



The PV plant at Masdar City in Abu Dhabi produces 17,500 MWh of clean electricity annually and offsets 15,000 tons of carbon emissions per year. Photo courtesy of Enviromena Power Systems

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CGES

CENTRE *for* GLOBAL
ENERGY STUDIES

Announcement of strategic partnership between Manaar Energy Consulting and the Centre for Global Energy Studies

Manaar Energy Consulting & Project Management, the energy consulting company specialized in the Middle East, and the Centre for Global Energy Studies (CGES), the leading and well recognized authority on the economics and geopolitics of oil and gas, jointly announce the formation of a strategic partnership.

Manaar Energy Consulting and CGES have a shared objective: to provide energy knowledge to our clients which strengthens their strategies, business development and operations. As part of this alliance, CGES and Manaar will be able to offer more comprehensive and detailed studies on oil and gas economics in the Middle East, particularly the fast-developing UAE and Iraq sectors.

Integrating our knowledge, experience, contacts and research databases creates great opportunities in diversifying the product portfolio, particularly in more specialized and more operational studies which are not currently available in the market. The partnership will also assist us in providing locally-based coverage to clients both in the UK and Middle East.

“We are looking forward to working with CGES and hope to leverage on our partnership to grow and support our customers. This is a time of major change and growth in the Middle East oil and gas industry, and this alliance will offer unique insights and business value,”
said Jaafar Altaie, Managing Director at Manaar Energy Consulting.

Read more on <http://manaarco.com/people.html>

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Unwise to predict stable oil prices in this unpredictable world

By Robin Mills

The New York Times was recently bold enough to write “it is likely that the world has already entered a period of relatively predictable crude prices”. This statement might soon recall the American economist Irving Fisher, who wrote “Stock prices have reached what looks like a

permanently high plateau” three days before the famous 1929 crash.

The newspaper based its claim on surprisingly stable prices over the past three years of geopolitical and economic upheaval, the emergence of new oil supplies – particularly US shale – and growing energy efficiency.

I would prefer to go with the great financier JP Morgan who, asked what the stock market would do, replied, “It will fluctuate”.

The illusory stability of oil prices over the past three years has been due to accidental factors. Oil producers enjoyed Goldilocks geopolitical upsets – crises hot enough to keep prices appetisingly high, not hot enough to exhaust the spare capacity of Saudi Arabia and its Arabian Gulf allies.

Ahmadinejad, Chávez, Qaddafi and Mend (the Movement for the Emancipation of the Niger Delta) were Saudi Arabia’s best friend. Even though two are dead, one out of office and one observing a shaky ceasefire with the Nigerian government, they continue to influence oil markets.

The former Iranian president Mahmoud Ahmadinejad’s confrontation with the West over his country’s nuclear programme took more than a million barrels per day off the market through sanctions. Venezuela’s production has

never recovered from strikes and politicisation under the late president Hugo Chávez.

Muammar Qaddafi's criminal misrule and violent overthrow virtually shut down Libya's 1.6 million barrels per day, and after a swift initial recovery, it has been disrupted by protests and strikes since.

Though Mend's guns are silent, a criminal web with Nigerian official collusion has spread across the Delta, tapping into pipelines and stealing perhaps 100,000 barrels per day.

Lesser producers in Yemen, Syria and South Sudan were also taken offline during the last three years by sabotage, civil war and pipeline disputes.

Against this backdrop, the global economic recovery was only tepid, while rampant US shale output repeatedly exceeded projections. The British think tank the Oxford Institute for Energy Studies has argued that, because oil prices have remained steady, North American shale production does not qualify as a "revolution".

But clearly, as the institute acknowledges, without shale prices would have been much higher, and Saudi Arabia would have had to run to its maximum capacity of some 12.5 million barrels per day. It would have been nearly impossible for the US to impose and enforce such wide-ranging sanctions on Iran.

Another crisis at the same time – say, military action against Iran, political upheaval in Algeria or widespread violence in the south of Iraq – would have meant a global oil shock. But if political problems had been subdued, prices would have fallen and Saudi Arabia might have demanded cuts from its Opec colleagues.

Compare the last three years to the dramatic boom between 2003 and 2008. Then, as now, there were a series of disruptions to production, from Venezuela and Nigeria to Russia and Iraq – none huge in itself, but adding up. But unlike today, Chinese demand grew explosively while non-Opec production stagnated, leading inexorably to the record price of US\$147 per barrel in July 2008.

During 1974-1978 and 1982-1985, after the last two great oil shocks, prices fluctuated in a band of no more than 20 per cent. But they were still unsustainably high – it just took time for unsustainability to become apparent. The core Opec countries can defend the current level for another year or two. But if there is no further major crisis, those "predictable" oil prices may become a steady slide.

A version of this article appeared in The National newspaper on October 20, 2013

Benchmark Oman crude range bound at \$105 – 108/b for October

By Paul Young (DME)

Oman crude oil trading on the **Dubai Mercantile Exchange** in October were locked into a narrow range of \$105/108 per barrel, with the front-month December contract expiring at 107.63/b, an improvement of around \$2/b compared to one month ago.

However, the US government shutdown in October and poor refining margins set the Middle East market on a relatively sluggish course over October and the monthly average of the DME, which is used by Oman and Dubai to set their official selling price (OSP), was the lowest

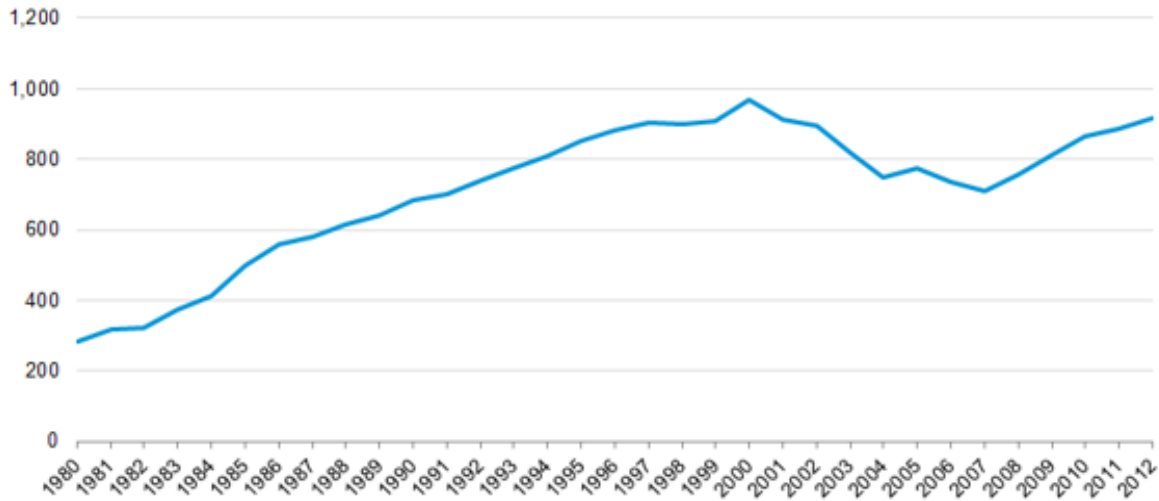
level since July of this year at \$106.71. It was also 1.7% down on the September average of \$108.58.

European benchmark Brent crude fell by a similar margin over the course of the month, maintaining the Brent/Oman spread at around \$2/b, but US benchmark WTI was the big loser at around 6% lower on the month, having fallen to around \$96/b due to the overhang of crude in the US.

Adding to the mildly bearish sentiment for the Middle East, refining margins have been poor for Asian refiners in recent weeks – which means buyers processing the crude into finished products such as gasoline, diesel and jet fuel are struggling may be forced to cut back on Middle east crude volumes.

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Oman crude oil and lease condensate production, 1980-2012
thousand barrels per day

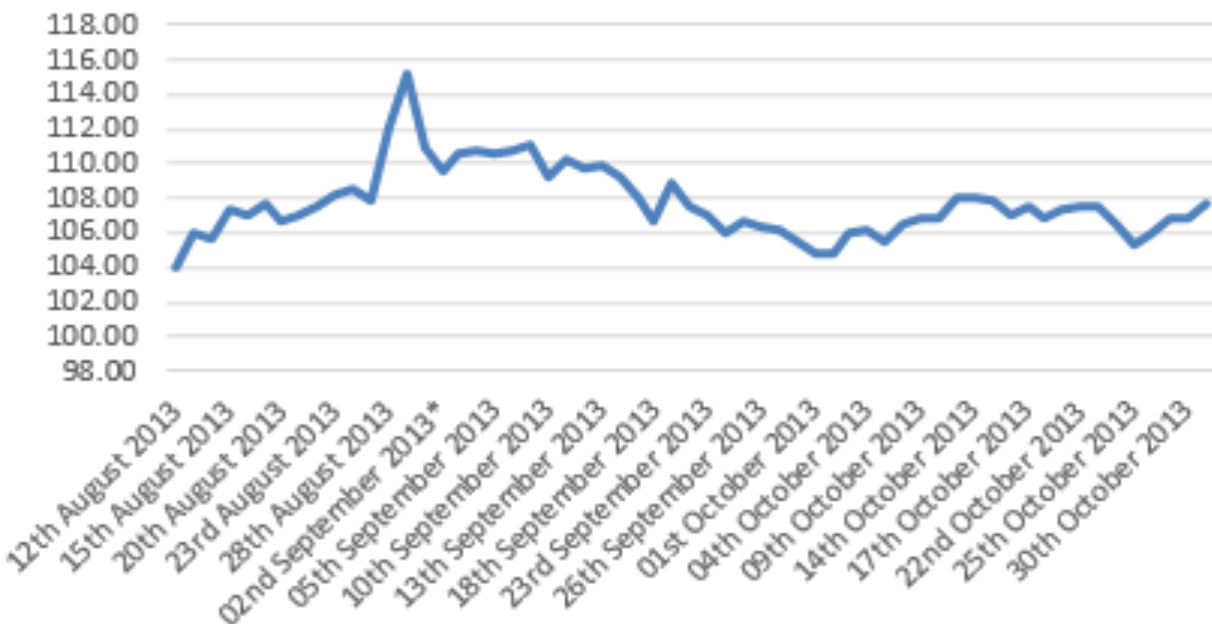


But supply disruptions from OPEC member Libya continue to lend support to prices and investment bank Goldman Sachs said OPEC crude production will decline this year by more than the bank previously estimated because of renewed disruptions in Libya. The bank said this

will underpin Brent prices at around \$110/b, which in turn would support Oman prices at around \$108/b, based on an implied Brent/Oman spread of \$2/b.

Libya was said to be exporting just 150,000-200,000 b/d of crude by the end

DME Oman crude



of October, just a fraction of its 1.25 million b/d capacity, as internal strife continues to paralyze the oil and gas sectors.

The cuts in Libyan oil have been at least partly offset by Iraqi exports, as volumes increase following on-going upgrade work at the Basra export terminal. Exports from Iraq's southern terminals have averaged 1.92 million barrels per day (bpd) so far in October, according to shipping data tracked by Reuters, which is up from 1.67 million b/d in the first 16 days of the month and September's 1.82 million b/d.

Meanwhile, Oman production hit a 13-year high of over 950,000 b/d during September and October, as enhanced oil recovery techniques and new crude streams boost output. Oman production previously hit a peak of 970,000 b/d at the turn of the century.

Oil watchers are also keeping eyes on technical and diplomatic meetings regarding Iran's nuclear program which could lead to an easing of sanctions on Iran, but any increase in Iranian exports would appear some way off.

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

A lot of work ahead for Dubai's green energy plans to take shape

By Robin Mills

Simultaneously with the visit of the Expo 2020 delegation to Dubai in mid-October, the emirate opened its first large solar power facility, and released its State of Energy Report.

The report's green vision fits with plans to meet half of the Expo's requirements from on-site renewable energy, but it is more than just a marketing tool. It lays out a strategy that has been unfolding over the past three years.

That strategy is right – now all parts of government, businesses and communities need to play their part in realising it.

The 200-page report, to which I contributed, reaffirms Dubai's integrated energy strategy. Key features are to reduce energy consumption by 30 per cent below "business as usual" by 2030, and diversify the emirate's electricity

sector from total reliance on gas into nuclear, solar and clean coal.

The plan is environmentally sound – but even more than that, it is critical for the emirate’s economic well-being and security.

No longer a major hydrocarbon producer, Dubai is increasingly dependent on oil and gas imports, at prices much higher than those of the past. Water for the fast-growing population all has to be provided by desalination, a highly energy-intensive process.

And world cities, especially those hosting major international events, face ever more scrutiny of their green credentials.

If, as the leading Emirati commentator Sultan Al Qassemi argued recently, Gulf cities are new leaders of Arab culture and economics, Dubai and its sisters need also to lead on the environment.

What is Dubai doing differently from its Arabian Gulf neighbours? Saudi Arabia and Abu Dhabi, for example, both have ambitious solar and efficiency programmes. The key difference is in the pattern of Dubai’s DNA: it relies on price mechanisms and the private sector to achieve environmental goals.

Dubai’s Government sets policy and leads by example, as with Dewa’s Al Quoz building, rated “platinum” for efficiency (the highest rating accorded by Leed, the international standard for green building codes). Raising power and water prices

has been vital to reining in unsustainable consumption.

But the Government cannot simply decree a green future.

Achieving Dubai’s energy goals requires literally millions of decisions by businesses and residents – to fit solar panels on a villa roof, turn off an unnecessary light, fix a leaking tap, buy a hybrid car or take the Metro.

With the right encouragement, private companies and individuals can spot opportunities to save energy – and to create new green businesses, not just for the emirate but the region. Private companies will be attracted to finance and implement energy efficiency schemes.

A more measured pace of development and stricter building codes should make the new generation of property much more environmentally friendly than the legacy of the last boom.

Of course, as part of a federation, Dubai’s environmental ambitions are both supported and constrained. Nuclear power is meant to provide 12 per cent of the emirate’s electricity by 2030 – only possible as part of the UAE’s overall programme.

The release of Dubai’s first greenhouse gas inventory is an important complement to Abu Dhabi’s, which came out in May.

Some other issues need federal policy to move ahead – for example integrated public transport with rail and metro links throughout the country. There should be a national policy on reducing petrol subsidies to alleviate waste, smog and congestion. Imported appliances such as air conditioners should meet strict minimum standards for efficiency.

Given high levels of water use, energy consumption and greenhouse gas emissions, and lifestyles of conspicuous consumption, Dubai's ambitions will face scepticism. The next few years are critical for the emirate to translate green plans into a gold standard for the region's energy and environment.

A version of this article appeared in The National newspaper on October 27, 2013

Why local requiring sourcing of solar components is economically inefficient

By Robin Mills

Should developers of solar power in the Middle East be required to source components locally?

Guests at the Arabian Water & Power Forum in Dubai recently mostly voted "Yes". But this is a complex question, involving not only the future of renewable

energy in the region, but the whole economic development strategy.

Solar power is increasingly popular and economically viable across the Middle East and North Africa.

Even with progress in Abu Dhabi, Dubai, Morocco and Qatar, the region's largest plans belong to Saudi Arabia, which wants to build 41 gigawatts of solar power by 2032, about a third of its total generation.

And it's the Saudi plans that highlight the issue of local content. Successive rounds of renewable procurement will feature increasingly stringent requirements for Saudi-produced components, in the hope of creating 137,000 jobs.

Like the Saudis, many countries view local content requirements as a way to generate domestic employment, create high-tech industries and keep some of the value of renewable investment in-country. They also help to attract public and corporate support for renewable energy programmes.

For instance, India's National Solar Mission, announced in 2009, requires winners of tenders to use solar cells and modules manufactured in the country.

Elsewhere, the Canadian province of Ontario, and some American states, also have in-state sourcing requirements. Some German companies lobbied for social and environmental standards – disguised protectionism – to keep out Chinese competitors.

However, local content requirements may hurt the solar sector – and the wider economy – more than they help.

The classical liberal case for free trade holds that overall welfare is improved when every country specialises in what it is relatively better at.

But local content restrictions drive up costs and hurt the other parts of the economy – creating visible jobs in solar power at the cost of invisibly destroying jobs elsewhere.

Industries sheltered under such rules are pampered and uncompetitive, and will struggle once the market is opened up.

In May, the World Trade Organization upheld complaints that Ontario's green-energy programme discriminates against foreign firms.

Local content restrictions actually discourage solar power as they drive up its cost. Solar advocates would do better to push for domestic sourcing rules on conventional power.

Last year, consumers in Washington paid 36 US cents per kilowatt-hour (kWh) for solar power from panels manufactured in their state. But it's just 18 cents per kWh for systems made in neighbouring Oregon, or in China.

Forty-one gigawatts of Saudi solar power sounds impressive. But that is only what Europe installed in the past two years – nearly all by Germany and Italy – and it is split between two totally different

technologies, photovoltaic and solar thermal.

By 2032, the global market will be far larger and more mature. So even the “Saudi Arabia of solar” will not be able to dictate terms to global manufacturers.

Local content rules, however carefully written, lead to distortions. They end up preserving obsolete technologies.

Domestic lobbies, once created, are hard to remove – as we see in the Saudi petrochemical sector's defence of low gas prices.

And what is local content? A solar panel produced in Riyadh by China's Suntech Power or one made in Shanghai by Saudi Basic Industries Corporation?

In any case, with solar module costs falling sharply, a majority of project costs will come from components that are naturally provided locally – finance, legal work, engineering, installation, maintenance and electrical components.

As at Masdar, research should be tailored for local conditions – dust, high temperatures and so on.

The drive to use solar power is a separate question from where it is built. Given the Middle East's massive natural advantage in solar power, it benefits from expanding its use and reducing costs as fast as possible.

Mena countries should concentrate on improving the wider environment for

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manufacturing all kinds of goods – not artificial markets, but a focus on education, skills, efficient regulation, employee incentives and quality.

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

Key MENA Energy Issues Scorecard

MENA energy price reform	●	↑	Oman oil minister advocates removing fuel & power subsidies throughout the region; Sudan reshuffling cabinet after fuel price protests; Morocco hedging fuel purchases as it lifts subsidies; Kuwait finance minister says may review subsidies
MENA unconventional oil & gas	●	↑	Saudi Aramco to commit shale gas to 1000 MW power plant in north-west; UAE hopes for future shale production
MENA alternative energy	●	↑	Masdar and ADNOC announce JV on carbon capture for Emirates Steel project; Dubai opens 13 MW solar PV plant and progressing 100 MW plant; Kuwait invites bids for 5 MW solar plant for oil-field operations
MENA nuclear power	●	↓	Containment vessel for first UAE reactor complete; proliferation concerns over Saudi programme; Egypt announces restart of Dabaa plant construction but progress unlikely
Energy infrastructure security	●	↔	Mellitah gas terminal in west Libya shut by Amazigh protesters; Hariga port in east Libya remains closed; Libyan exports only from offshore fields; further bombing of oil pipeline in Yemen's Shabwa province; further bombing of Iraq's northern Kirkuk pipeline; Sonangol may end operations in northern Iraq due to insecurity;
OPEC production	●	↓	OPEC output down in September (29.8 Mbpd) and October (29.7 Mbpd), now below 30 Mbpd ceiling, as seasonal fall in Saudi Arabia more than outweighs slight rise in Libya; organisation admits shale oil will cut its market share this decade
East Mediterranean gas commercialisation	●	↓	Size of Cyprus's Aphrodite discovery downgraded on appraisal; Woodside in Israel to negotiate Leviathan deal; Isramco and Dor Gas appealing over Israel gas export limits; progress on joint Israel-Cyprus LNG plant
Kuwait energy projects progress	●	↔	
Abu Dhabi concessions renewal	●	↔	Bidding IOCs submitted offers; ADCO to operate without current partners after January
Baghdad-Erbil oil agreement	●	↔	KRG objects to BP deal to redevelop Kirkuk; KRG-Turkey pipeline expected complete by end-2013 but export status unclear
Iraq oil production build-up	●	↑	Oil exports rise to 2.253 Mbpd in October as export terminal work completed
Egypt subsidy reform	●	↔	Gulf aid eases short-term fiscal pressure on government; piloting fuel smart card system; shortages of cooking gas
Iran oil sanctions	●	↑	Promising signs from Geneva nuclear talks but no deal yet on French objections; Iran oil exports up in September to 966.8 kbpd but expected down sharply in October to ~719 kbpd

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 October 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	1.01	10.35
	Abu Dhabi	0.48	0.88	4.0
	Sharjah	0.48	0.90	8.0

	Gasoline (\$/Litre)	Diesel (\$/Litre)	Electricity (\$¢/kWh)
Egypt	0.59	0.46	6.8
Iran*	0.69**	0.35**	1.65**
US	0.93↑	1.022	12.61
Lebanon	1.17	0.88	13.3
Jordan	1.29	1.33 ↑	33.2

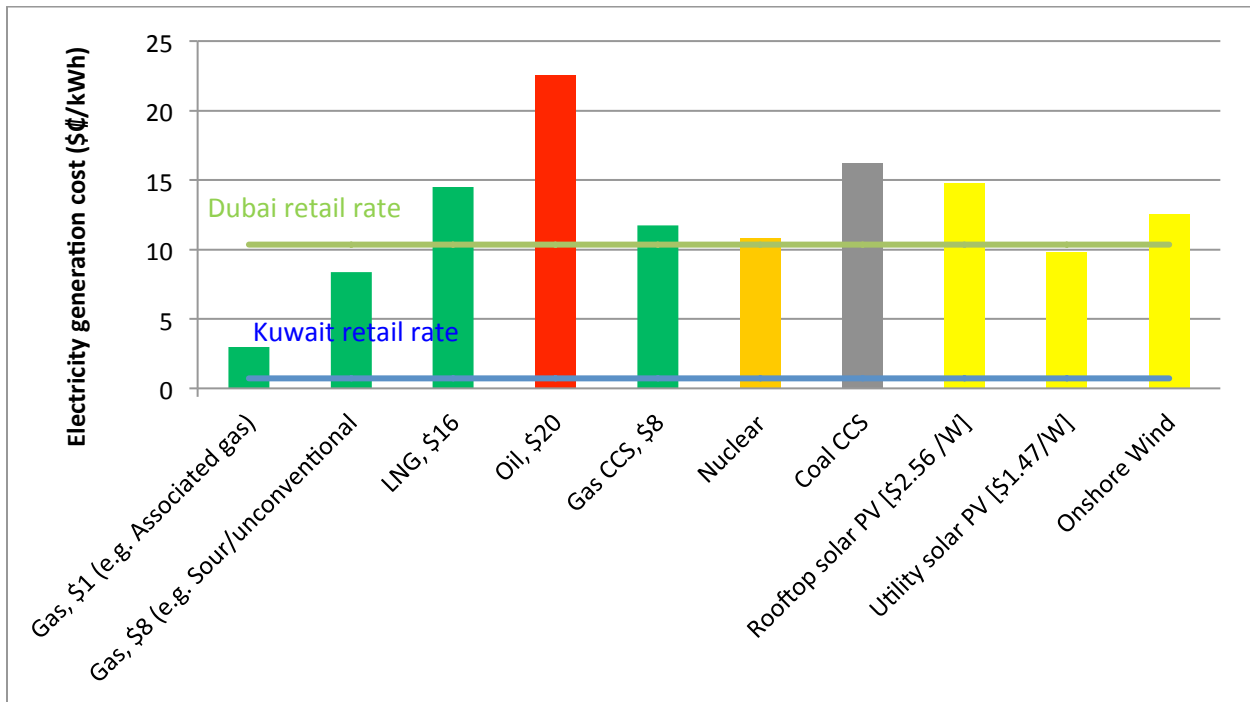
* Non-subsidized allocation, at current (volatile)

** Values changed mainly due to changes in the exchange rate

Open-market exchange rate (US\$1:IR 24942)

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.

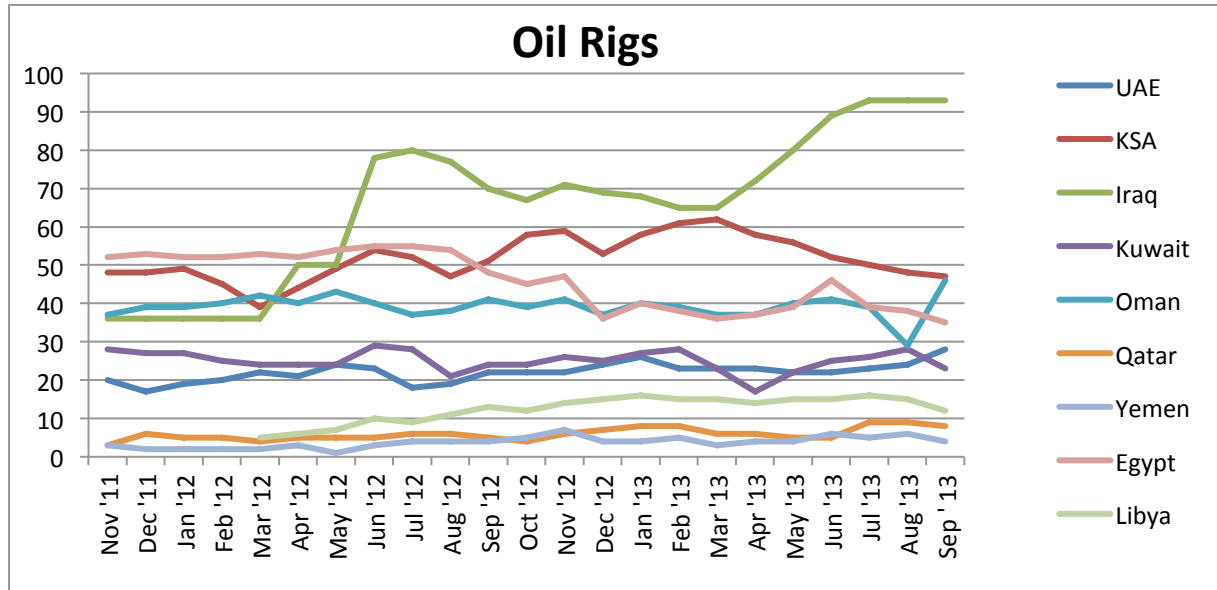


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Main changes: increased capital cost of nuclear in line with UAE programme; reduced uranium price; included nuclear decommissioning costs; included onshore wind in UAE conditions; differentiation of utility-scale and rooftop solar; inclusion of 1 c/kWh 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.

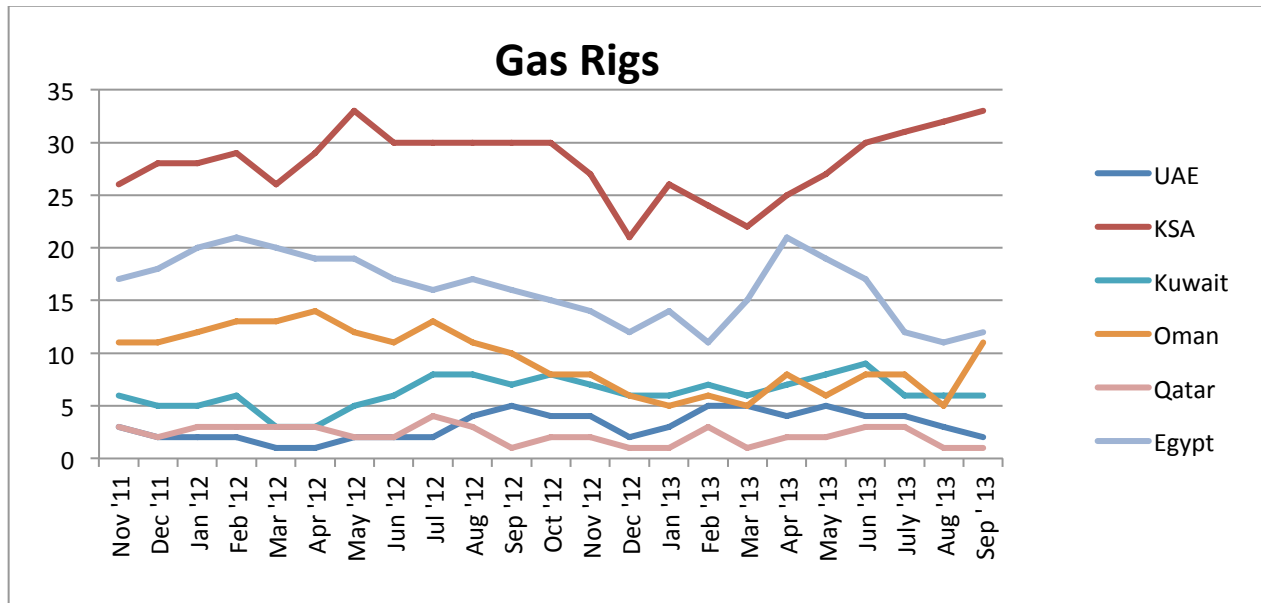
- Utility-scale solar PV is now clearly a more economic option than LNG- or oil-fired power generation, even allowing for the cost of back-up plants
- Gas CCS, though higher cost than solar and nuclear, could still be a viable low-carbon option, particularly if combined with use of CO₂ for enhanced oil 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. Areas with good wind resources, such as the Red Sea coast of Saudi Arabia and Egypt, may offer lower costs
- In the GCC, only Dubai has top-rate tariffs that are representative of the new era of generation costs

Regional Energy Statistics



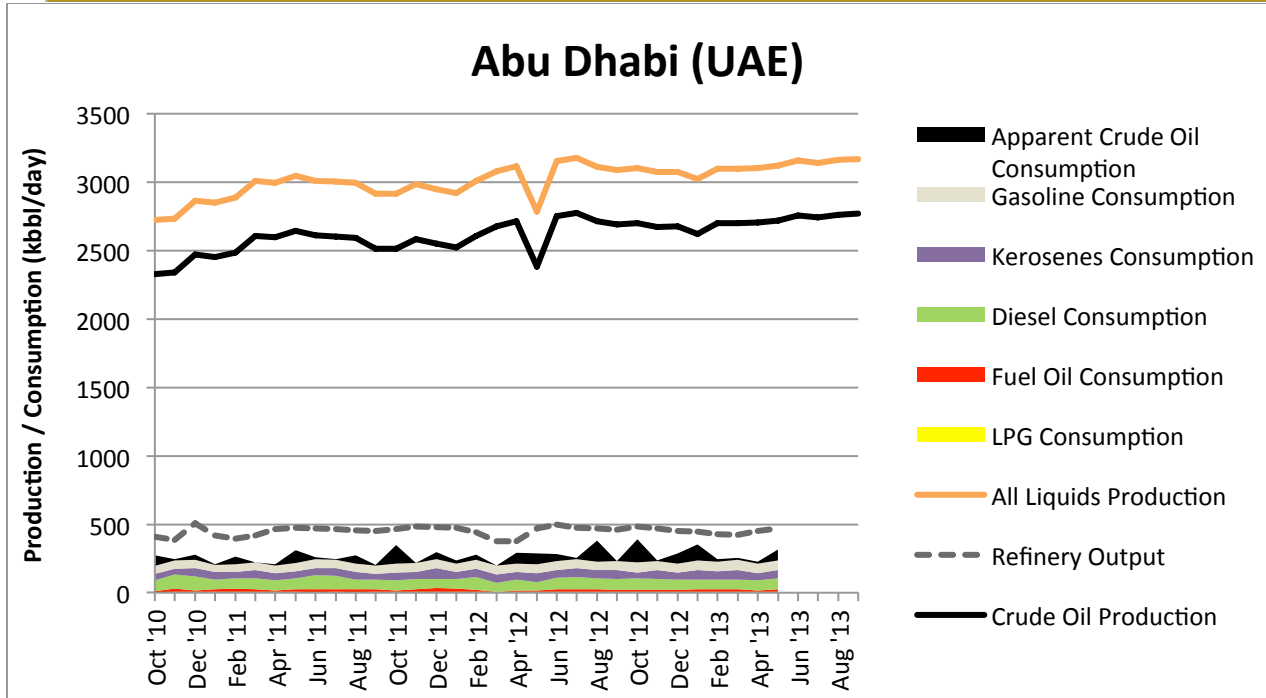
Source: Baker Hughes, Iraq: Baker Hughes and OPEC Monthly Oil Market Report

- Saudi Arabia drilling continues to decrease for the sixth 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 rig count remained constant over the months of August and September, after five months of continuous growth
- Oman rig count rebounded to a two-year high of 46 as continuing field development takes place.
- All other countries' rig counts remained quite stable over the month

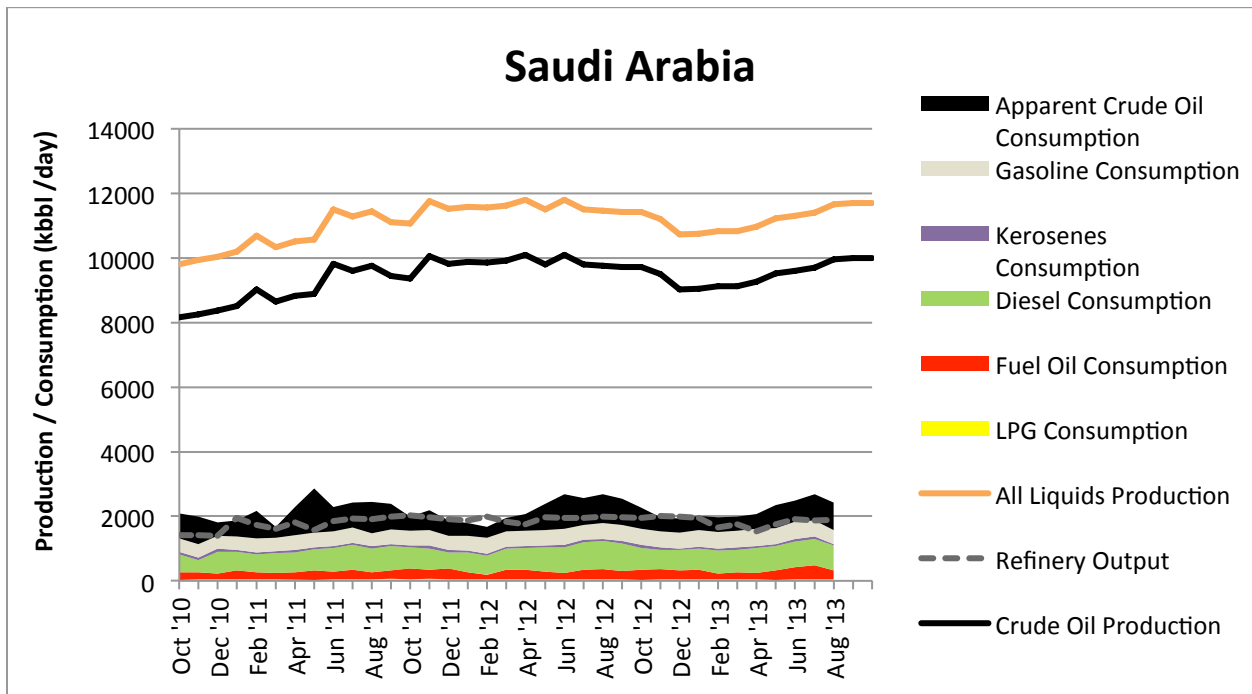


Source: Baker Hughes

- Saudi Arabia's gas drilling continued to increase in September reaching the record high level of May 2012
- All UAE gas rigs are located in Abu Dhabi; there are no current gas projects in Dubai
- Oman September rig count reached year-long high of 11 rigs, higher than September 2012 of 10
- Qatar rig count dropped in September to reach only one rig with the completion of drilling on the Barzan gas project (which had been using three jack-ups)

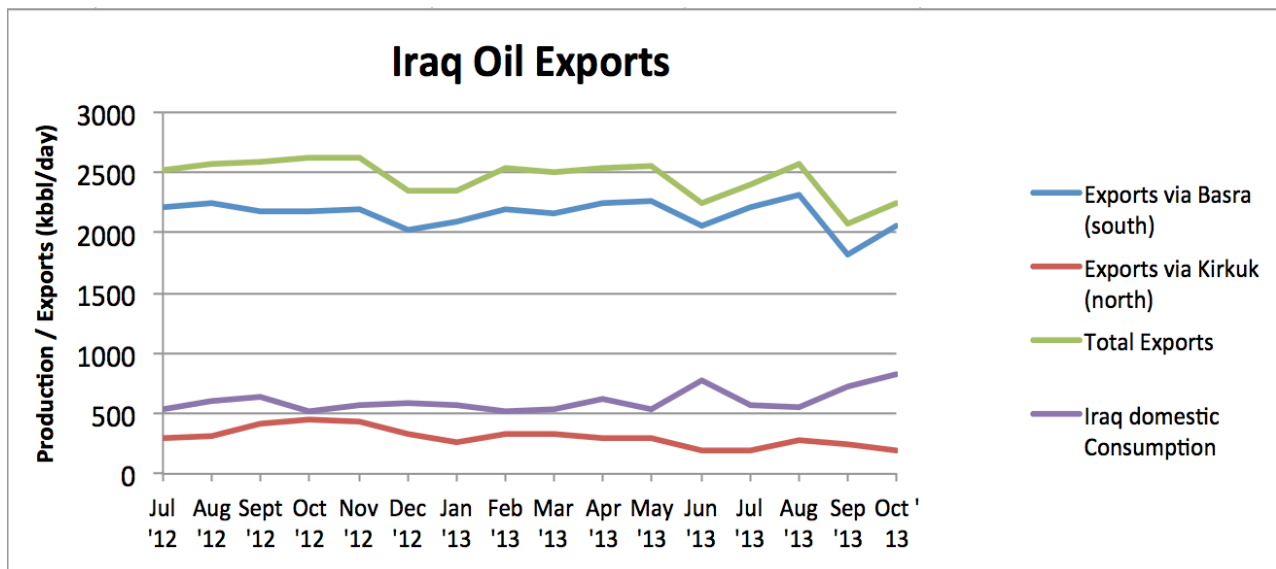
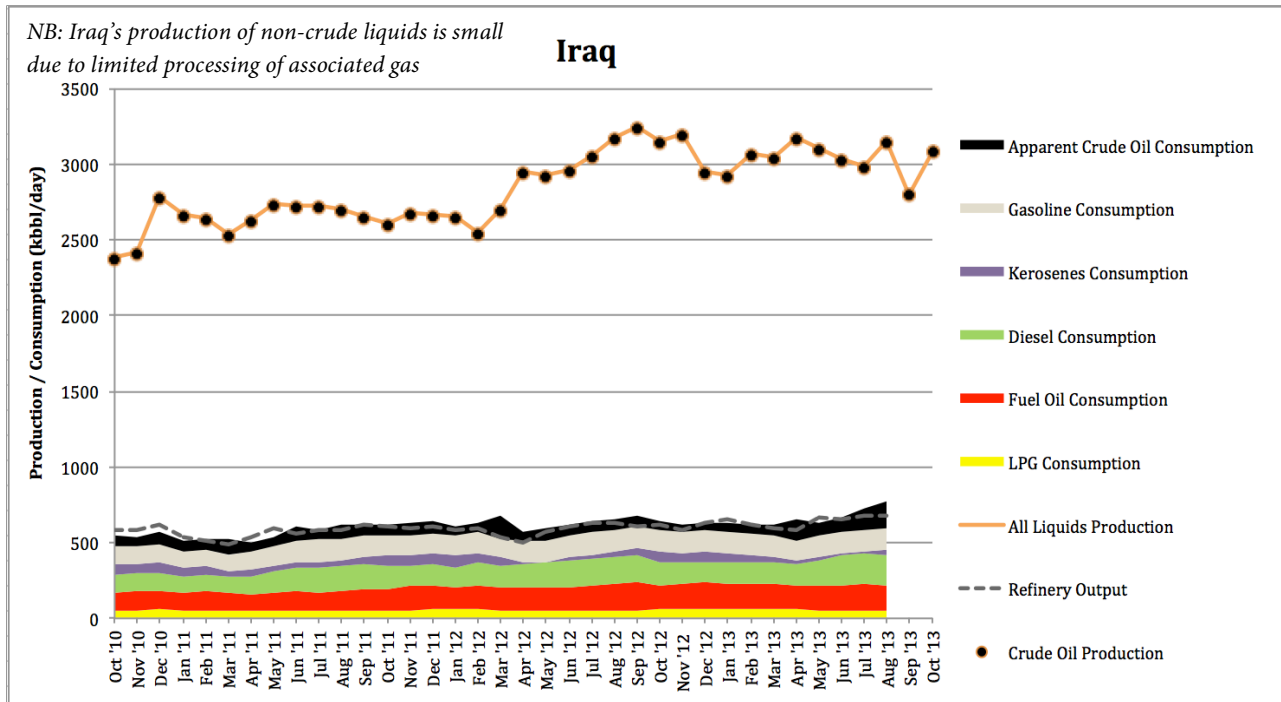


- The country's production remained stable throughout the summer months and into October
- Abu Dhabi has not updated its consumption figures for the past three months



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- Saudi oil production reached 10 Mbpd in September, but turned down the tap to 9.75 Mbpd in October as domestic demand is lower in the winter.
- There were no big cuts in Saudi exports last month and the drop only reflects reduced domestic crude burning.

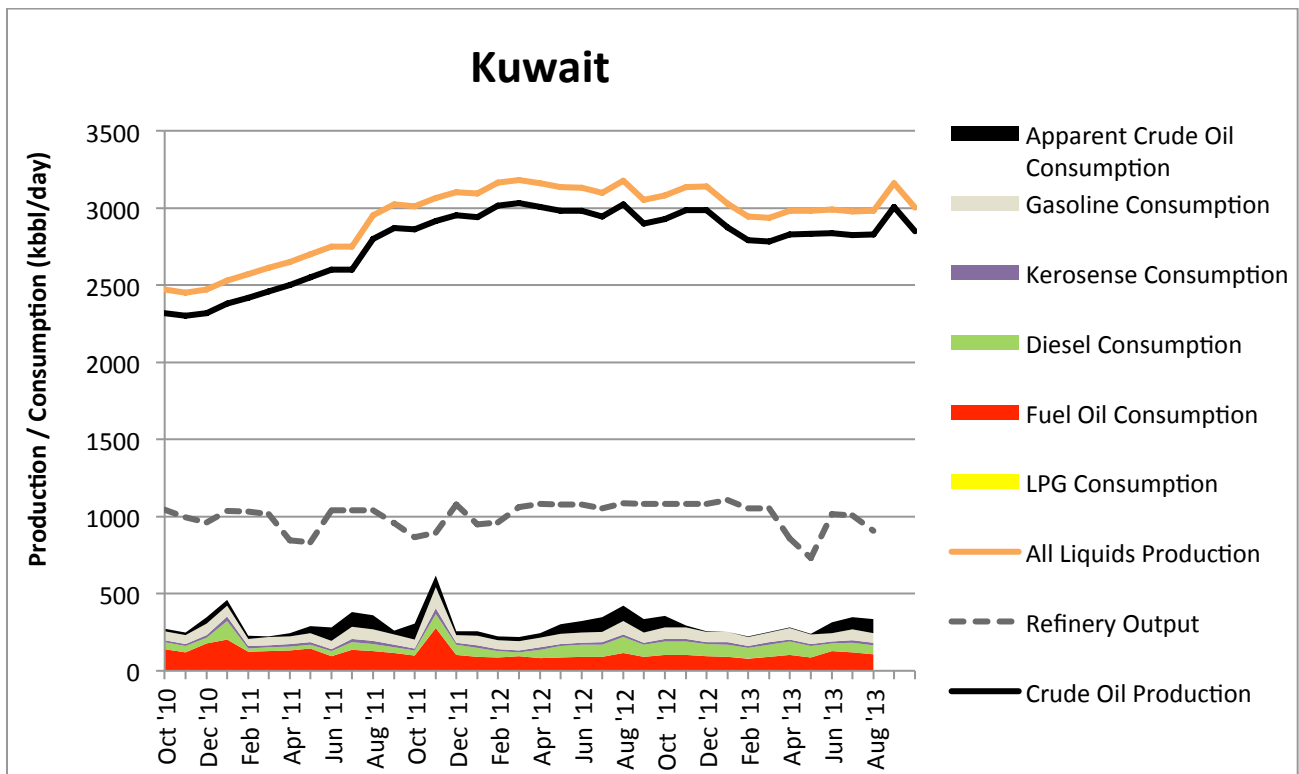


Source: Iraq Oil Ministry, Bloomberg

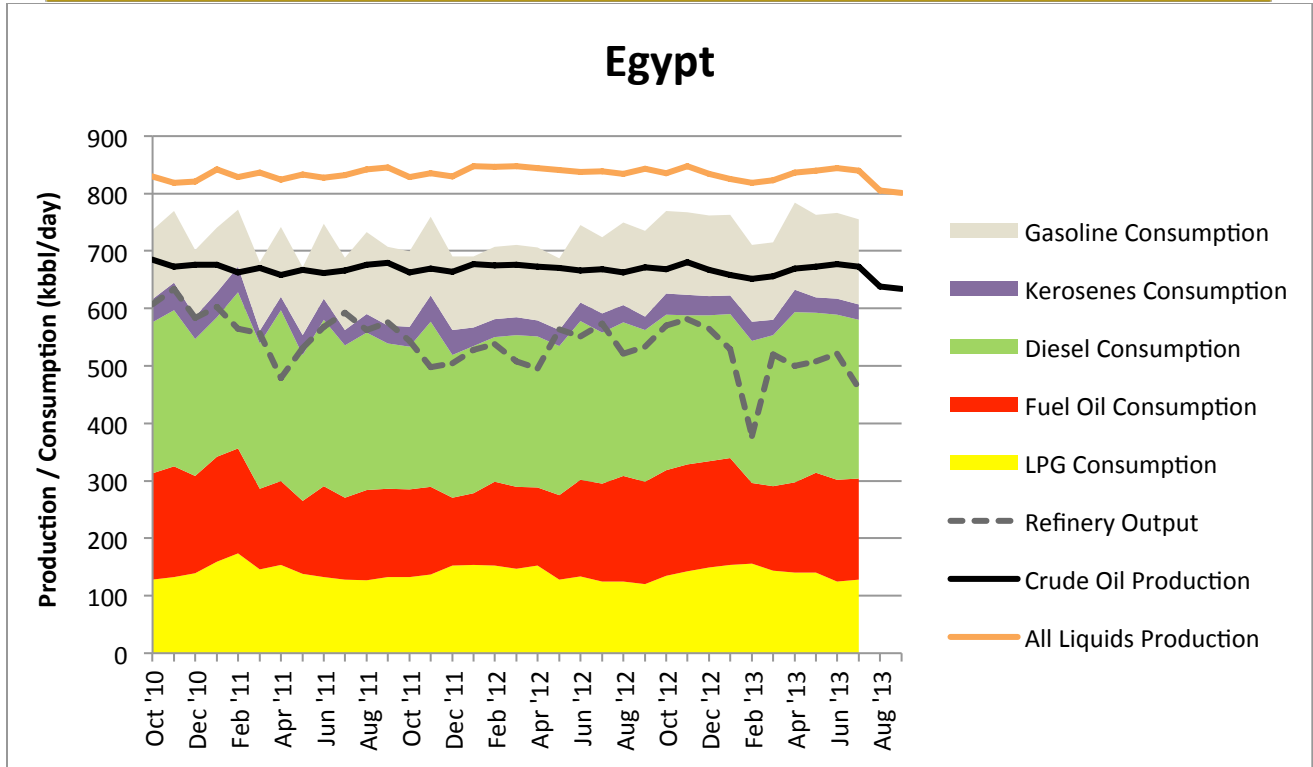
- Iraq's crude oil production recovered after reaching highs of 3.1 Mbpd in August, with a low of 2.8 Mbpd in September and rebound to 3.08 Mbpd in October

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- Insurgent attacks along the northern pipeline route and the on-going payment disputes between Baghdad and Kurdistan Regional Government (KRG) capped exports of Kirkuk crude via the Turkish Mediterranean port of Ceyhan.
- Export volumes from the Basrah and Khor Al-Amaya terminals are expected to rebound further by early November
- 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 was currently producing 2.9 Mbpd and has the capacity to produce 3.2 Mbpd, while Shamali re-iterated targets that Kuwait would achieve oil production capacity of 4 Mbpd by 2020 (however this continues to face significant political challenges)



- The refinery output dropped by 60 kbbpd in August to reach a total of 461 kbbpd, showing continuing problems in importing feedstock
- Due to free cargoes of fuel provided by Saudi Arabia, Kuwait and the UAE, EGPC faces rising fees for delayed tankers as the Gulf fuel shipments fill ports.

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	km ² offered	Blocks Awarded	Closing Date
Egypt	EGAS	Jun - 12	15	57,300	9	Feb - 13
Egypt	Ganope	Dec - 12	20	125,577	-	May - 13
Iraq	Nassiriyah refinery / field development	Dec - 13	1			
Iraq	5 th Licensing Round	NA	10	NA	-	NA
Lebanon	1 st Licensing Round	May - 13*	10	17,901	-	Jan - 14
Oman	MOG	Jan - 12	4	26,837	2	Aug - 12
Oman	MOG	Nov - 12	7	103,422	-	Jan - 13
Yemen	6 th 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

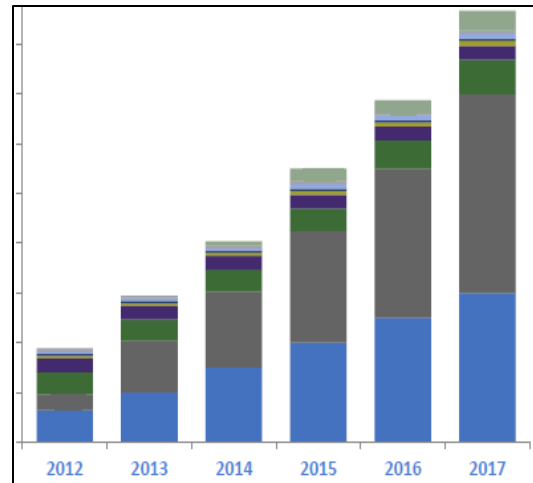


Figure 2. Forecast frac capacity, per MENA country

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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.

Monthly Newsletter: October 2013

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 region.
- 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

Robin Mills spoke and will speak on:

- Middle East energy subsidies at AFED
- Shell panel for EOR at ADIPEC on November 11th.
- Key geopolitical issues and their implications for energy at the CGES November Retreat on November 20th.
- Jaafar Altaie will also speak on "Oil prices: is \$100/bbl justified?" at the CGES November Retreat on November 19th.

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

[Arabian Water & Power Forum Dubai – September 2013](#)

[Power & Water Middle East Leaders Forum Abu Dhabi – September 2013](#)

[EAGE Jordan Middle East shale gas – September 2013](#)

[INSS East Mediterranean gas – September 2013](#)

[MEED UAE Oil & Gas Projects Abu Dhabi – September 2013](#)

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.



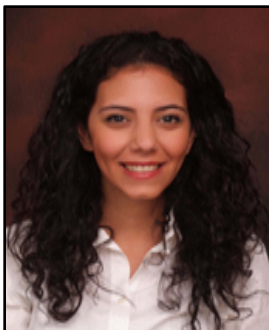
**Robin Mills,
Head of Consulting**

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.



**Mohammed Jambaz,
Head Representative in Kurdistan Region, Iraq**

Mohammed represents Manaar in the Kurdistan Region of Iraq from our office in Erbil. He leads our support of companies in seismic, geoscience, exploration & production, logistics, laboratory services, energy market analysis, and other sectors of the oil industry.

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