per cent drop in four years - comparable to removing the whole of China.

So Opec should still have time to set a realistic target - almost certainly lower than $100 per barrel - and adjust production, government budgets and development plans accordingly. Gradually massaging prices lower, to discourage competitors, would be wiser than for the Saudi oil minister, Ali Al Naimi to have to re-enact Mr Yamani's price war.

A version of this article appeared in The National newspaper on July 29th, 2013

Gulf is only going to get hotter – so we must be prepared

By Robin Mills

With temperatures in London set to rise as high as 33°C, Londoners complain they need to swathe themselves in damp towels to sleep, the M25 motorway that encircles the capital melted, and hospitals are treating heat stroke victims. The same weather in the UAE would be a pleasant spring day.

The "urban heat island" was first noticed in London as far back as 1810 - like other big cities, it is up to 5 degrees warmer than the surrounding countryside, as bricks and concrete retain heat, and dark surfaces absorb the sun's rays.

Britain's capital is not built for high temperatures: most homes don't have air conditioning, and the underground trains become uncomfortably hot.

This illustrates the importance of adapting to climate change. London swelters in moderate temperatures, just as Sharjah grinds to a halt in a rain shower a Londoner would consider fine weather. With the climate already hot and arid, the Arabian Gulf may feel it has little to fear from climate change - but this would be a mistake.

Of course, the Gulf countries need to reduce their own carbon footprint. They need to set an example by reducing their high greenhouse gas emissions. In future, their reputation as tourism and financial centres will be threatened, and their exports may face carbon tariffs.

More positively, research into low-carbon technologies for the Gulf can create new industries and diversify the economy.

But whatever the GCC does, significant climate change is unavoidable. When Ramadan again falls in the hot and thirsty summer, in the 2040s, regional temperatures are expected to be 3-5°C higher - meaning more strain on air conditioning.

Higher temperatures encourage the formation of smog and the spread of diseases.

Ecosystems in the already hot, saline Gulf will suffer further. Corals may die off from excessive temperatures and increasingly acid waters. Coral reefs are important breeding grounds for fish, and shelter coastlines from destructive waves. The eastern Mediterranean is expected to dry out, putting further stress on rural societies and fragile states in Iraq, Syria and Jordan - leading to more waves of refugees. Farther south, rainfall may increase, but this brings with it other dangers.

Cyclone Gonu, the strongest tropical cyclone to hit the Arabian Peninsula, killed 50 people in 2007 and caused US$4.2 billion of damage in Oman.

Both of Oman's desalination plants were shut down, and oil exports halted. Sea levels may rise by a metre or more by 2100, inundating fragile coastal mangroves. The UAE's nuclear plants in Al Gharbia, and the cultural district at Saadiyat, explicitly included rising seas in their planning. The Palm Jumeirah factors in a half-metre rise.

But many other key parts of Gulf infrastructure - the Jebel Ali port, the world's largest oil export terminal at Saudi Arabia's Ras Tanura, the power and desalination plants - could be threatened. Adaptation to climate change has to go beyond mere technical fixes to infrastructure and be an integral part of long-term plans.

Solutions should be both local and global. Climatic changes may be unexpected, so cities have to be resilient and flexible.

For instance, local solar power, better insulated homes and cities designed to stay cool can alleviate rising temperatures and strains on the electricity grid. Instead of passively waiting for government aid, people have to be prepared to support those within their community.

On the international stage, Gulf countries should work together with Middle Eastern neighbours on issues such as disaster relief, evacuations, dealing with people displaced by disasters, coastal protection, emergency food and water stocks, drought-resistant agriculture, back-up electricity grids and climate negotiations.

London's survival is not threatened by a heatwave. But in a more precarious climatic zone, the Gulf countries should remember that a blazing hot summer's day today may be 2050's normality.

A version of this article appeared in The National newspaper on July 23rd, 2013

Key MENA Energy Issues Scorecard

MENA gas price reform	🟠	↑	Egypt seeking to allow direct gas sales to major consumers
MENA unconventional gas	🟠	↑	Saudi Aramco to drill 7 shale gas wells; BP to build large gas plant for Khazzan tight gas
MENA renewable energy	🟢	⇔	Abu Dhabi installing solar water heating; Masdar research progress on solar PV cells, algal biofuels; Qatar to tender 1800 MW in 2014
MENA nuclear power	🟡	↑	Saudi Arabia says to build 16 reactors by 2030, first in 2023 (Manaar considers likely to be delayed after that); South Korea to build 5 MW pilot reactor in Jordan
Energy infrastructure security	🟠	⇔	Libya exports from Brega resume but disputes remain problematic; Libya threatens to fire on illegal tanker exports funding crime, separatism; Syria military action may further affect Iraq; further bombing on Iraq's northern pipeline; Yemen's Marib export pipeline bombed again; Sudan extends deadline to shut down South Sudan pipeline; concerns over Suez exaggerated
OPEC production	🟡	↓	OPEC production down 170 kbpd in July to 30.34 Mbpd, lowest since March, on Libya and Iraq disruptions, despite Saudi/UAE increase
East Mediterranean gas commercialisation	🟡	↓	Israel-Turkey pipeline suffering from Erdoğan's comments on Egypt; Israel partners reportedly discussing exports to Egypt; Lebanon Cabinet still unable to define blocks; test of Cyprus Aphrodite appraisal well shortly
Kuwait energy projects progress	🟠	⇔	Stronger Al Sabah presence in new cabinet; relations with Parliament may improve somewhat
Abu Dhabi concessions renewal	🟠	⇔	3.5 Mbpd production target likely to be delayed to 2020; new exploration award to OMV
Baghdad-Erbil oil agreement	🔴	⇔	KRG role affected by Syria; Erdoğan's domestic position weakened; little new news on KRG-Turkey pipeline but line is almost complete to Turkish border
Iraq oil production build-up	🟠	↓	Exports to fall further in September due to SPM work; security deteriorated; new fields to start late 2013; Iraq criticises Shell delays at Majnoon
Egypt subsidy reform	🔴	⇔	Gulf aid eases short-term fiscal pressure on government
Iran oil sanctions	🔴	↑	New oil minister Zanganeh assembles pragmatic team and plan; plans to offer discounts; output down 20 kbpd in July

Source: Manaar research

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

Energy Prices and Generation Costs in the Middle East

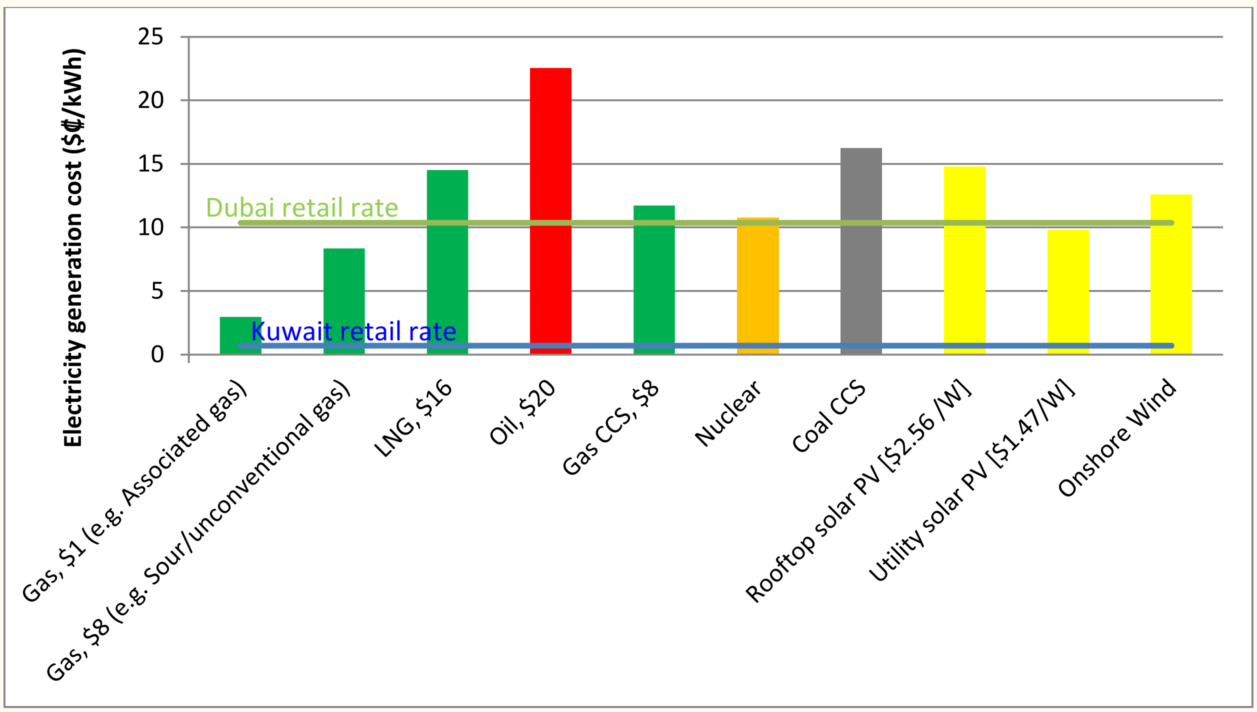
The following table represents August 2013 gasoline, diesel and electricity prices (top rate for residential consumers) in selected MENA countries, with the US for comparison, and the direction of change since last month.

		Gasoline ($/Litre)	Diesel ($/Litre)	Electricity ($₵/kWh)
Saudi		0.21	0.09	6.9
Qatar		0.25	0.25	2.7
Bahrain		0.27	0.17	4.2
Kuwait		0.32↑	0.27	0.7
Iraq		0.34	0.72	6.7
Yemen		0.35↓	0.47↑	7.9
Oman		0.40	0.48	7.8
UAE	Dubai	0.48	0.95	10.35
	Abu Dhabi	0.48	0.64	4.0
	Sharjah	0.48	0.95	8.0

	Gasoline ($/Litre)	Diesel ($/Litre)	Electricity ($₵/kWh)
Egypt	0.59	0.46	6.8
Iran*	0.69**	0.35**	1.65**
US	*0.94*↓	*1.03* ↑	*12.54*↑
Lebanon	1.17↑	0.88↓	13.3
Jordan	1.29↓	1.14↑	33.2

* Non-subsidized allocation, at current (volatile)
** Values changed mainly due to changes in the exchange rate
Open-market exchange rate (US$1:IR 29000)
Source: Gulf Oil Review; Manaar research

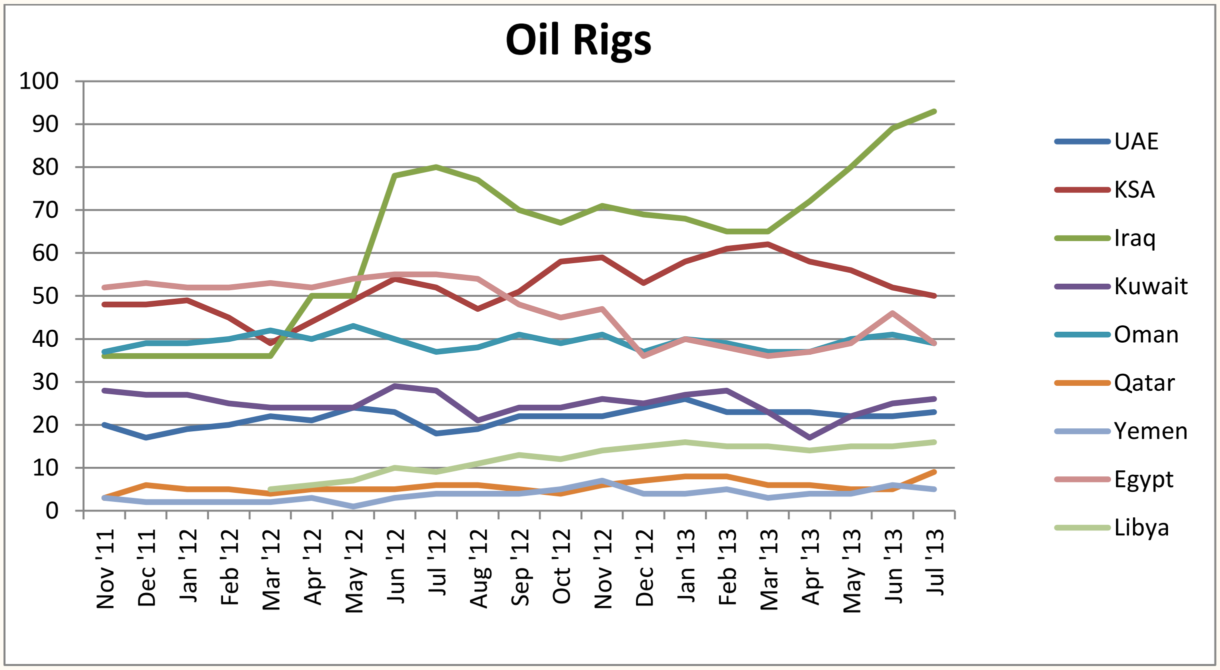
Note: The figures of the gasoline and diesel in the table above represent the pump prices. Only the US, Lebanon and Jordan prices can be considered non-subsidised.



Main changes: increased capital cost of nuclear in line with UAE programme; reduced uranium price; included nuclear decommissioning costs; included onshore wind in UAE conditions; differentiation of utility-scale and rooftop solar; inclusion of 1 c/kWh transmission & distribution credit for rooftop solar; slight increase to assumed LNG price; significant increase to capital & operating costs of coal CCS based on latest EIA assessment; minor changes to costs & heat rates for other plants based on latest EIA assessment.

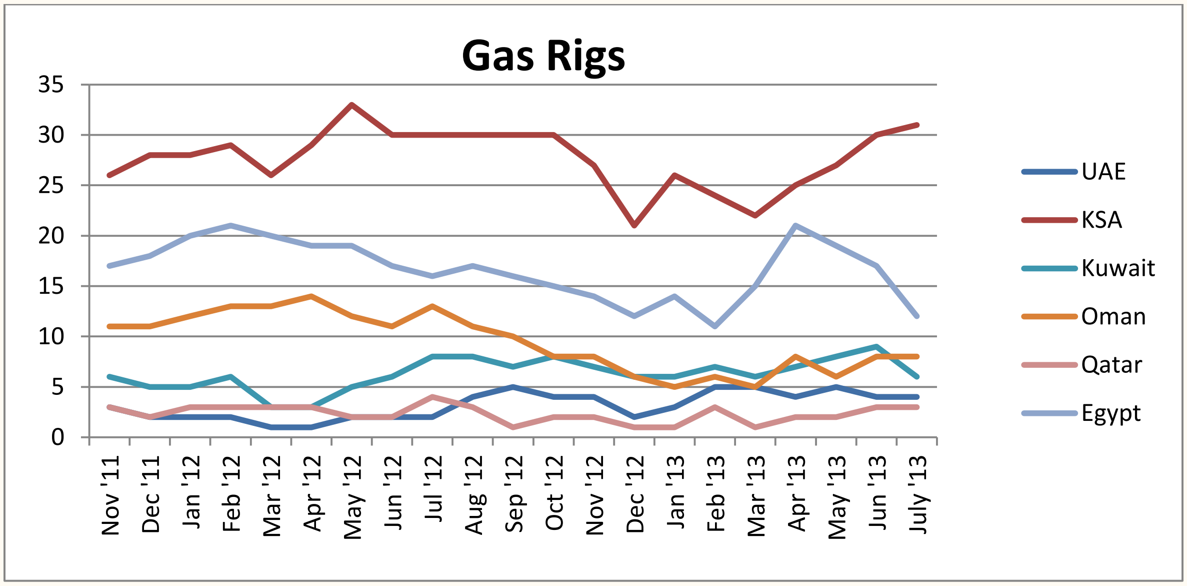
- Utility-scale solar PV is now clearly a more economic option than LNG- or oil-fired power generation, even allowing for the cost of back-up plants
- Gas CCS, though higher cost than solar and nuclear, could still be a viable low-carbon option, particularly if combined with use of CO_2 for enhanced oil recovery
- Coal CCS is much less attractive now, due to the significant increase in its capital and operating costs
- Unconventional gas remains economically attractive, still with a 15-25% cost advantage over nuclear and solar PV
- Onshore wind (based on UAE conditions), even with gas backup, appears competitive with LNG-fired power, but may be limited to suitable sites
- In the GCC, only Dubai has top-rate tariffs that are representative of the new era of generation costs

Regional Energy Statistics



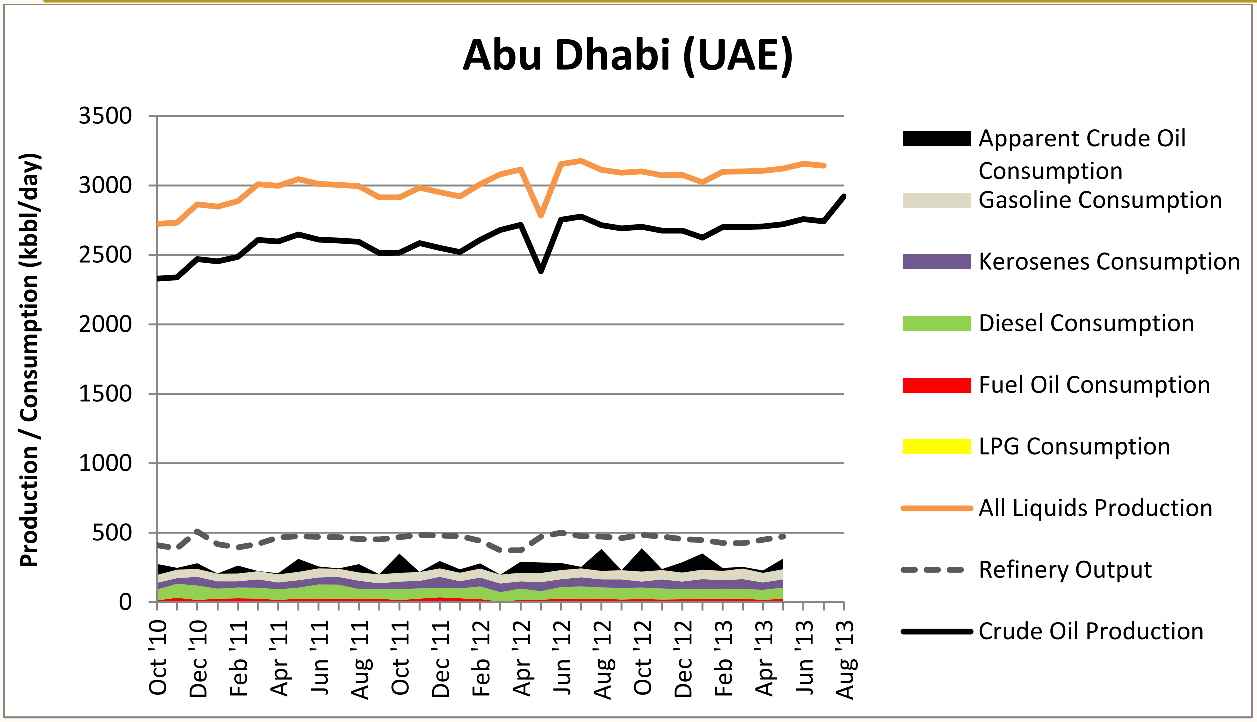
Source: Baker Hughes, Iraq: Baker Hughes and OPEC Monthly Oil Market Report

- Saudi Arabia drilling continues to decrease for the fourth consecutive month; however, the Kingdom is expected to increase to a record 170 rigs (oil + gas) by the end of 2014 due to Khurais and Shaybah expansions
- Iraq strengthened its position as the leading MENA country in drilling with oil rigs reaching over 90 in July.
- Egypt rig count dropped slightly in July and remains well below 2012 levels.
- All other countries' rig counts remained quite stable over the month

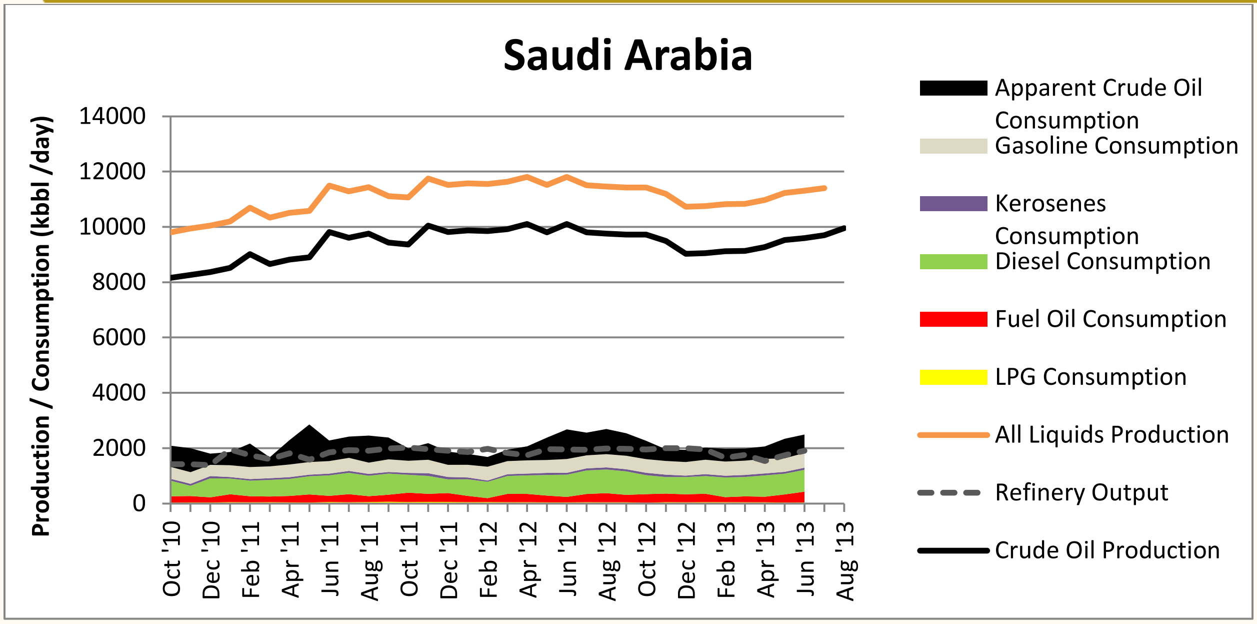


Source: Baker Hughes

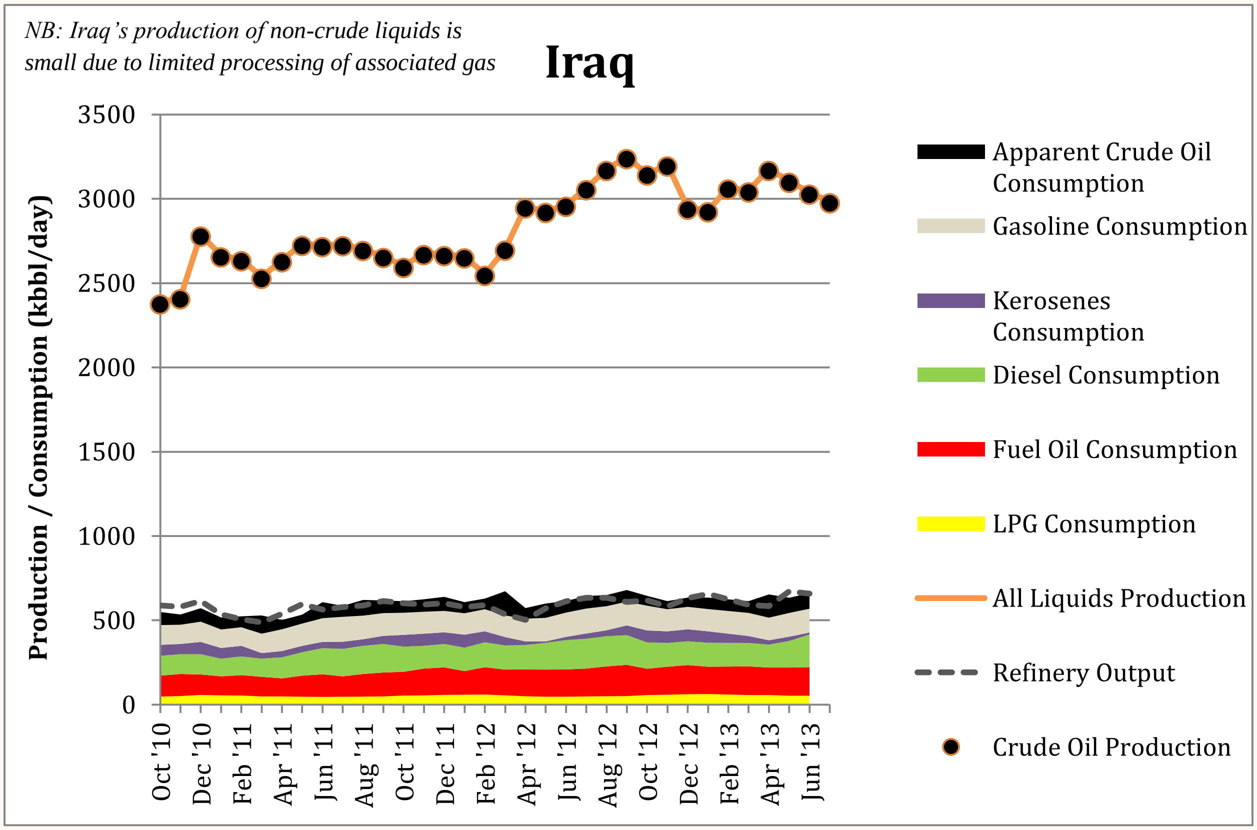
- Saudi Arabia's gas drilling continued to increase in July.
- Egypt's rig count continued to fall for the third consecutive month after reviving in April
- All UAE gas rigs are located in Abu Dhabi; there are no current gas projects in Dubai.
- Oman's rigs bounced back in June to reach April's level, after a slight drop in May, and remained stable throughout July.
- Kuwait witnessed a drop in July to reach a total gas rig count of 6

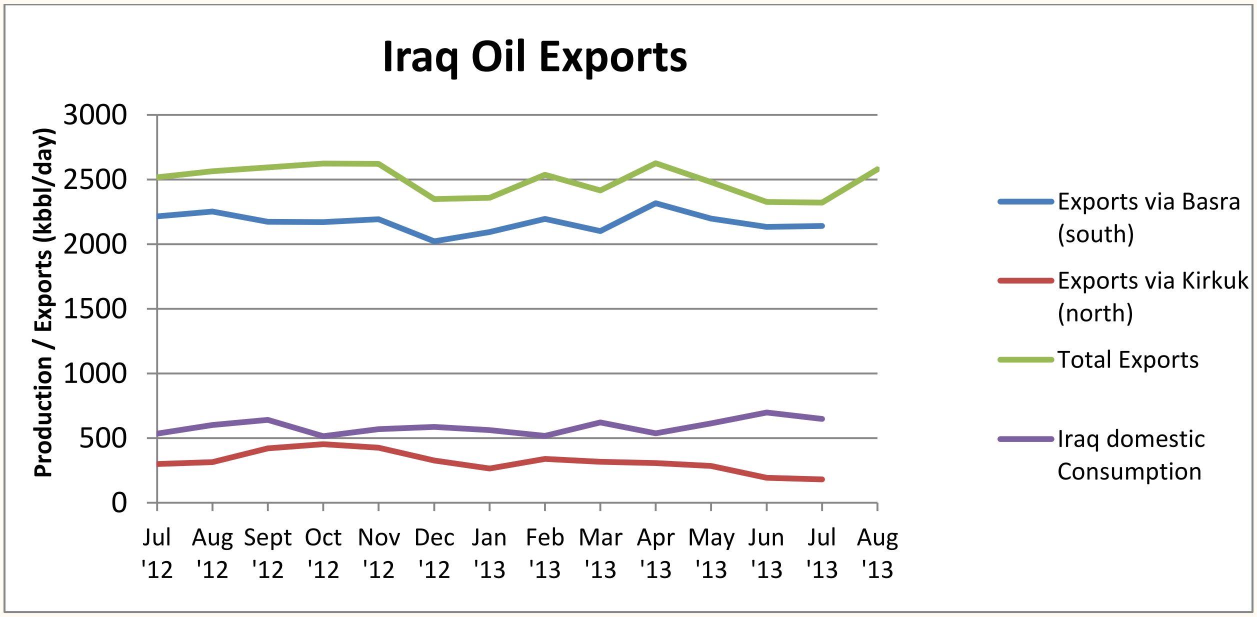


- Abu Dhabi's crude oil production remained stable in July, however the UAE's total crude oil production increased significantly in August, to reach 2.92 Mbpd, the highest level recorded in 24 years, in response to disruption to production in Libya and Iraq.
- The country recently updated its consumption figures. This was the first update since December 2012, and it shows that total consumption has been fairly steady at around 220 kbpd. Apparent crude oil consumption is probably mainly related to unreported stock changes and refinery losses.



- Saudi crude oil production increased by 97 kbpd in July to 9.6 Mbpd, to help cover losses from Libya and Iraq as well as meeting increased domestic demand in summer
- In August, Saudi crude oil production witnessed a major increase to reach 9.95 Mbpd in response to the disruptions in Libya and Iraq
- Saudi crude oil exports decreased slightly in June
- Domestic consumption increased in May and June, with fuel oil and direct crude oil consumption expanding as the summer season arrives. However direct crude burning is lower this year than 2012 or 2013 due to more use of fuel oil and gas

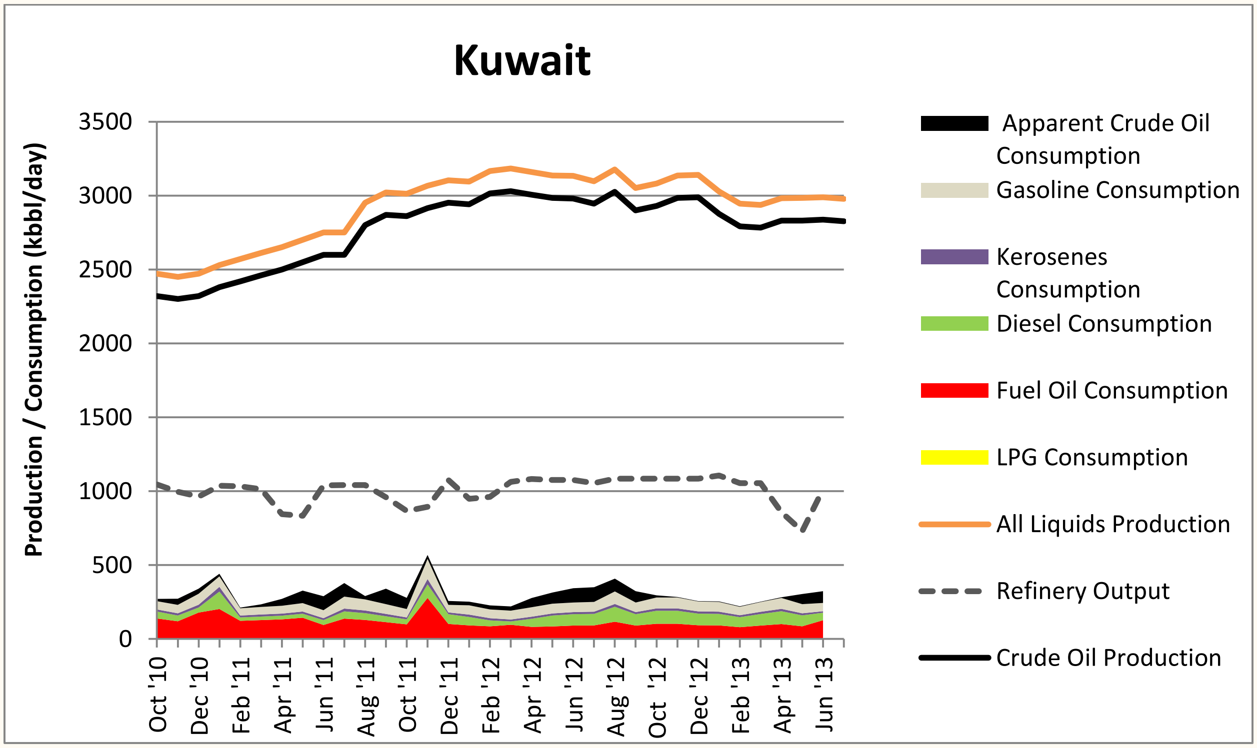




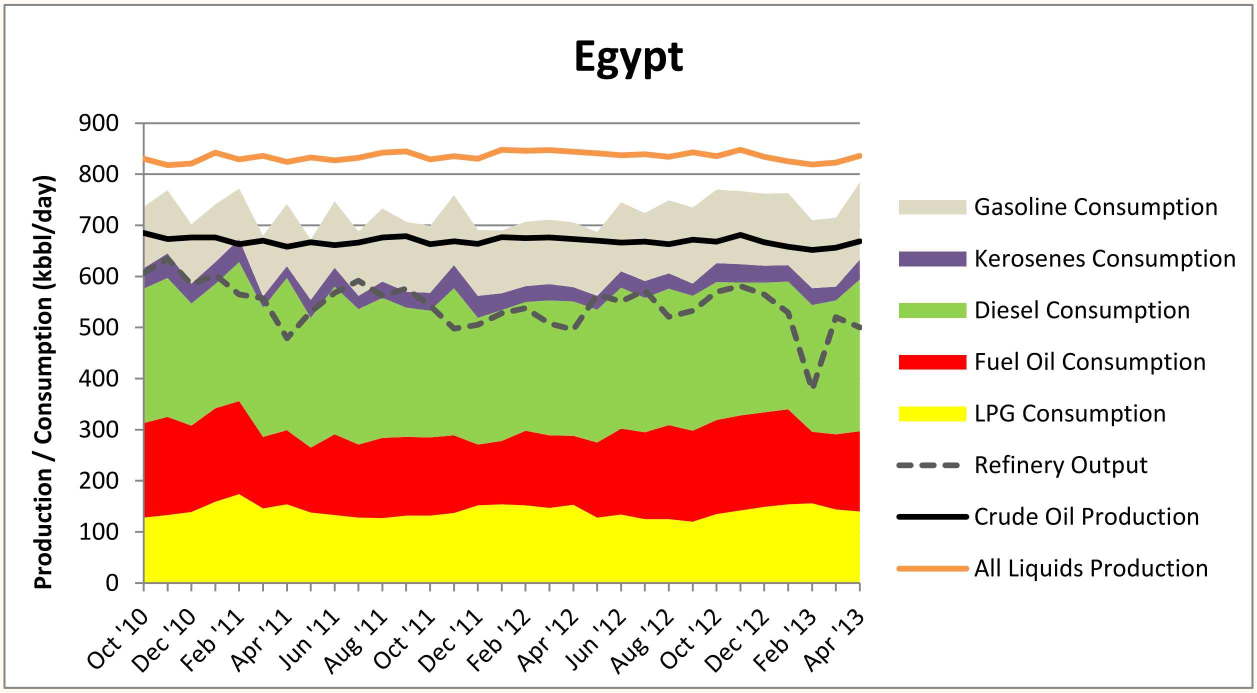
Source: Iraq Oil Ministry

- Iraq's crude oil production continued to fall for the third consecutive month
- Iraq's refinery output stabilised after a slight increase in May.

- Iraq's crude oil exports dropped slightly in July for the fourth consecutive month to reach a 15-month low; this was mainly due to the latest bombing of the Kirkuk pipeline to Turkey. The southern exports went slightly up in July.
- However in August total exports were reported as 2.579 Mbpd, the highest level since April (the split between north and south was not available)
- Exports are expected to drop significantly in September due to the planned major upgrade of the southern terminal
- Iraq's output is expected to increase by 400 kbpd by the end of this year as Shell starts production at Majnoon in October (175 kbpd), plus the start-up of Gharraf (Petronas/Japex) in August, at an initial 35 kbpd



- Kuwait oil production was steady in July.
- Crude and fuel oil consumption increased in May and June due to the high temperatures in the summer.
- Kuwait faced a drop of its refinery output by almost 200 kbpd in April and throughout May, but it bounced back in June to reach 1014 kbpd.



- After the sharp increase of refining in March, there was a slight decline in output in April.
- Fuel oil and diesel consumption increased due to the increasing temperature and upcoming harvest
- Egypt has not updated its figures since April 2013

Source: JODI, OPEC, Middle East Economic Survey & EIA

NOTE: All crude oil consumption values are apparent due to unreported / misreported stock change values and refining gains/losses.

Recent & Forthcoming MENA Licensing Rounds

Country	Round	Launch Date	Blocks on Offer	km² offered	Blocks Awarded	Closing Date
Egypt	EGAS	Jun – 12	15	57,300	8	Feb – 13
Egypt	Ganope	Dec – 12	20	125,577	-	May - 13
Iraq	5th Licensing Round	NA	10	NA	-	NA
Lebanon	1st Licensing Round	May – 13*	10	17,901	-	Nov -13
Oman	MOG	Jan – 12	4	26,837	2	Aug – 12
Oman	MOG	Nov – 12	7	103,422	-	Jan – 13
Yemen	6th Licensing Round	Sep – 12	5	20,132	-	NA
Yemen	March 2013 Licensing Round	March – 13	20	222,812	-	May - 13

Updates since last issue in red

Source: Deloitte; Manaar Research

* The Lebanese bid round has been delayed from the planned deadline of 2nd September due to political disputes over the caretaker Cabinet

Current studies

Hydraulic fracturing

Manaar has recently completed a study of the market for hydraulic fracturing in the MENA region, with PacWest Consulting. The report is available in MENA-only (29 pages) and worldwide versions (45 pages including the MENA section). The report addresses historical and forecasted frac demand, supply, utilization, constraints and trends. Market coverage also includes current hydraulic fracturing projects, unconventional potential assessments and detailed basin and play maps. The majority of the information gathered in the reports relies on primary intelligence: in-depth surveys and conversations with industry leading experts and technical specialists.

Dimension	Score	Description
Geology		▪ Excellent geology that underlies the most prolific petroleum system in the world; Rub' Al Khali results disappointing thus far
Pricing regime		▪ State-set at very low $0.70 per mcf; unlikely to change soon; very problematic for foreign operators seeking JVs; less of an issue for Aramco, which wants to displace oil
E&P diversity		▪ Aramco dominates; JVs with three IOCs in the Rub' Al Khali have been disappointing; fiscal terms are difficult
OFS capacity		▪ SLB and HAL already serve the country, and BHI and others should enter the market in the next few years
Regulatory landscape		▪ Aramco is able to operate with little government interference, but challenges exist for foreign operators, if allowed to operate in unconventional development at all
Infrastructure		▪ Very well-developed infrastructure from existing petroleum output in Ghawar and northwest, but Rub' Al Khali is isolated
Development constraints		▪ Public very supportive of increased output
Weighted Score	2.6	

Figure 1. Country attractiveness matrix for Saudi Arabia

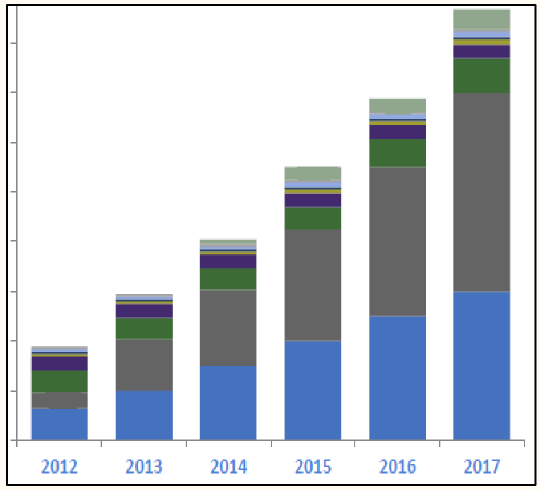


Figure 2. Forecast frac capacity, per MENA country

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MENA petrochemicals

Manaar is preparing a potential study of MENA petrochemicals and gas feedstock. The study will focus on

- the current gas situation in MENA,
- implications for petrochemicals in the region
- the downstream / speciality petrochemical value chain
- competitiveness of MENA petrochemical companies versus the US, EU and Asia

This study will be of key interest to large Gulf-based and international petrochemical producers and gas suppliers.

Manaar has prepared a study on the impact of global shale resources on MENA. The study will focus on:

- The strengths, weaknesses, threats and opportunities of unconventional gas in the MENA.
- Differences in the development of unconventional gas between North America and MENA.
- Identifying MENA's unconventional gas potential; understanding current and planned activity levels per country, company and basin.
- The impact of the shale boom on future demand for MENA oil & gas, oil and gas prices, possible new pricing hubs, and oil and gas exports.

Recent & Forthcoming Events

Jaafar Altaie spoke on Iraqi oil development at the 17th Asia Oil and Gas conference in Kuala Lumpur on 9th – 11th June 2013.

Robin Mills spoke on "The Arab Spring & European Energy Security" at a forum organised by the Frankfurter Allgemeine Zeitung in Frankfurt, Germany on 10th July 2013

Robin Mills will speak at MEED UAE Oil and Gas Greenfields Conference, in Sofitel Abu Dhabi, UAE on 10th September 2013

Robin Mills will be speaking on Middle East Shale gas at the Association of Geoscientists and Engineers (EAGE) at the Dead Sea, Jordan on 16th September 2013

Robin Mills will be speaking on East Mediterranean gas and politics at the National Defense University (NDU) in Washington DC, USA on 18th September 2013

Robin Mills will be speaking on Middle East electricity and gas challenges at the Arabian Power and Water Forum in The Address hotel, Dubai Marina, UAE on 23rd September 2013

Please visit the links below to view some of the presentations by Manaar:

MEED Kuwait Energy & Infrastructure Projects Kuwait, November 2012

Middle East Energy Outlook; British Business Group, Dubai, 2012

Key Manaar people

Jaafar Altaie,
Managing Director

Jaafar founded Manaar in 2009 in response to growing international interest in Iraq. With a background in economics and engineering, Jaafar has worked for BP, Nomura, Petrobras and the Iraq Ministry of Oil.

Robin Mills,
Head of Consulting

Robin is an expert on Middle East energy strategy and economics. He is the author of two books and a prolific writer on energy and environmental issues. He worked for 15 years in geology and economics for Shell and the Dubai government.

Chad Al-Sherif Pasha
Advisor

Chad is a geo-political advisor and senior project manager with a successful track record developing strategic initiatives with corporations and governments. He has particular expertise in Central Asia.

Roa Ibrahim
Industry Analyst

Roa Ibrahim received her Bachelor's degree in Finance from the American University in Dubai and her Master's degree in Applied Finance and Banking from the University of Wollongong in Dubai. Roa has produced expert analysis of petroleum fiscal systems, hydraulic fracturing and shale gas.

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