Monthly Newsletter: July 2013

ENERGY CONSULTING & PROJECT MANAGEMENT
إستشارة و إدارة مشاريع الطاقة

Egyptian LNG (ELNG) terminal, Egypt. Photo courtesy of BG Group.

July 2013

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Tough challenges await next leader of Egypt's rentier state

By Robin Mills

Power cuts, driving for hours across Cairo to find fuel, foreign-exchange reserves at critically low levels,
rising inflation and unemployment over 13 per cent - the Egyptian economy is in a mess.

Given these failures - quite apart from his religious goals and disdain for consensus - it is no surprise that millions came into the streets to demand the overthrow of Mohammed Morsi after a year as president.

But ineptly as he ruled, any government - Islamist, liberal, socialist or military - would have struggled with the economic legacy left by his predecessor Hosni Mubarak. Appropriately, it was an Egyptian, Hazem Beblawi, finance minister in 2011, who wrote the classic book on the rentier state. Egypt has demonstrated the failure of the rentier and redistributionist model, and the difficulty of transition to a productive economy. A rentier state sustains itself through unearned income, rather than through taxation as in most countries, and its regime stays in power by distributing patronage.

Egypt was unusual in having four sources of rent - its modest but not
negligible oil and gas production, the Suez Canal tolls, military aid thanks to its strategic importance, and transfers from the legions of Egyptians working overseas. But by the 1980s, a growing population, falling remittances after the oil price crash and rising domestic energy consumption made this model unworkable.

Mubarak himself acknowledged this in 1989, saying that Egypt's bureaucracy "seeks to make the easy difficult and the possible impossible". His predecessor Anwar Sadat's infitah ("openness") policy

was launched in 1975, but after 1977's massive bread riots, wide-ranging food and energy subsidies have been politically untouchable. Instead, Mubarak tried to make hidden cuts, reducing the weight of gas cylinders and the size and quality of loaves.

Economic liberalisation brought industrial development and respectable growth, at 5.1 per cent in 2010. But this brought anger against corruption and crony capitalists, such as Mubarak's son Gamal and associates Ahmed Ezz and Hussain Salem.

The gap between rich and poor widened, exacerbated by terrible failings in education that leave 28 per cent of Egyptians illiterate.

When growth collapsed after the 2011 revolution, the economy's weakness became glaringly apparent. A fifth of state spending goes on energy subsidies, which disproportionately benefit the wealthy. Meanwhile the budget deficit exceeds 11 per cent of GDP, natural gas exports have slumped, and Egypt is unable to afford fuel imports, reduced to begging for special favours from Libya, Iraq and Qatar.

The Egyptian state had, as the Russians say, strong thumbs and weak fingers - capable in repression, inept in governing skilfully.

A representative government might have been able to build the consensus to accept a difficult and prolonged period of economic reform. Mubarak's could not; and neither Mr Morsi nor any of the main opposition parties has presented a coherent economic vision. The failure of Egypt is the failure of the Middle East economies in microcosm.

Real GDP growth per person during 1980-2004 was less than 0.5 per cent per year; in Asia, it was 4.5 per cent. In an era of globalisation, Middle East and North African states have not capitalised on their unique advantages - a bridge between two oceans and three continents, a long coastline, sited ideally between Europe and Asia, oil and gas-rich in a world thirsting for resources, and with a young, fast-growing population.

Like Egypt, state-dominated economies, wasteful energy subsidies, high unemployment and falling oil earnings per person blight Algeria, Yemen, Iran and pre-revolutionary Syria. Only the UAE and perhaps Qatar have really adapted to a globalised world economy - and even here hydrocarbon earnings remain vital.

Egypt's next president will have two formidable tasks - to stabilise the economy in the short term and to devise a new model in the longer term. Without a solution to the region's economic ills, more governments will repeat Mr Morsi's short and inglorious experience.

A version of this article appeared in The National newspaper on July 8th, 2013

Germany's energy experience has lessons for Emirates

By Robin Mills

Realpolitik and zeitgeist are German terms that have entered the English lexicon. Now another may join them - Energiewende, or energy transition, a term for Germany's ambitious plan to phase out nuclear power by 2022 and replace coal and gas with 80 per cent renewable sources by 2050. As the UAE is, in a way, embarking on its own energy transition, it is the ideal time to look at the German experience.

The Energiewende's fundamental goal is to reduce greenhouse emissions dramatically. It is also hoped to deliver lower and less volatile bills (eventually), job creation and greater energy security.

Whether the plan can, or even should, aim at these secondary goals is dubious. But in exploring the path to a low-carbon future, Germany's experience is critical.

At times, solar power now meets half of German demand, and a quarter of electricity overall comes from renewable sources. The UAE should be glad that Germany's heavy investments have driven down photovoltaic panel prices dramatically. In housing, the Passivhaus - or rigorous standard for energy efficiency in a building - design is ultra-effective.

By 2020, the renewable sector is expected to support 300,000 jobs and German companies, with a long tradition of engineering excellence have become leaders in wind and solar manufacturing.

The Energiewende has, of necessity, assembled broad political support, or it could never have been sustained.

Because of renewable energy subsidies, ordinary German consumers have among the highest electricity bills in Europe - Dh1.36 per kilowatt-hour, compared to the top rate in Dubai of Dh0.44, or 44 fils. Meanwhile, heavy industry, although largely shielded so far, worries about rising costs and competitiveness. This coalition means, perhaps inevitably, some strangely conflicting goals. The roots of the Green Party in the anti-nuclear zeitgeist of the 1960s means that Germany is giving up one of the largest sources of zero-carbon electricity.

Germany is consequently building more plants fired with lignite coal, the dirtiest fossil fuel. At the same time, for largely ideological reasons, it has ignored carbon capture and storage to clean up coal, and resisted the use of shale gas.

Some advocate decentralising the electricity system via small-scale local solar and wind installations - either for good technical reasons, or for disguised protectionism or to achieve social goals of curbing big business.

Local campaigners oppose power cables to get north German wind power to the south, leading to massive flows of electricity along the path of least resistance - and annoying Poles and

Czechs who find their own grids destabilised.

The UAE is only just embarking on its own transition. It is driven by the country's very high carbon footprint, but also by the realpolitik of economic imperatives - the price and volumes of imported gas are rising sharply, and overall energy demand is growing unsustainably fast.

The UAE's - still embryonic - future energy plan looks more like the US president Barack Obama's "all of the above" than Germany's focus on renewable energy. It features a large civil nuclear power programme, growing use of solar power, exploration for shale gas, carbon capture and storage, and perhaps clean coal.

What is missing? Domestic energy prices have to rise to market levels - but simultaneously efficiency has to improve dramatically to limit the impact on consumers.

Electricity tariffs at German levels would be intolerable. Future energy plans have to be communicated clearly, and in detail, to government, business and the public.

To reap the economic benefits, the UAE needs to consider how to assemble something like Germany's Mittelstand of small and medium enterprises, and its culture of engineering expertise, vocational training and scientific research.

The Arabian Gulf context is very different - in politics, climate and the reality of an oil and gas-driven economy. Still, with some imagination, the UAE can learn from both the achievements, and errors, of Germany's Energiewende.

A version of this article appeared in The National newspaper on July 15th, 2013

Qatar impresses in energy but cannot rest on its laurels

By Robin Mills

Discussion of the abdication of Sheikh Hamad bin Khalifa Al Thani, the emir of Qatar, has paid much attention to his country's outsize role in international politics. Much discourse seemed to assume the country's wealth, used to fuel its rise to eminence, was almost a fact of nature, an inevitable side effect of owning the world's largest gasfield.

But Qatar's money is no accident - it is the result of choices made by Sheikh Hamad and his advisers, and even well before them. Some of those choices were cautious and sensible, some bold, some lucky. Their success shows up the failings of other countries that could not capitalise on their resources.

The North Field, the world's largest gasfield, was discovered by Shell in 1971. But it took some years for its immense size to be appreciated. Even then, with barely over 45,000 Qataris and 66,000 expatriates, there was simply no local need for the gas. Qatar's 1977

nationalisation of Shell's assets - at the time Shell was the world's leading liquefied natural gas (LNG) company - did not help.

In 1991, production finally began for local use, but the real prize was exports. During the 1980s, plans to sell LNG to Japan had advanced at a slow pace hardly distinguishable from paralysis.
Global oil and gas prices were low and BP withdrew in 1992 - a decision it must now bitterly regret. Sheikh Khalifa, then Qatar's emir, was financially extremely conservative, personally signing all cheques over US$50,000.

But these years also brought key developments. In 1990, Qatar had decided to make Ras Laffan, a remote and empty spot on its northern tip, the site for all gas industries and began building a $1 billion port. In 1992, Sheikh Hamad was given a bigger role in running the country's oil sector, the gas mastermind Abdullah Al Attiyah became energy minister and Mobil was enticed into the LNG project to replace BP.

Sheikh Hamad became emir in 1995; in January 1997 the first LNG tanker from Qatar arrived in Japan. The timing was extremely fortunate. The LNG business, from a niche industry mostly serving East Asia, was about to go global.

Exxon, which acquired Mobil in 1999, brought its unique blend of gigantism and micromanagement. Qatar, once remote from markets, now exploited its central location between Asia, Europe and North America. Remarkably, this small country went in a decade from zero to being the leading LNG exporter, without serious delays or cost overruns. And from 2003, world oil and gas prices soared.

When the financial crisis struck in 2008, and the United States disappeared as an LNG market thanks to its shale gas boom, Qatar was able to act like a one-country Opec, reducing output to maintain premium pricing. Its economic importance guaranteed it US security backing; its wealth fuelled development and lavish social spending at home, ambitious investments and political influence abroad.

Qatar's success contrasted sharply with its giant neighbour across the water - Iran, which developed South Pars, its share of the North Field, mostly for domestic use, and failed to build LNG plants or major export pipelines.

Other gas-endowed countries, such as Venezuela, Turkmenistan and Nigeria, also failed for a variety of political and geographic reasons to compete with the Qataris.

Qatar took decades to make its gas industry an overnight success. It built constructive international relations, chose the right partners, negotiated tough but stable investment terms, made long-term strategic investments with short-term flexibility, and kept its eyes on ultimate goals. These principles apply to all resource-rich countries.

The new emir, Sheikh Tamim, can continue to follow these principles. But to

maintain Qatar's commanding heights, he also needs to anticipate challenges to the gas-fuelled economic model.

A version of this article appeared in The National newspaper on July 1st, 2013

Key MENA Energy Issues Scorecard

Gulf gas price reform	🟡	⇔	Egypt seeking to raise gas prices for producers
MENA unconventional gas	🟡	↑	Saudi Aramco to drill 7 shale gas wells
MENA renewable energy	🟢	⇔	Desertec North Africa solar initiative apparently in collapse; Phoenix Solar begins 1.8 MW PV for Saudi Aramco; Dubai airport Terminal D to use solar power; Kuwait invites bids for Shagaya renewable energy park, starting at 70 MW in 2016 (CSP/wind/PV)
MENA nuclear power	🟡	⇔	Jordan says to choose soon Russian or French-Japanese consortium for 2 x 1 GW reactors near Amman; US-Saudi nuclear power cooperation deal under discussion
Energy infrastructure security	🟡	⇔	Kurdish-Islamist fighting over NE Syria oil-fields; Libya exports from Zueitina halted by protests, with production down to 1.15 Mbpd; further bombing on Iraq's northern pipeline; Yemen's Marib export pipeline bombed again; South Sudan dispute threatens exports
OPEC production	🟡	↓	OPEC production down 370 kbpd in June to 30.61 Mbpd on Libya, Iraq and Nigeria disruptions
East Mediterranean gas commercialisation	🟢	⇔	Israel-Turkey pipeline gaining support
Kuwait energy projects progress	🟡	⇔	Pro-government forces control parliament after elections
Abu Dhabi concessions renewal	🟡	⇔	3.5 Mbpd production target likely to be delayed to 2020
Baghdad-Erbil oil agreement	🔴	⇔	Oil pipeline to Turkish border almost complete; further KRG-Baghdad talks expected; KRG role affected by Syria, Erdoğan
Iraq oil production build-up	🟡	↓	Exports at 15-month low in June due to pipeline attacks & technical problems; will fall further in September due to SPM work; security continuing to deteriorate
Egypt subsidy reform	🔴	⇔	Overthrow of Morsi government continues turmoil; however new PM Beblawi is noted advocate of subsidy reform
Iran oil sanctions	🔴	↑	Iran oil production up slightly in June; US planning to tighten sanctions; Rouhani to assume presidency 4th August; Zanganeh may return as oil minister

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

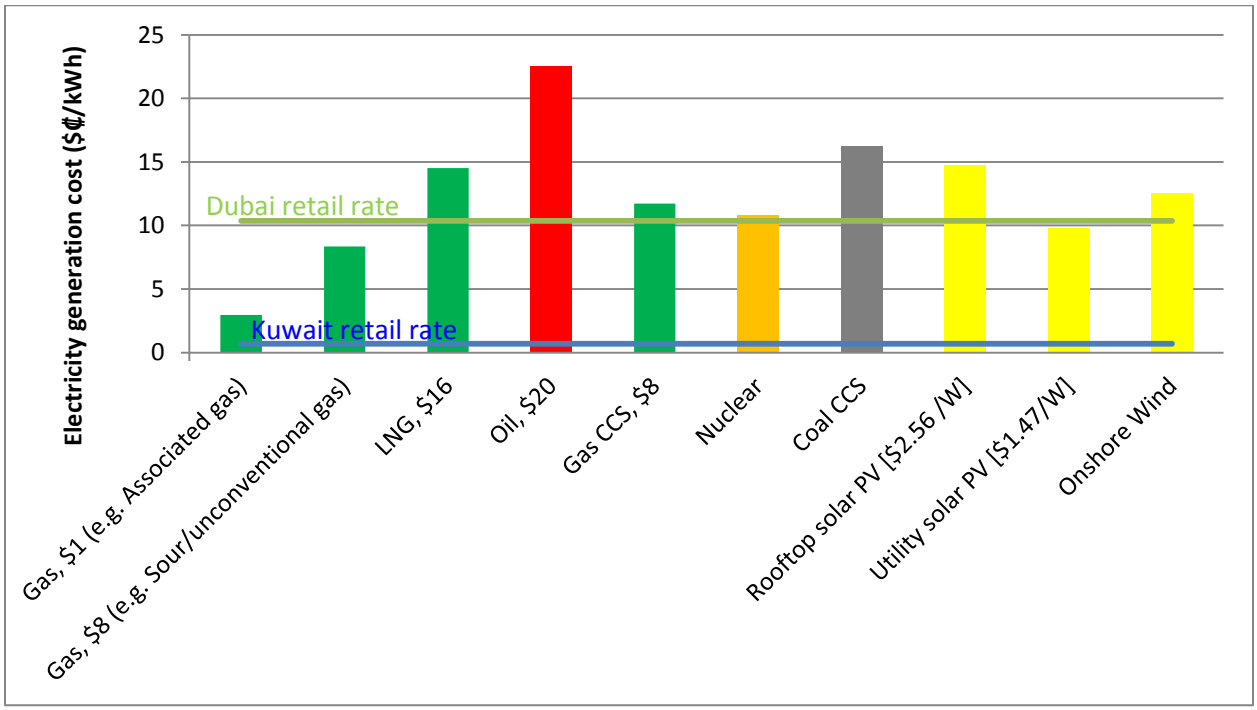
The following table represents May 2013 gasoline, diesel and electricity prices (top rate for residential consumers) in selected MENA countries, with the US for comparison, and the direction of change since last month.

		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		0.30	0.27	0.7
Iraq		0.34	0.72	6.7
Oman		0.40	0.48	7.8
Yemen		0.44	0.30	7.9
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	*0.96*	*1.021* ↑	*11.94* ↑
Lebanon	1.15	0.90	13.3
Jordan	1.38	0.96	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 pumping-prices, and they are all subsidized unless mentioned otherwise.



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

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

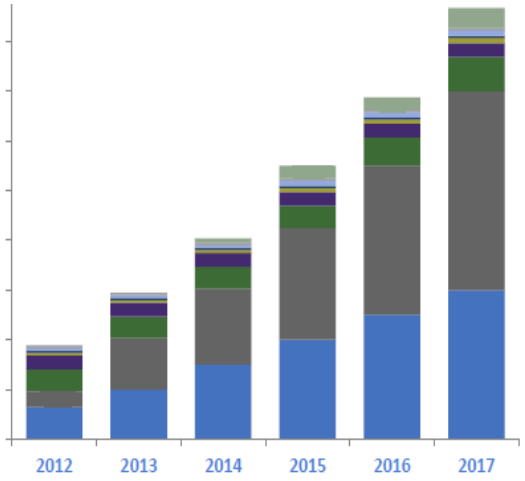


Figure 2. Forecast frac capacity, per MENA country

Please contact Roa Ibrahim r.ibrahim@manaarco.com, +971 4-3266-300 for further information and purchases.

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) in Amman, 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

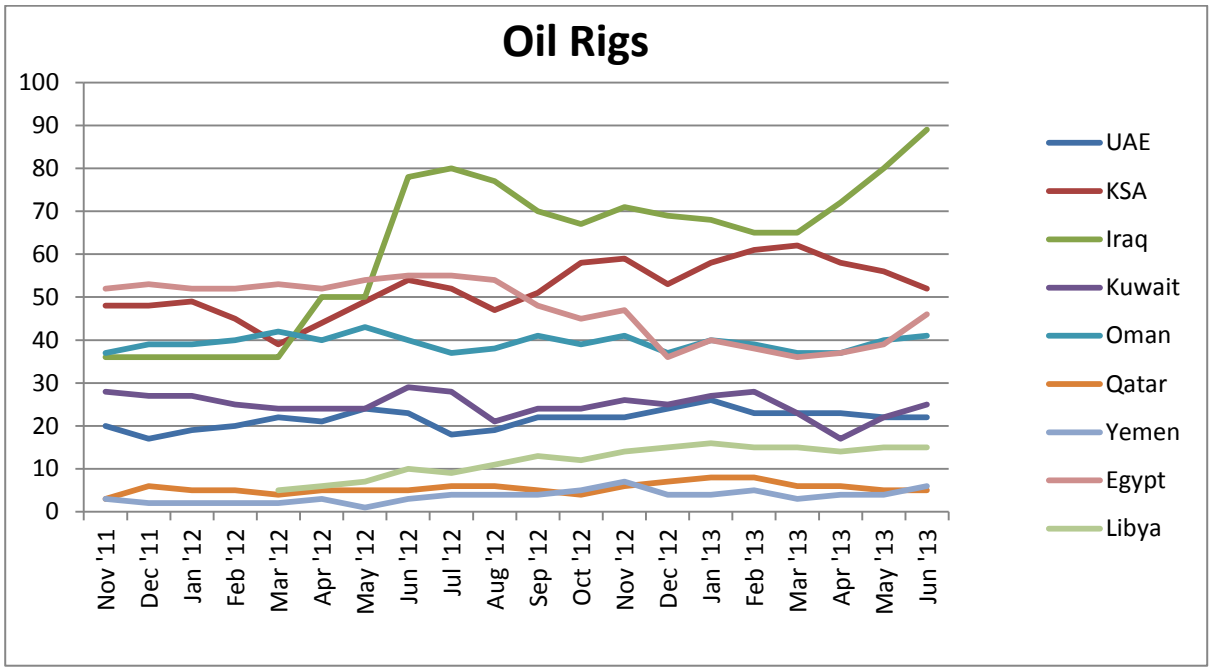
Robin Mills will be speaking on Middle East electricity and gas challenges at the Arabian Power and Water Forum in The Address hotel, Dubai Marina, UAE on 23rd September 2013

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

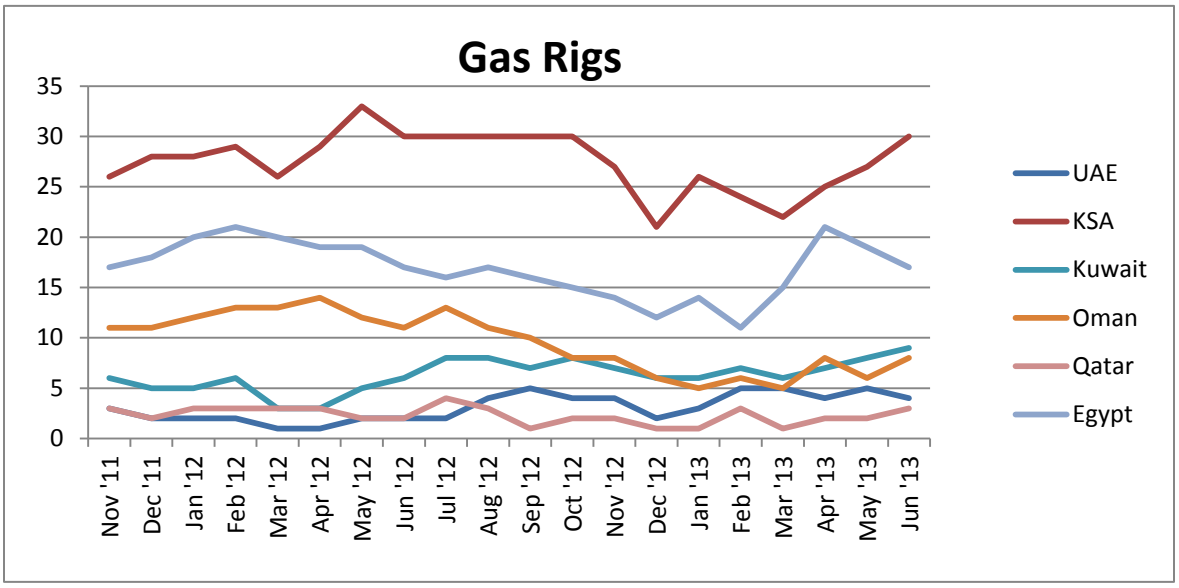
Regional Energy Statistics



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

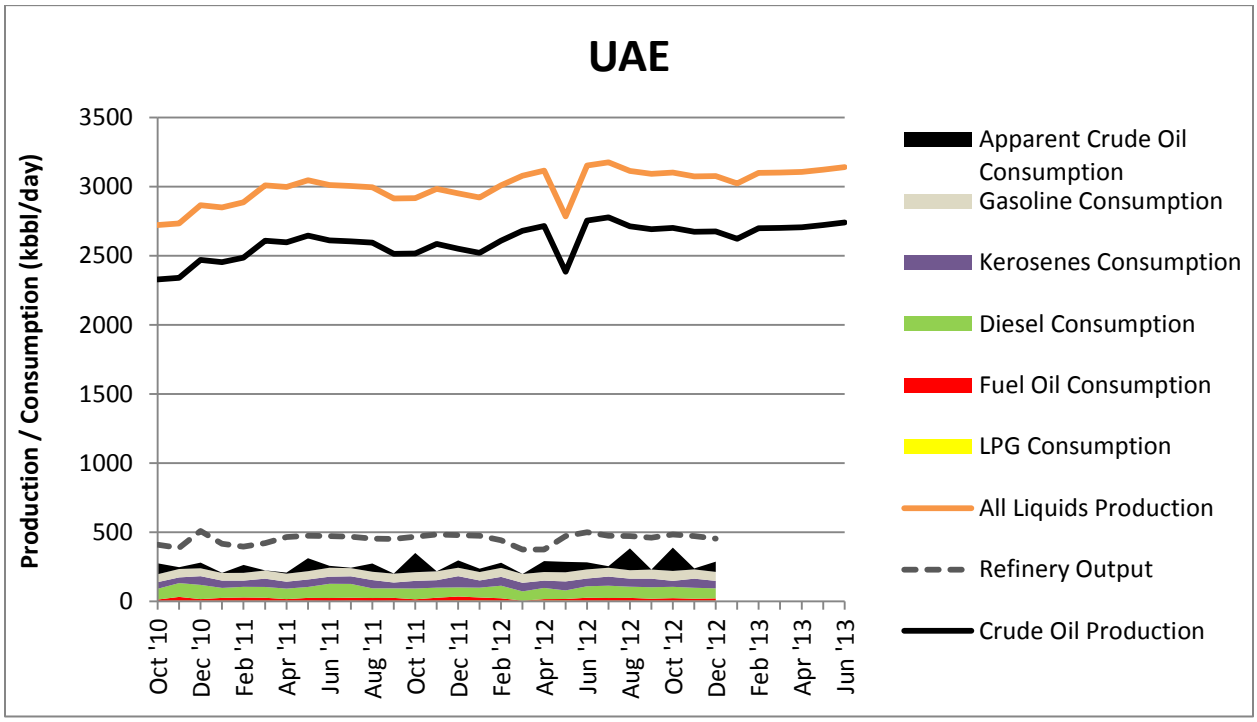
- Saudi Arabia drilling continues to decrease for the third consecutive month; however, the Kingdom is expected to increase to a record 170 rigs (oil + gas) by the end of 2014 due to Khurais and Shaybah expansions
- Iraq rig count increased this month to reach a record high of 89 rigs, making it by some way the leading MENA oil driller.
- Libya rig count was steady at around pre-revolution levels.

- Kuwait's rig count increased slightly but is still lower than the February level.

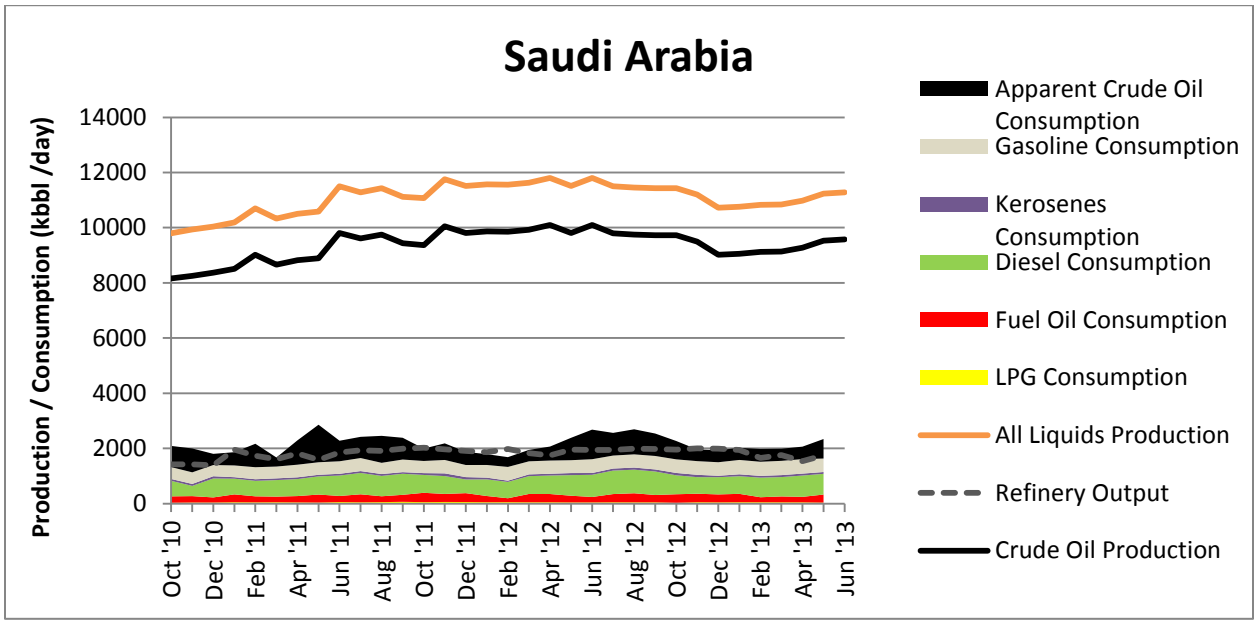


Source: Baker Hughes

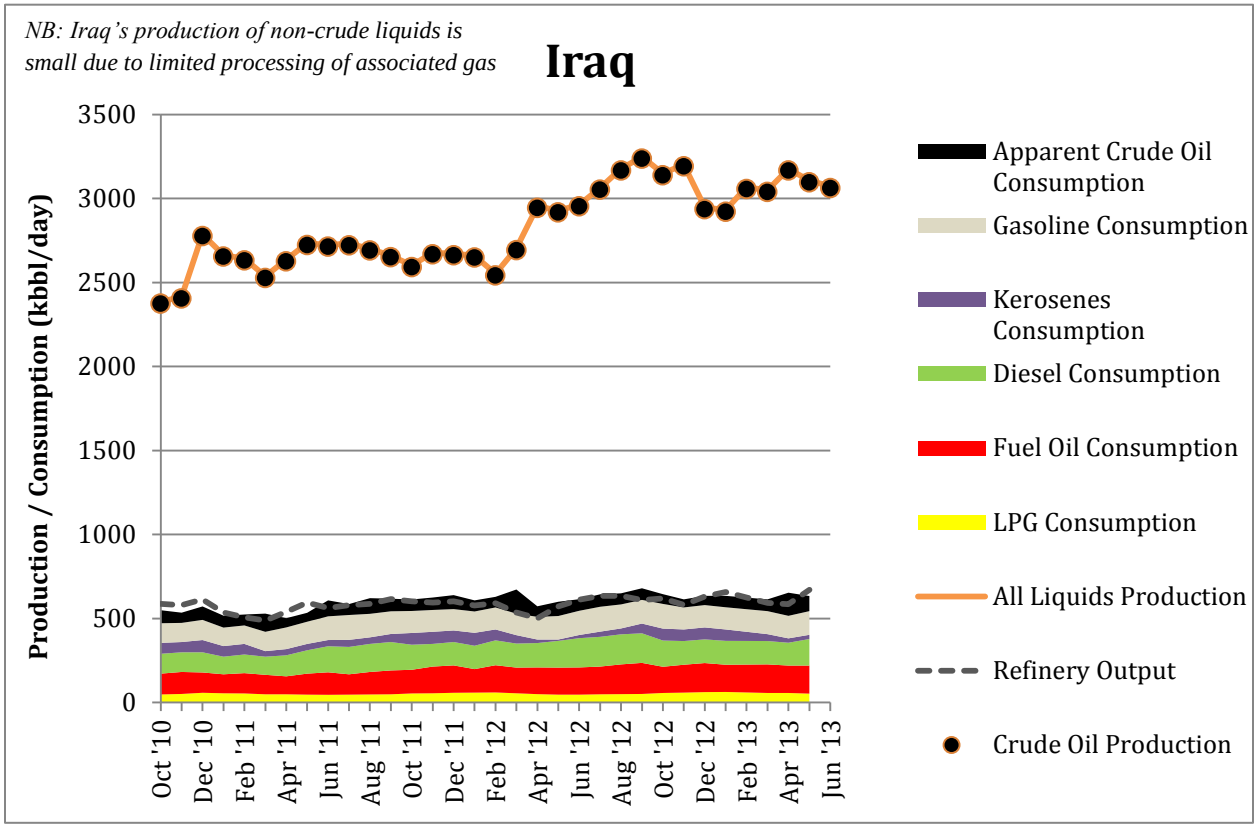
- Saudi Arabia's gas drilling continued to increase in June.
- Egypt's rig count continued to fall for the second consecutive month.
- All UAE gas rigs are located in Abu Dhabi; there are no current gas projects in Dubai.
- Oman's rigs bounced back in June to reach April's level, after a slight drop in May.

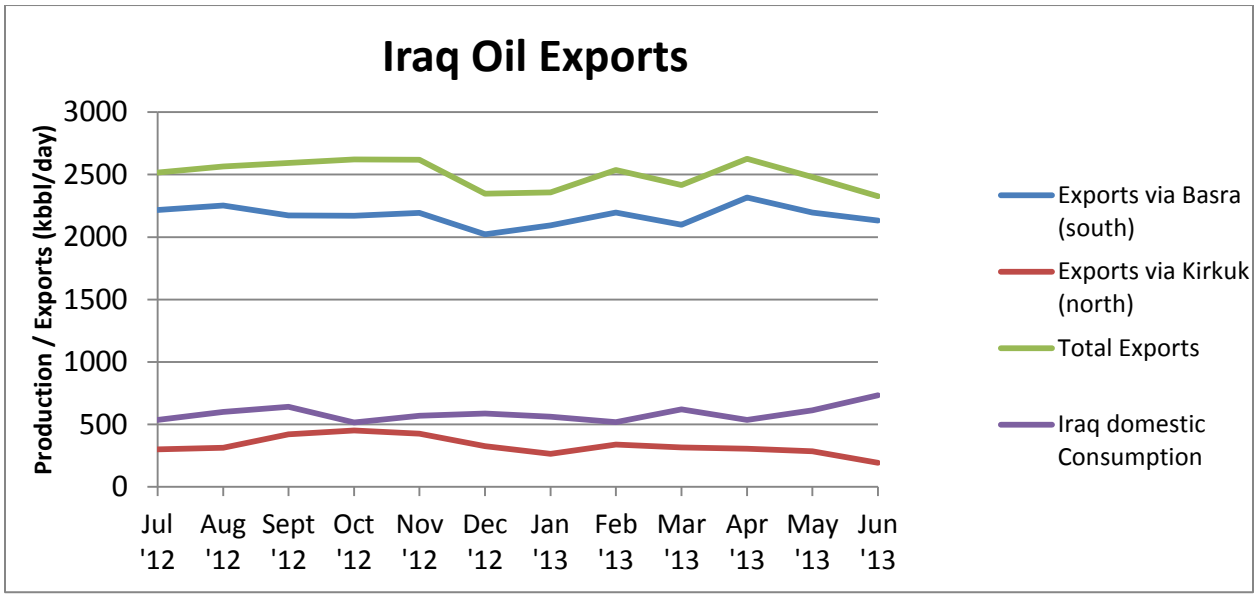


- UAE's crude oil production remained stable in June
- The country has not updated its reported consumption figures since December 2012



- Saudi crude oil production increased by 100 kbpd in June to 9.7 Mbpd
- Saudi crude oil exports increased slightly in May
- Domestic consumption increased in May and June, with direct crude oil consumption expanding as the summer season arrives

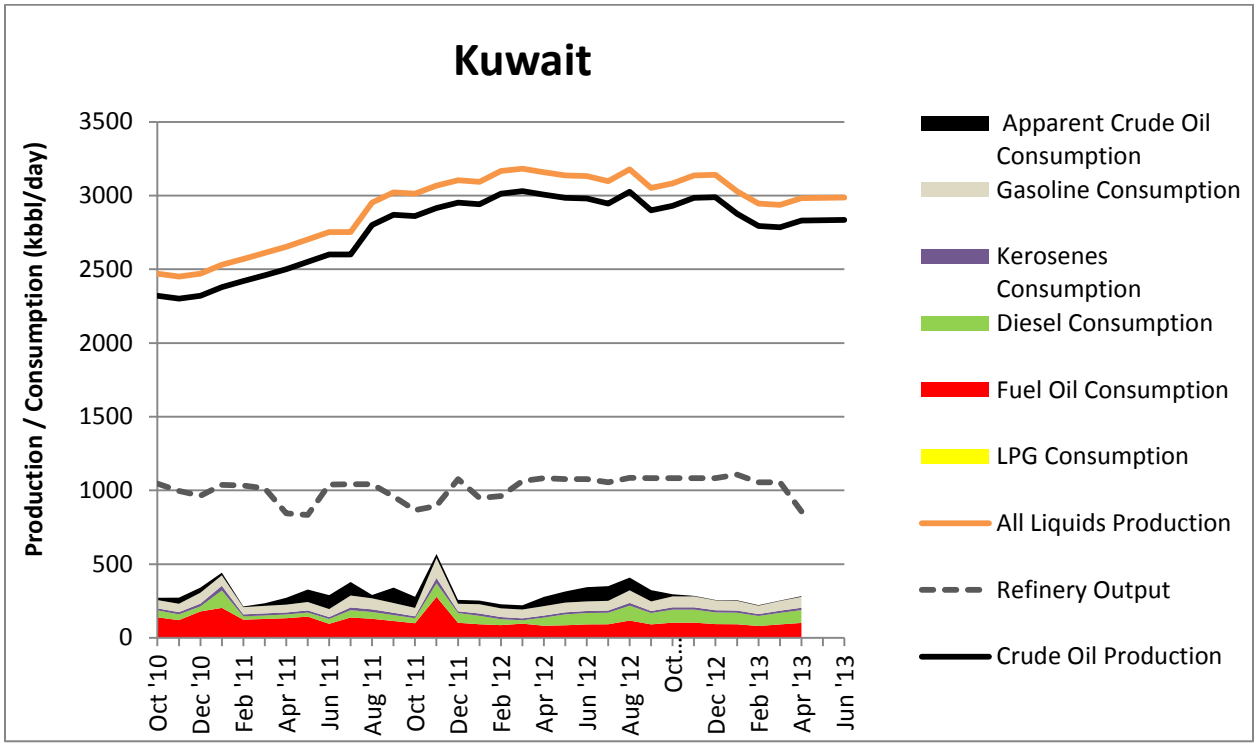




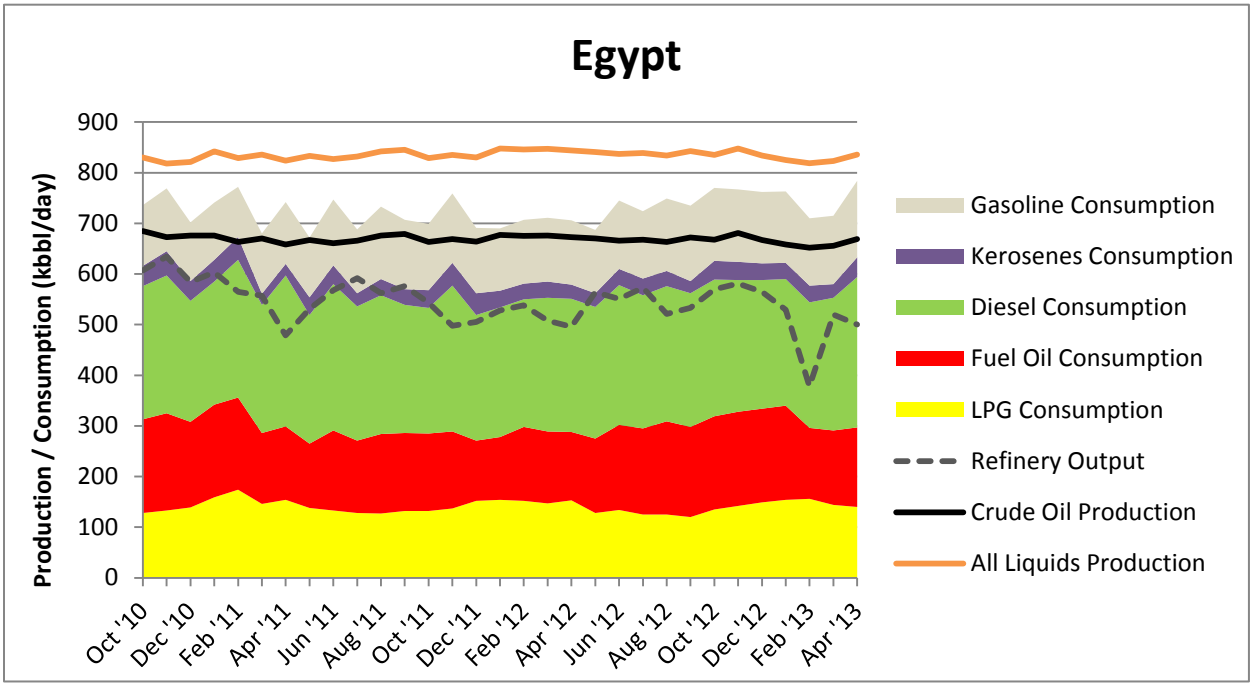
Source: Iraq Oil Ministry

- Iraq's crude oil production continues to fall for the second consecutive month
- Iraq's refinery output shows a slight increase

- Iraq's crude oil exports dropped for the third consecutive month to reach a 15-month low; this is mainly due to the bombing of Kirkuk pipeline on June 21st and the ambush on the crew that was sent to fix the pipeline which resulted in the deaths of 2 engineers and further delays; southern exports were hampered by technical problems at the Basra Oil Terminal. Maintenance of the single-point moorings at BOT will cut September exports by 400-500 kbpd.
- Iraqi oil production has been hampered by technical problems at Rumaila, and a delay in the start-up of the Gharraf field until end-August. Production around 2.9 Mbpd is well below annual target of 3.7 Mbpd; 2014 production expected around 3.3 Mbpd, below 4.5 Mbpd target.
- The increase in domestic consumption also contributed to reducing the level of exports.



- Kuwait oil production was steady in June, having fallen back significantly from its recent high in November
- Kuwait faced a drop of its refinery output by almost 200 kbpd in April.



- 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

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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