



Fujairah 1 - Power and Desalination Plant. Photo courtesy of TAQA.

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New President in Iran offers to alter energy politics

By Robin Mills

Iran's presidential elections almost invariably spring a surprise, and each new president has heralded a sharp turn in the country's direction - post-war economic recovery under Akbar Hashemi Rafsanjani in 1989, social liberalisation after Mohammad Khatami's 1997 upset, hardline defiance and populism with Mahmoud Ahmadinejad in 2005 and mass

protests against his allegedly fraudulent re-election in 2009.

Just as inevitably from this founding member of Opec - and now the world's largest gas reserves holder - these changes ripple out into world energy markets. Sanctions on Iran have created space for Iraqi expansion and United States shale oil, sparing Saudi Arabia and Qatar some hard choices.

Now Hassan Rowhani's win confounds predictions that this was not an election, but selection by the supreme leader, Ali Khamenei, from a stable of uninspiring conservatives. Rather than a radical reformist - who would never have passed the vetting process - Mr Rowhani appears a well-educated, likeable pragmatist, who is also a tough negotiator and nationalist.

Iran is far from a democracy, but it is not North Korea or Bashar Al Assad's Syria either. The president, though not the final decision-maker, can exert genuine power, change the tone of international discussions and push the boundaries of domestic debate.

The electoral failure of Mr Khamenei's closest confidant, the nuclear negotiator Saeed Jalili - barely scraping third place with just 11 per cent - repudiates the regime's uncompromising international stance. As the Iranian analyst Karim Sadjadpour quoted a prominent Tehran businessman as saying: "His entire

resume consists of showing up at a few negotiations and saying no".

The supreme leader remains the arbiter of any nuclear deal. Will Mr Rowhani merely present a more friendly face and better economic management than the rabble-raising Mr Ahmadinejad, giving cover for continued nuclear work while sanctions erode? Or does his election open up the chance of a genuine deal? But at least the prospect of war and oil market chaos has been pushed back.

The United States has its own hardliners, and the confusing thicket of American, European and international sanctions will not be easy to untangle. Some congressional measures are tied to human-rights issues that go well beyond the nuclear file. And it needed intense diplomacy and pressure to introduce the most stringent multinational restrictions - the US will fear they could not easily be reinstated, were a deal with Iran to stall.

Now, negotiating an end to the most severe sanctions on oil sales, insurance, shipping and financial transactions could release up to a million barrels per day (bpd). If Saudi Arabia alone had to absorb that cut, its production would fall to barely 8 million bpd, and prices would still drop as risk perceptions ease.

Opportunities have been missed before to turn energy cooperation into wider detente. In 1995, Bill Clinton vetoed a contract for the US oil company Conoco to develop Iran's Sirri fields, just over the maritime border from Dubai.

Lack of competition within Opec was the key contributor to the massive run-up in oil prices from 2000 onwards. With the US now acting as though it were already "energy independent", the rest of world remains uncomfortably dependent on Saudi Arabia. Iran, which overtook Russia in gas reserves in BP's latest annual update, could also counter Vladimir Putin's use of energy as a political tool.

In the longer term, all consumers benefit from a more abundant and diverse energy supply. Even if the US feels itself invulnerable, its allies in Europe and East Asia are not.

It is far too early to know whether a deal is achievable this time. But both sides have to be prepared to take any opportunity.

Energy should stop being a tool for confrontation on one side and coercion on the other. Instead, Iran's oil should benefit its long-suffering voters - who have made the best of the choices they were given.

A version of this article appeared in The National newspaper on June 17th, 2013

Power and Water Challenges in the UAE

By Roa Ibrahim

Soaring skyscrapers, artificial islands, vast new malls, lavish tourism centres and mega-scale aluminum plants require vast quantities of electricity. The UAE's

growing demand poses new economic and environmental challenges – and advances in solar technology are one part of the solution.

Despite growing problems with gas-fired electricity, Booz & Company forecasts that the Middle East would continue using natural gas as the prime source of power generation. It predicts that in 2020, natural gas would account to 63% of the region's power generation compared to nuclear, coal, renewable energy and liquid fuels.

Abu Dhabi and Dubai dominate the UAE's electricity demand. Electricity consumption is growing at 8.5% each year. Power demand in Abu Dhabi is expected to grow 11% each year to 2015 while power demand in Dubai is expected to grow at 3.5% to 2019 and 2.5% from 2020 to 2030. In the UAE, natural gas is used to fuel the generation of electricity as it is abundant (the country holds the fifth largest gas reserves in the world) and clean, but the country has become a significant importer over the past six years. Natural gas provides more than 99% of the fuel for power generation, and 60% of the country's gas consumption is allocated for electricity (the remaining 40% is utilized in industry, particularly for oil-field reinjection).

The rising population and GDP will also increase the demand for natural gas, especially as petrochemical and aluminium industries continue to expand. The IMF predicts a GDP growth rate of

3.6% this year and 3.7% and 3.8% in 2014 and 2015 respectively. Manaar Energy Consulting research showed that a \$1 billion increase in UAE GDP requires approximately 0.39 TWh increase in electricity demand and that the elasticity of electricity demand with GDP since the year 2000 is approximately 0.7 (10% GDP growth is approximately equivalent to 7% electricity demand growth).

Hence, the UAE is facing growing gas challenges, particularly over the next few years while demand continues to grow strongly but new supplies and substitutes will not yet be in place. Some of the UAE's main gas challenges are in gas production and in balancing supply and demand. A high percentage of gas in Abu Dhabi, as in the Shah and Bab projects currently underway, is sour gas - highly toxic and corrosive, and so difficult and expensive to process.

Balancing supply and demand of gas is made more challenging by the use of gas in oil fields as an Enhanced Oil Recovery (EOR) technique. Moreover, Abu Dhabi has long term contracts to supply LNG to Japan (4.7-4.9 Mtpa from total plant capacity of 5.7 Mtpa).

Dubai imports 99% of its gas needs, at first by a pipeline from Abu Dhabi and Qatar, and later beginning LNG imports in 2010. Abu Dhabi has initiated construction of an LNG terminal in the Indian Ocean emirate of Fujairah to meet power and water needs.

Finally, high and volatile gas prices are posing a challenge for importing countries. Such challenges are opening a path for alternative energy, particularly solar energy, and driving pressure for energy efficiency and a more effective use of generating assets.

On the bright side, Abu Dhabi and Dubai are investing in renewable and nuclear energy projects. The UAE, and other GCC countries, have begun to invest in renewable energy projects.

The cost of solar PV remains higher than using cheap associated gas, but solar photovoltaic (PV) systems, whose cost has decreased by more than 50% over the past five years, is increasingly competitive with higher-cost gas or oil. The electricity generation cost of rooftop solar PV is 14.8¢/kWh and utility-scale solar PV is 9.8¢. With reasonable assumptions on fuel prices, electricity generation costs for LNG and oil are 14.5¢ and 18.1¢ respectively. Using cheap associated gas (\$1/MMBtu) costs just 3¢ whereas sour/unconventional gas at \$8/MMBtu costs 8.4¢. Also, because renewable energy is produced domestically, its price is not volatile and supply is secure from political issues, unlike imported oil and gas, an issue for Dubai in particular.

Abu Dhabi's alternative energy projects include a 30 MW wind farm, Masdar City Photovoltaic Generation Facility (10 MW), Masdar City geothermal wells, Shams I concentrated solar power (CSP) plant (100 MW), Noor I photovoltaic solar

power plant (planned to be 100 MW), 3 waste-to-energy facilities and a 5600 MW nuclear plant currently being built at Braka in the Western Region. A carbon dioxide capture project is underway on the Emirates Steel Plant, the CO₂ to be used for enhanced oil recovery.

Similarly, Dubai is planning a 48 km² Al Maktoum solar PV park to be built by 2030. Green building regulations mandate that solar water heating must provide 75% of requirements for all new villas and labour accommodation. The Emirate is also planning a "clean coal" plant incorporating carbon capture and storage.

The UAE is not the only GCC country which is investing in its power sector as a means of meeting the rising demand for power. Gulf News reports that the bloc is expected to invest \$250 billion in the power sector before 2020 to meet the staggering rise in demand for power. The GCC countries are, however late, realizing the need for rationalising consumption, preserving their hydrocarbon resources for export, and improving their environmental footprint.

Saudi Arabia, for example has mentioned the use of nuclear energy in its power sector, as well as the construction of a 1.1 GW solar PV and a 900 MW CSP in the first round of renewable energy procurement. Oman and Kuwait are both planning the establishment of solar EOR projects while Qatar is planning a 200 MW solar power plant.

Because PV costs have come down so dramatically, while CSP remains quite expensive, PV seems set to be the technology of choice in the Gulf. PV has an advantage over CSP in this region since it is less affected by dust and haze.

However, at higher levels of solar generation, the challenge of meeting peak early-evening demand in summer may require more use of CSP given its potential for energy storage.

Smart inverters technology could compliment the utility PV programmes in Dubai and Abu Dhabi. Smart inverters enhance communication, control and monitoring and so improve integration with the grid. They allow access to a live network as well as the PV system performance data. Smart inverters also facilitate the remote control of the systems such as turning them on or off and controlling their active and reactive power output.

Automated cleaning solutions could keep solar power plants working efficiently even during sandstorms. Moreover, new advancements in storage solutions could store solar power, for up to 9 hours, and transmit it during peak times (which are between noon to 5pm). As the proportion of solar electricity in the grid increases, such techniques will become increasingly important.

Water supply in the UAE is also constrained. It has one of the highest water consumption per capita in the world with average consumption rate of

0.55m³ per person per day and a staggering growth rate of 8 to 10% per year. The UN warned the UAE of water shortages in 2009 and the 2009 Arab Human Development Report warned that the UAE and Kuwait are the two Arab countries facing “critical” water shortages. More than 70% of the water is used for irrigation.

To tackle the problem, the UAE government, and other parts of society such as universities, are urging people to cut down on their water consumption. For example, Heriot Watt University in Dubai, in partnership with the Emirates Green Building Council, introduced a course in 2011 to educate students on how to use water reasonably.

One possible technology which could be of benefit to the UAE is the integration of membrane distillation (MD) technology for water treatment of non-traditional (unconventional) water sources including industrial produced water and sea-water, oil and gas production water, saline ground water and boiler blow-down. MD technology would use the energy from waste heat to steer a membrane separation procedure capable of treating the unconventional water sources. A research paper on this topic produced by Sandia National Laboratories, mentions that the main advantage of MD over reverse osmosis (RO), another leading water treatment technology, is the MD process, unlike RO, requires little additional energy input.

Masdar, Abu Dhabi's clean energy company, is actively researching and investing heavily in alternative energy projects, including wind and solar, and carbon capture and storage, and energy and material efficiency. Masdar has five research centres with each centre aimed at addressing a specific research challenge in advanced energy and sustainability. The Centre of Excellence in Desalination and Water Technologies, for example, aims to develop solutions for desalination, water and waste water treatment, and water re-use. The Research Centre for Renewable Energy Mapping and Assessment supports the Abu Dhabi-based International Renewable Energy Agency in progressing a publicly-accessible atlas of solar and wind resources, develops the UAE solar and wind energy resource maps, and develops regional knowledge in renewable energy assessment and mapping for the Arabian Peninsula and Africa.

With the UAE needing to move quickly to avoid shortages of both water and electricity, investments in advanced technology and research and development will allow for further developments and improvements in environmental quality. There have been many innovations in the renewable energy industry, much of which could be very useful for the UAE. Holding nearly half of the world's renewable energy potential, it is time for the Middle East to start exploiting its renewable natural

resources to address challenges in energy security.

Officials take note: there's no easy cure to electricity crises

By Robin Mills

Electricity crises are all alike. Within our region, Egypt, Yemen, Iraq, Lebanon and Pakistan are in the grip of full-blown epidemics. Kuwait, Sharjah, Saudi Arabia and parts of India show some of the symptoms. Although the malady varies from place to place, the underlying causes - and the effects - are very similar.

It begins with an understandable, but misguided, wish to keep prices low. This is thought to protect poorer consumers and encourage industry. The government either pays an explicit subsidy to its electricity company or supplies it with below-cost fuel or expects it to swallow losses. Non-payers are not disconnected; illegal connections are tolerated so that alleys in the back streets of Baghdad or Lahore are festooned with cables.

As Hemingway said: "How did you go bankrupt? Gradually, then suddenly." The consequences of this policy are predictable.

The vocal middle classes - who have air conditioning and televisions - gain most of the benefits. Big industries, with political clout, become hooked on cheap electricity.

Consumption soars, while the rural poor, without grid connections, benefit little. If a country or region is lucky enough to

enjoy abundant low-priced domestic gas - as Egypt, Pakistan and the Arabian Gulf nations did until recently - it quickly exhausts these supplies and turns to burning much more costly oil.

The state utility's finances become ever more precarious. Inefficient old grids waste increasing amounts of power. The electricity company fails to build generating plants - and for a while, living off spare capacity seems sustainable to the politicians.

With the sharp rise in oil prices in recent years, the utility finds it simply cannot afford fuel, as Sharjah's Sewa and Egypt's state electricity company have found. Pakistan's "circular debt" - a Gordian knot inside a muddle inside a conundrum - involves state oil companies and utilities all owing each other money.

In Iraq and Yemen, security problems make the problem even worse - power lines are attacked; international investors are scared away.

Then the crisis gathers pace. The government imposes rolling blackouts. At times, the grid breaks down entirely as in the great Indian blackout of last July. It may be a crisis of fuel supply, of generating capacity, or both.

Last month, Egyptians launched a campaign not to pay their electricity bills as long as the power cuts persist. However understandable, this tendency is disastrous.

Once a culture of non-payment is entrenched, it is almost impossible to eradicate: as much as half of India's electricity is not paid for. Hardly surprising, then, that India's state utilities, already bailed out in 2003, will have to be rescued again.

Governments make extravagant promises that the crisis will end soon but power plants take years to construct, even under favourable conditions.

When attempts are made to increase electricity prices or bring in private investment the state faces opposition from consumers - who don't appreciate paying more for a still unreliable supply. The lack of reliable power completely undermines a modern economy. The National reported in April how one Sharjah scrap metal company had to relocate to Dubai.

In Egypt, Lebanon and Pakistan, the impact is more widespread and severe. The declining economy gives their governments little financial or political capital to tackle the problem. Developing nuclear or renewable energy or new gas imports demands high technical competence.

There is no easy cure - mustering the political will to take on vested interests, reform prices, replace outdated technologies and attract private investment is a long and painful process. Far better to recognise, and avoid, the pattern of electricity crises.

A version of this article appeared in The National newspaper on June 10th, 2013

Lebanon plans for a gas-fuelled but sensible future

By Robin Mills

'So far, so good,' says Sami Atallah, the director of a Lebanese think tank. Since the giant discoveries of offshore gas in neighbouring Israel and Cyprus, the country is attracting attention for more than fashionistas, finance and feuding politicians. There is a palpable sense of relief - and surprise - that Lebanon has progressed so far in creating a framework for its embryonic gas industry.

Despite a very slow start, the country has passed laws, established a petroleum authority, covered its waters with high-quality seismic data to reveal the geology and attracted 46 companies to qualify for its inaugural licensing round. Among them are giants of the industry such as Shell, Chevron, Statoil, Petrobras and Petronas. Now it needs elections and a new cabinet to pass two crucial decrees by the autumn.

The energy minister, Gibran Bassil, announced on Friday that just a small part of Lebanon's offshore zone might hold 30 trillion cubic feet of gas, enough to meet the country's current demand for more than 200 years. Only drilling will tell for sure if Lebanon has gas - and perhaps oil. But just last month, there was yet another sizeable Israeli discovery at Karish, within a few kilometres of Lebanese waters.

So far, international attention has focused more on how large gas finds are already reshaping the politics of the Levant, Turkey and Cyprus. At least outside Lebanon, there has been less discussion of what its offshore resources could mean for the country itself - its shaky economy and turbulent politics.

Lebanon is different from new oil states in sub-Saharan Africa. Yes, governance and the state are weak. But Lebanon has a wealth of human capital - including among the large diaspora - in relevant areas such as finance and engineering. Its petroleum policy gives preference to local contractors, in the hope that - like Brazil or Norway - it can develop a robust local oil services industry.

The plan is to place petroleum revenues - which would arrive in 2019 at the very earliest - in a sovereign wealth fund under independent supervision. This is intended to save it from being doled out to competing political factions. Then - at least in theory - decisions can be made on how to spend it.

There are four main options. The money can be saved for future generations (as in Norway), used to pay down Lebanon's extraordinary public debt (almost 140 per cent of GDP), distributed to citizens directly (as in Alaska, where the payout was US\$878 last year for most residents) or used for government expenditure, typical of most oil-producing countries. Of course, Lebanon badly needs to improve social services, health, education, its painfully sluggish internet and woeful

electricity supply. Offshore gas can certainly supply new power stations and alleviate a crushing oil import bill that reaches 10 per cent of GDP.

But with projects such as the Beirut-Sidon motorway costing four times what they should have, there is a danger that the government spends money it has not got on white elephants, corruption and patronage. Petroleum revenues have to be directed at long-term investment - in both infrastructure and people - and not in creating meaningless state jobs.

Without prudent macroeconomic policies, a sudden influx of gas money can drive up the currency and wages and hollow out the non-oil economy.

Lebanese politicians are afraid of handing petroleum money directly to citizens, for fear of accusations of vote-buying. But a universal benefit could be the best way to ensure Lebanese see the benefit of their

natural resources, gain from a truly national rather than confessional programme, and demand accountability from their politicians for how the money is spent.

The regional political scene, as the chaos in Syria grinds on and draws in Lebanese on both sides, is deeply unpromising. But progress so far on finding the gas and using it wisely has been surprisingly encouraging.

A version of this article appeared in The National newspaper on June 3rd, 2013

Key MENA Energy Issues Scorecard

Gulf gas price reform	●	↔	Price for Khazzan tight gas project agreed between Oman and BP – likely well above current domestic price
MENA unconventional gas	●	↑	BP reaches deal on gas price for Khazzan tight gas development in Oman
MENA renewable energy	●	↔	Kuwait plans 15% renewable electricity by 2030
MENA nuclear power	●	↔	UAE begins construction on second reactor
Energy infrastructure security	●	↓	Libya production below 1 Mbpd on protests; further bombing on Iraq's northern pipeline; Yemen's Marib export pipeline bombed again; attacks on Abyei pipeline threaten restart of South Sudan exports
OPEC production	●	↓	OPEC production expected down in June on US gains; IEA expects cut to 29.8 Mbpd in 2H
East Mediterranean gas commercialisation	●	↓	Israel to limit exports to 40% of production; Cyprus passes LNG export framework
Kuwait energy projects progress	●	↔	Plans to produce 60 kbpd heavy oil by 2015 and increase overall production capacity from 3.1 Mbpd to 3.6 Mbpd by 2020
Abu Dhabi concessions renewal	●	↔	
Baghdad-Erbil oil agreement	●	↔	Oil pipeline to Turkish border almost complete; no result from Maliki-Barzani talks
Iraq oil production build-up	●	↓	End-2013 target revised down to 3.4 Mbpd; exports down 0.2 Mbpd in June due to bad weather
Egypt subsidy reform	●	↔	Egypt suffering expected summer power cuts; fuel rationing plan to start soon but insufficient; strategic reserves of fuel running low
Iran oil sanctions	●	↑	Iran oil exports down to 0.7 Mbpd in May; election of President Rouhani raises hopes for nuclear negotiations

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

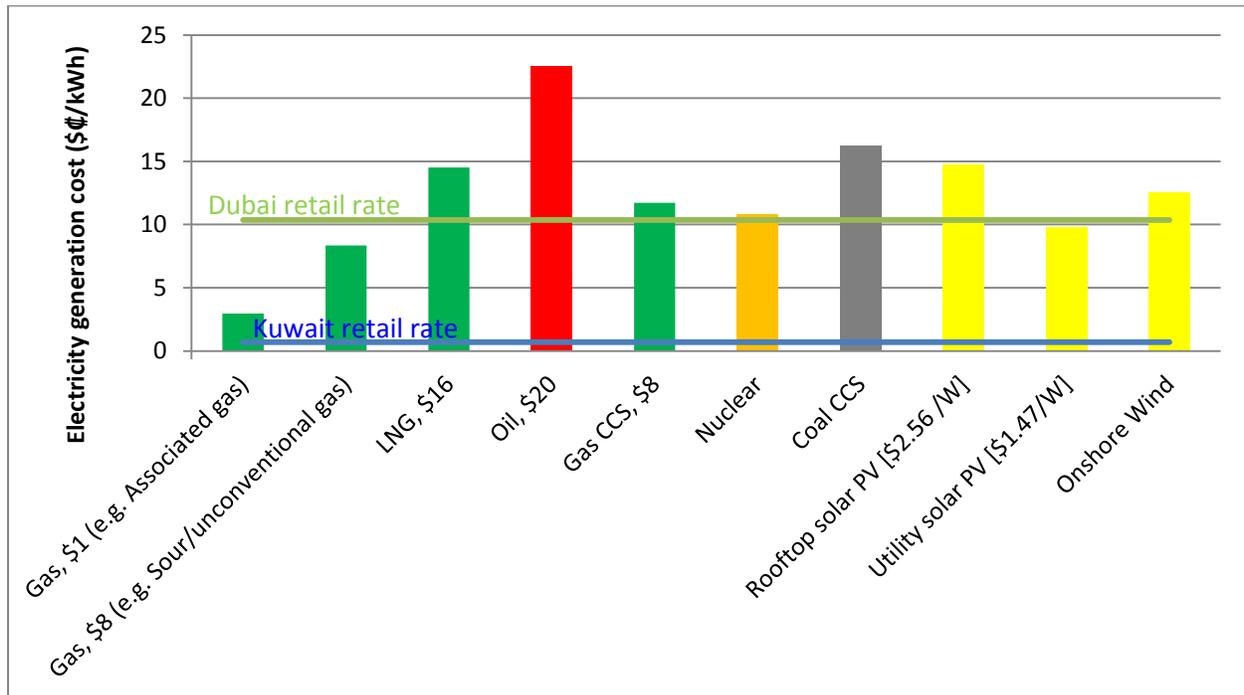
	Gasoline (\$/Litre)	Diesel (\$/Litre)	Electricity (\$€/kWh)
Egypt	0.59	0.46	6.8
Iran*	0.69** ↑	0.35** ↑	1.65** ↑
US	0.96 ↓	1.014 ↓	11.92 ↑
Lebanon	1.15	0.90	13.3
Jordan	1.38	0.96	33.2

* 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



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
- 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

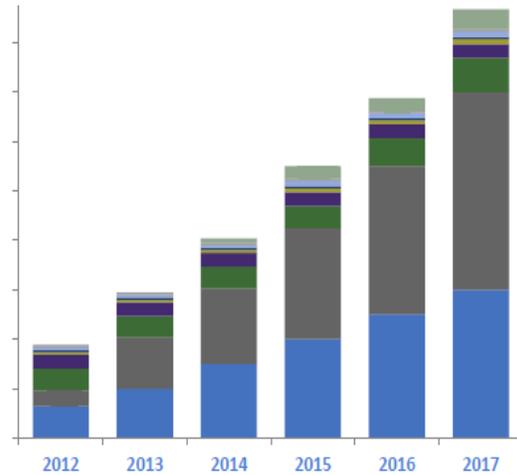


Figure 2. Forecast frac capacity, per MENA country

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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: June 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.
- 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 on the GCC at the RevenueWatch regional coordination meeting in Beirut on 31st of May 2013.

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 about gas in the Middle East at [the EIC Connect oil, gas and power conference](#) in Abu Dhabi on 4th June 2013

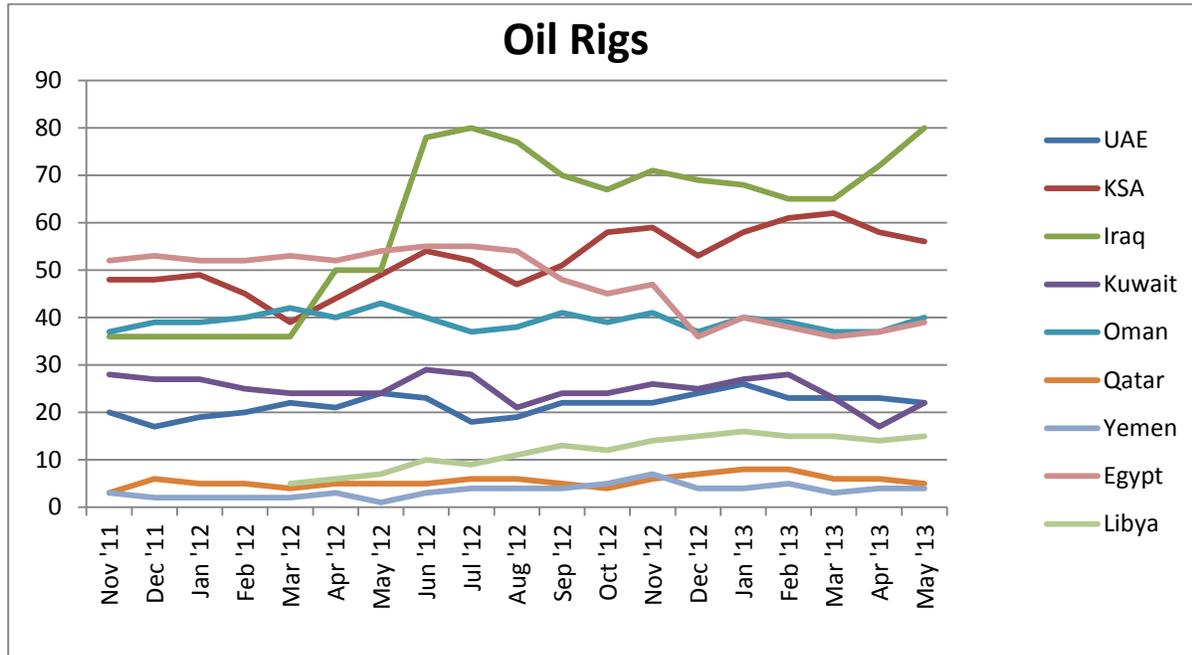
Robin Mills will be speaking on “The Arab Spring & European Energy Security” in Frankfurt, Germany on 10th July 2013

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

[MEED Kuwait Energy & Infrastructure Projects Kuwait, November 2012](#)

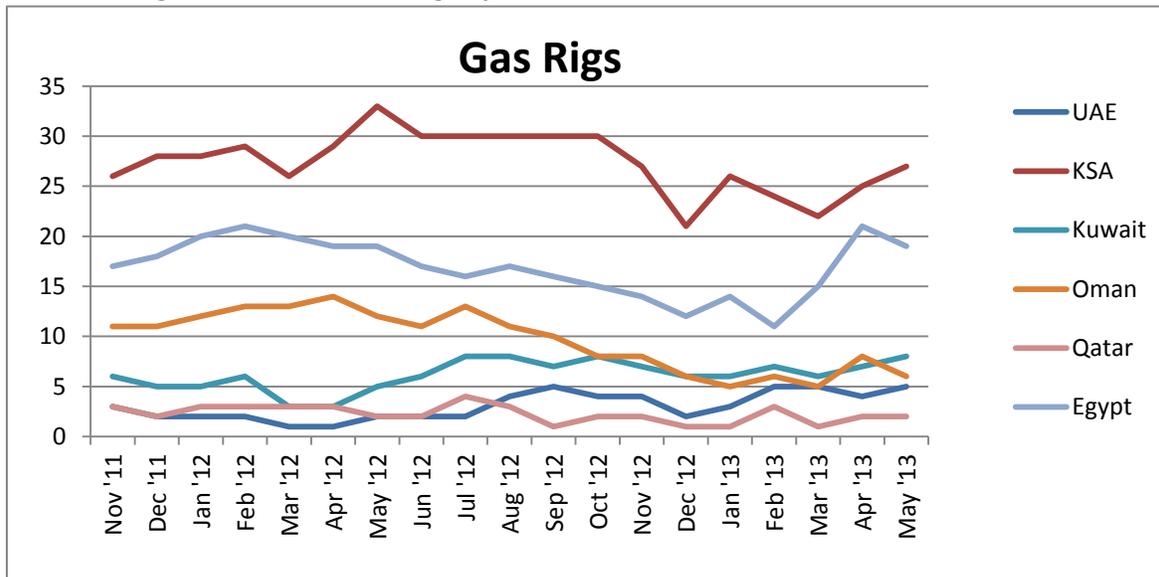
[Middle East Energy Outlook; British Business Group, Dubai, 2012](#)

Regional Energy Statistics



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

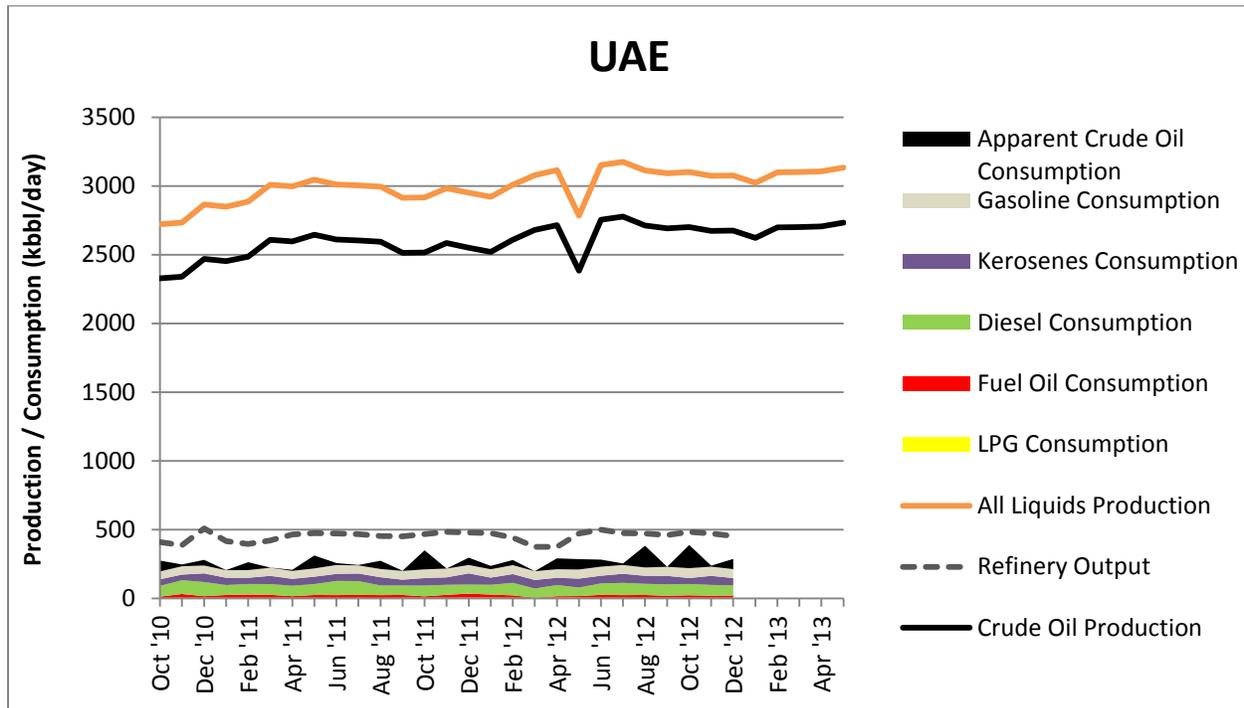
- Saudi Arabia drilling continues to decrease for the second consecutive month.
- Iraq rig count increased in May to reach the highest level since July last year, making it by some way the leading MENA driller.
- Libya rig count was steady at around pre-revolution levels.
- Kuwait's rig count increased slightly but is still lower than the March level.



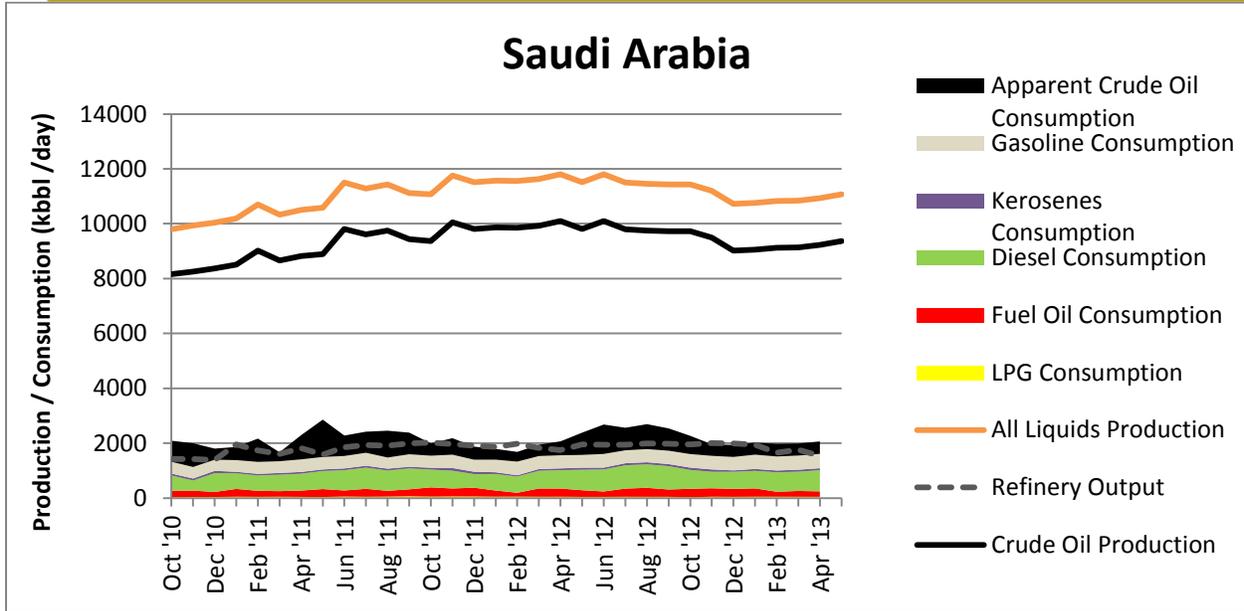
Source: Baker Hughes

Monthly Newsletter: June 2013

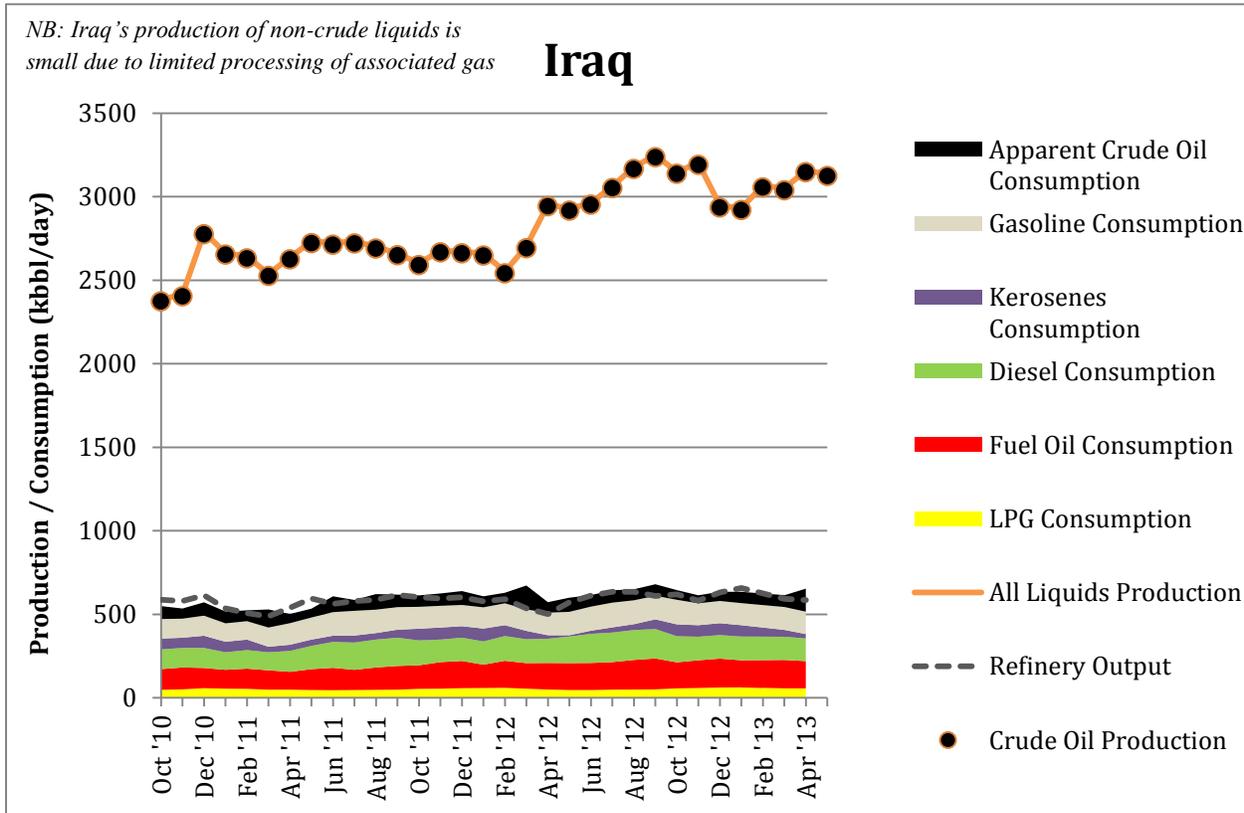
- Saudi Arabia's gas drilling continued to increase in May.
- A slight decrease in Egypt's rig count puts an end to the two month sharp increase witnessed during March and April.
- All UAE gas rigs are located in Abu Dhabi; there are no current gas projects in Dubai.
- Oman's rig count started falling again in May after the slight increase in April.



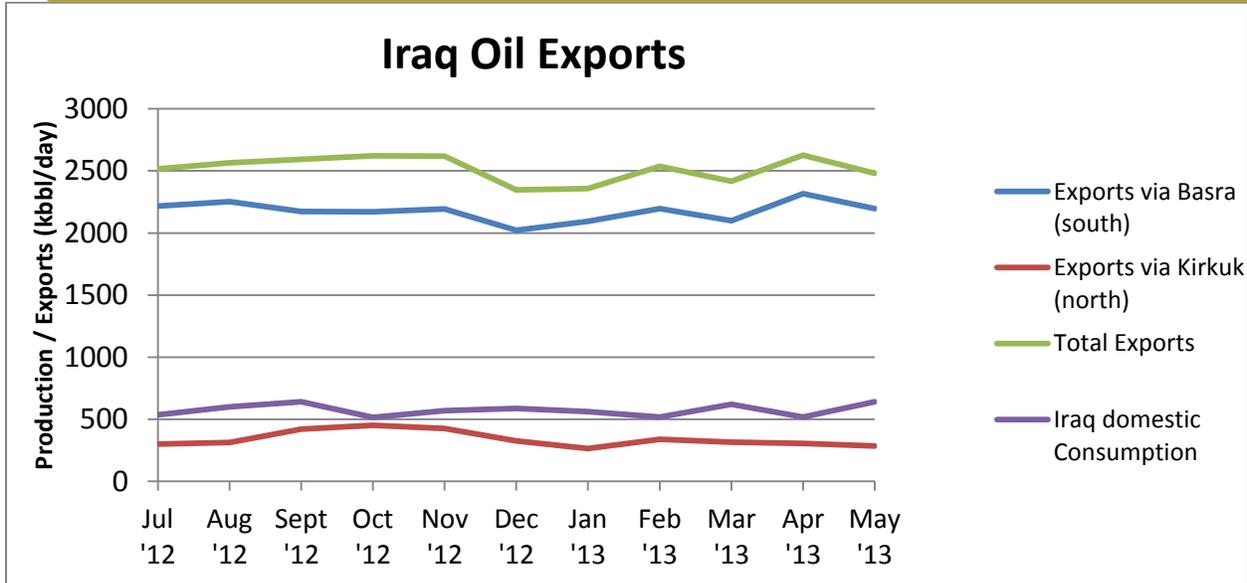
- UAE's crude oil production remained stable in May
- The country has not updated its reported consumption figures since December 2012



- Saudi crude oil production increased slightly in May to reach 9367 kbpd.
- Crude oil exports remained relatively stable.

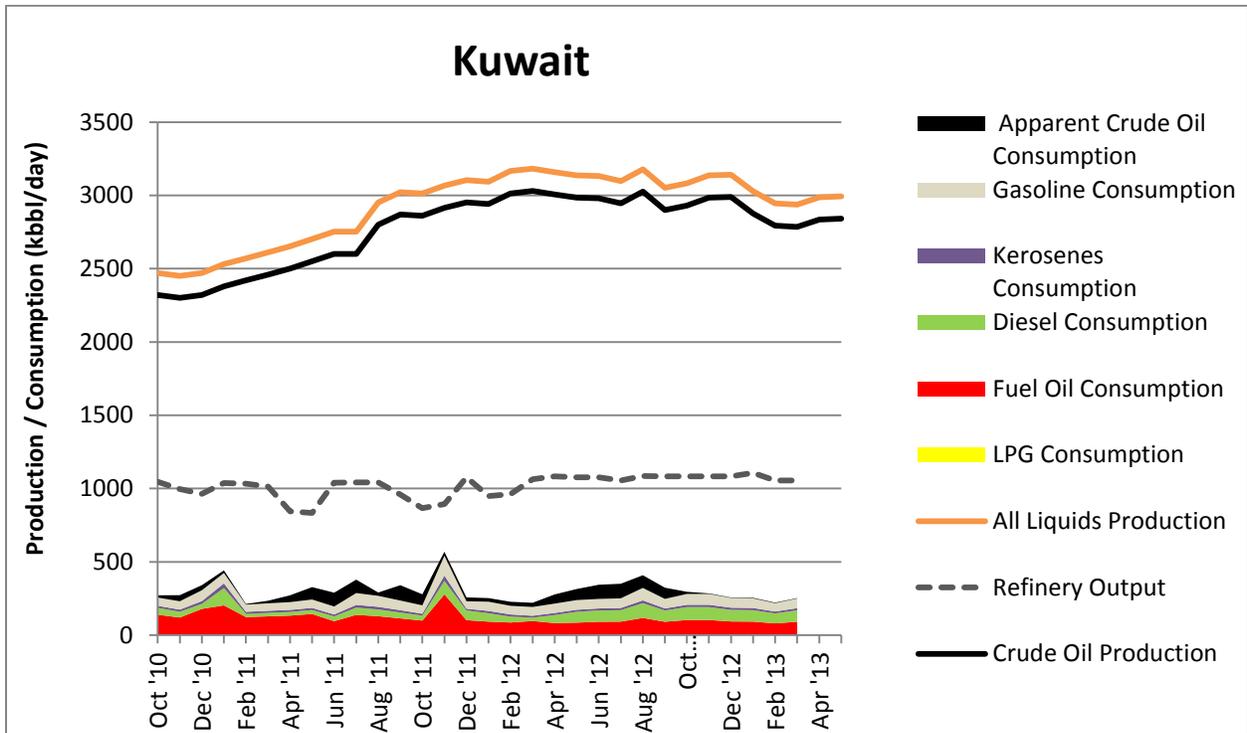


Monthly Newsletter: June 2013

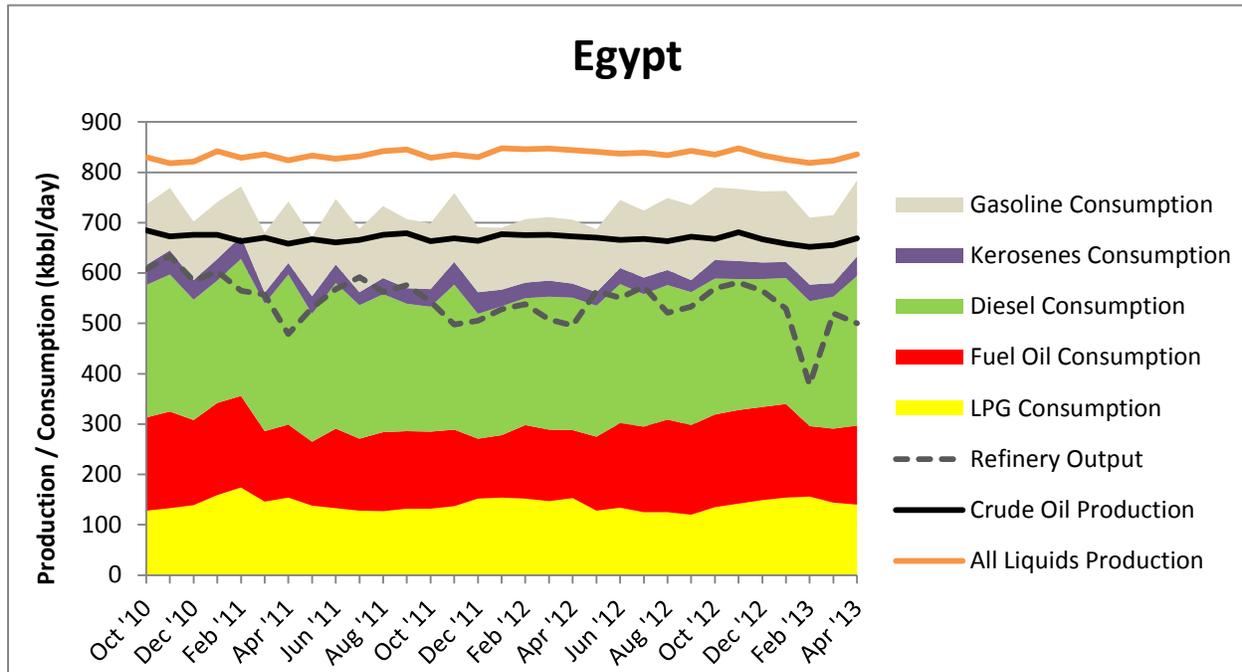


Source: Iraq Oil Ministry

- Iraq’s crude oil exports fell in May due to bombing of the northern pipeline which took place on May 17th
- The exports level was also effected by bad weather in the southern ports.
- The increase in domestic consumption also contributed to reducing the level of exports.



- Kuwait oil production was steady in May, having fallen back significantly from November



- 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

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	8	Feb - 13
Egypt	Ganope	Dec - 12	20	125,577	-	May - 13
Iraq	5 th Licensing Round	NA	10	NA	-	NA
Lebanon	1 st 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	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

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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