



Above: Pakistan Petroleum investing in Iraq even as other IOCs grow weary of insecurity. Photo: File

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**East Mediterranean Poised for further Energy Action** Photo:File

Hydrocarbon news in Lebanon, Turkey, Cyprus and Israel: the next twenty four months are crucial for development of the energy sector of the East Mediterranean. Page 2



**Putin's power politics dependent on Russia's energy reserves** Photo:File

The Russian President takes a risk on Ukraine, with a vulnerable economy, reliant on its energy coffers, but a favourable political arena. Page 3

## East Mediterranean Energy Sector poised for further energy action

**Exploration and development of gas resources in the East Mediterranean is continuing at a fast pace, but political challenges continue to loom.** *By Gary Lakes*

Things have been quiet in the East Mediterranean in recent months as the governments of the countries in the region struggle to make decisions over how to proceed.

The Republic of Cyprus has been occupied since February with a new round of negotiations with the Turkish-Cypriot administration on the northern side of island and a reshuffle in the government last month, but developments in the Cypriot energy sector are expected to pick up by the end of the summer, when a new round of drilling gets started.

Italy's Eni, with partner Kogas of South Korea, plans to start a four-well drilling program by August, according to Cypriot officials. Eni and Kogas were in January 2013 awarded Blocks 2, 3 and 9 following the successful 2013 licensing round. Noble Energy, which in December 2011 made a natural gas discovery in the Aphrodite structure in Block 12, plans new exploratory drilling in the block during the second half of this year, while France's Total is expected to begin drilling at least one well in each of its two blocks in mid-2015. Total was awarded Blocks 10 and 11 in February last year.

Only two wells have been drilled offshore Cyprus, both by Houston-based Noble Energy, which has discovered some 35 trillion cubic feet (Tcf) of natural gas offshore Israel. Noble had estimated its Aphrodite discovery at a gross mean of 7 Tcf. That launched a plan, backed by Nicosia for the creation of an onshore LNG plant at Vassilikos on the southern coast. Last June, the Cypriot government and Noble signed a memorandum of understanding designed to create the framework agreement for an LNG project, but talks have yet to conclude and are expected to be complete by June or July this year.

An appraisal well in the Aphrodite field that Noble completed last October resulted with the estimate being reduced

to 5 Tcf, meaning that the gas resource was not quite large enough to hurry ahead with the LNG.

However, Cyprus has not abandoned its intention to build a LNG export terminal, but it acknowledges that more drilling is necessary and new discoveries confirmed before the project – upon which the government sets its energy policy – can move forward. Nonetheless, Total and Eni have expressed their interests in participating in a Cyprus LNG project, provided they make sufficient gas discoveries.

Lebanon on 20 March found itself with a fully-fledged government for the first time in nearly a year. Among the numerous issues that the government of Prime Minister Tammam Salam must deal with is that of passing two decrees that are essential for the country's first offshore licensing round to proceed.

Lebanon launched the pre-qualification phase of its licensing round in February 2013 and 46 companies have been approved to participate in the round. But two decrees – one concerning the model exploration and production sharing agreement, the other approving the demarcation areas for 10 offshore blocks – must be approved by the cabinet before the companies can tender their bids. Under the caretaker cabinet, the decrees could not be legally approved.

The closing date for the licensing round, originally set for November 2013, has been extended three times. The latest date is 10 April, but with barely more than two weeks until that deadline, it is clear that the closing date will have to be extended again.

Extensive seismic work has been carried out in Lebanon's offshore and it is considered highly prospective, but it can be imagined that the licensing round will be extended until late summer and it could be

early 2015 before any blocks are awarded and exploration gets underway.

In Israel, the government continues to wrestle with a number of regulatory issues that are preventing Australia's Woodside Petroleum from joining the Leviathan project. Woodside has agreed to pay \$2.7 billion for a 25% stake in the field. Tax matters and export volumes have already delayed development work in the field by a year. The field is now targeted to come into production in 2017.

Noble brought the Tamar field, with a gas resource of 9.7 Tcf, into production last year. It is supplying domestic demand and agreements have been reached that will supply some Tamar gas to Jordanian industries and a new power station in Jenin for the Palestinian Authority.

The Leviathan partners have been in talks with Turkish companies about the export of gas to Turkey by pipeline – a scenario that will depend on a resolution of the long-standing political problems between Cyprus and Turkey – as well as supplies to Egypt, but again, the political circumstances do not bode well despite the dire need for gas that Egypt now faces. Woodside has spoken of using floating LNG (FLNG) to develop Leviathan, with a gas resource estimated at 19 Tcf, and of sending the gas by pipeline to countries in the region, including Turkey, Egypt, Jordan and Cyprus. But Israeli politics make regional cooperation difficult, as do relations between Turkey and Cyprus.

### **The next two years will be important for the East Mediterranean.**

By end 2015 Cyprus should have a good idea of what its offshore gas resource may be. Lebanon's exploration program could be well underway by that time. And a development program for the Leviathan field is expected to have materialized by then.

## Putin's power politics dependent on Russia's energy reserves

Russia's strategic use of energy exposes the failure of big MENA oil and gas producers to capitalise. *By Robin Mills*

In 1997, an obscure Russian bureaucrat wrote a dull-titled dissertation. "The Strategic Planning of Regional Resources Under the Formation of Market Relations" advocated that the state exert national power through control of its natural resources. Unremarkable enough, had not this man vaulted in 2000 to the presidency.

Vladimir Putin has put his ideas into practice ever since. He has used Russia's oil and gas wealth to tame the oligarchs, rebuild the crumbling post-Soviet state, and then to assert national power in Russia's "near abroad" and into Europe. The Ukraine crisis is the latest and most dramatic manifestation.

Mr Putin has been lucky not to face any competitor able or willing to use energy strategically. Quite the contrary – his rivals have more usually played to Russia's strengths.

Opec's successful production restraint – which, along with the Chinese economic boom, is the major factor in the high oil prices of the 21st century – gave Mr Putin the financial windfall that Mikhail Gorbachev or Boris Yeltsin never enjoyed. Relatively high production costs mean that, although Russia produces more oil than Saudi Arabia, it does not have Riyadh's ability to swing production to influence prices.

**For Russia, oil is money, while gas is strategic.** Other than across the flat Eastern European plains, the main

alternative routes for gas into Europe are gates firmly barred by nature or politics.

According to BP, Russia has the world's second-largest gas reserves. In first place? Iran, which of all countries is best-placed to challenge Russian dominance in the European gas market. But, apart from modest sales to Turkey, Iran has not emerged as a serious exporter. In the late 1990s, it was bogged down by endless domestic debates about how best to use its gas. The Ahmadinejad administration preferred the "spaghetti strategy" of drawing pipelines in all directions on a map, and not building them.

More recently, US-inspired sanctions have prevented any more progress on Iranian gas exports. At the same time, they have kept oil prices from sagging. Those US politicians now finding themselves to be Cold War warriors reborn, were often those most hawkish on Iran. They might reflect on how their monomaniacal fixation on a lesser geopolitical adversary has benefited Mr Putin.

Iraq's oil production is expanding rapidly, and – with US shale – is the largest threat to Russia's petroleum-fuelled economy. But the continuing dispute with the autonomous Kurdish region prevents gas exports to Turkey and on to Europe.

Meanwhile, though Qatar's gas is a key diversification for Europe, its latest

argument with the UAE and Saudi Arabia is unpromising for a united GCC energy strategy.

In the east Mediterranean, the US's supposed ally Israel prefers to keep most of its gas at home. Lebanon, a daydreamer with a lottery ticket imagining a Maserati, speculates about possible gas wealth rather than drilling for it. In any case, pipelines from the Levant face the obstacles of war-torn Syria or the divided island of Cyprus.

North African countries have removed themselves from contention through political upheaval and short-sighted domestic politics. Egypt has virtually ceased to export gas, selling it at home at subsidised prices to stave off discontent. For Algeria, although still Europe's key supplier after Russia, exports have shrunk as it turns an unfriendly face to foreign investment.

Russia went along with NATO action in Libya reluctantly, but it has benefited from the support that the subsequent disruptions have lent to oil prices, as well as interruptions to the country's gas pipeline to Italy.

With the past decade's energy system facing upheaval for a host of reasons, economically vulnerable Russia has taken a big gamble in Ukraine. It now looks unreliable, not only to Europe but perhaps to booming Asian economies, too. The next few years will show whether a strategic player from the Middle East or North Africa can take advantage.

## Pakistan Petroleum crosses border to seek fortune

**Part-state Pakistan Petroleum Limited (PPL) is dealing with some of the most challenging parts of Iraq.** *By Mahin Khalid Siddiqui*

With power outages going up to eighteen hours a day, Pakistan is a state desperate for energy relief. As state coffers are depleted by corruption and misrule, solar, wind, nuclear, imported LNG or domestic coal are all problematic for reasons of cost, technical feasibility and organisation.

While Islamabad and Tehran indulged in a short lived gas duet, that left Pakistan facing penalties for being unready with its share of the pipeline, it appears even a sanctioned Iran has rapidly lost interest in establishing any energy ties with such an economically challenged state. This is not to mention the relief United States and Saudi Arabia, two of Pakistan's allies, must have felt when the project stalled.

Conspiracy theories that emerged about the strategically important Muslim state's oil reserves seemed supported when, in 2013, the US based Energy Information Administration (EIA) estimated Pakistan's shale oil resources to be 9.1 billion barrels, putting it at an impressive ninth place, above Canada. However, various reasons have led a native company to seek oil elsewhere.

Instead of tapping into the hidden energy reserves of its home country, Pakistan Petroleum Limited (PPL), a partly state-owned firm, bid and won in Iraq: the Mansuriya gas field in 2010, and the exploration Block 8 in May 2012. Iraq's fourth bidding round, for exploration blocks, was widely acknowledged as falling flat. Only 4 blocks of 12 offered were awarded, and there was only one bidding

consortium for each of the awarded blocks, as UK's Premier Oil, and Japan's Japex, got rejected due to the harsh contractual terms.

Pakistan Petroleum however, has a particular advantage over mainstream IOCs. **As big oil companies like British Petroleum find their aims stymied by Iraq's bloated bureaucracy, absence of hydrocarbon laws, insecurity and a strained political fabric, Pakistan Petroleum has immense practice dealing with a similar business environment,** and rampant insecurity.

This notion is further supported when one considers the case of PPL's partnership with Zhenhua, where the Chinese company opted to pull out even as PPL went on to proceed with its 4<sup>th</sup> Round bid. An apprehensive Zhenhua cited insecurity as reasons for withdrawal. Boldly, PPL has also previously invested in Block 29 in Yemen, another high risk area, with OMV (Austria), carrying a total share of 43.75%. As PPL faces a dysfunctional government and insurgencies in Yemen, it may not come as a surprise when it deals with similar issues in war-torn Iraq, and in one of the most volatile parts, the province of Diyala.

Besides the obvious appetite for risk, it is interesting to analyse why PPL would invest overseas instead of developing its own national reserves. Some sources claim EIA exaggerates the shale oil reserves in Pakistan, while PPL itself has carried out early investigations of shale resource in Hala, Sindh Province. Even as EIA states that the country's own natural gas reserves, if tapped into, can help

meet Pakistan's energy needs for the next five decades, realism trumps nationalism as business defies all patriotic affiliations. Pakistan Petroleum simply had more to gain in Iraq.

However, it is striking that Pakistan Petroleum, able to withstand insecurity, is also willing to tolerate Iraq's tough contractual terms, given the fact it would face the same circumstances in its home country with much more mobility and concessions. One can only speculate, but clearly the large oil and gas potential of Iraq is one factor. It may be due to the immaturity of technology required for shale oil development in Pakistan, or even due to domestic political pressures on PPL should it achieve major success in unconventional reservoirs.

To conclude, regardless of where and how it invests in Iraq, the challenges Pakistan Petroleum will face are very tangible. If PPL can cope with the hostile situation in Diyala, it may go some way to establish an alternative route for Pakistan to meet its energy needs. As Iraq continues to be a pivotal state in the MENA region, MENASA's focus on it as both a political and economic partner may be another driving factor behind its place in the black gold market.

Back home, Pakistan Petroleum's investment can be a driving factor behind the Baghdad-Islamabad relationship, as Iraq's emergence puts Saudi Arabia on guard. One can only imagine the burden on PPL's shoulders right now, as it helps Pakistan make a mark as an international oil player.

## Key MENA Energy Issues Scorecard

MENA energy price reform	●	↑	Morocco ended subsidies of gasoline and fuel oil and has started to cut diesel subsidies significantly to improve public finances; businesses in Jordan face up to 7.8% price hike in electricity rates for companies consuming over 10 000 kWh
MENA unconventional oil & gas	●	↑	Production of oil shale in Jordan expected to start in 2018, to reach significant quantities by early 2020; Shell expected to start producing oil shale in 2022; Saudi Arabia boosted unconventional gas drilling plans
MENA alternative energy	●	↓	Slow progress on solar power in Saudi Arabia and Abu Dhabi; Dubai and Jordan moving ahead with power purchase agreements and bids this year; Egypt Ministry of Petroleum insists on using coal to meet domestic energy requirements, despite environmental threats, claiming to control hazards by technology
MENA nuclear power	●	↔	Dubai has ruled out building its own nuclear power plant and will be securing electricity from nuclear reactors coming up in Abu Dhabi
Energy infrastructure security	●	↓	Yemeni tribesmen blow up Marib pipeline stopping crude flow and affecting exports; rebel forces under Riek Machar in South Sudan to target Paloch oil-fields; US forces return oil tanker carrying smuggled Libyan oil, but blockade continues
OPEC production	●	↓	March oil production expected down 117 kbpd to 30.293 Mbpd, on declines in Angola (maintenance) and Libya (protests and blockades); Saudi Arabia up 100 kbpd
East Mediterranean gas commercialisation	●	↔	<i>See article on page 1</i>
Kuwait energy projects progress	●	↔	Kuwait delayed heavy oil bids; proposal for Fars reservoir now due in May; approved power lines to boost transmission from Subaiya power plant; however Kuwait's projects market underperformed in 2014 to date.
Abu Dhabi concessions renewal	●	↔	ADCO bids under evaluation
Baghdad-Erbil oil agreement	●	↑	KRG agreed to export 100 kbpd via Baghdad's oil pipeline through the Iraq government-controlled company State Oil Marketing Organisation; halted budget funds released
Iraq oil production build-up	●	↑	Russia's Lukoil started oil production at West Qurna 2, with an initial start-up of 120 kbpd increasing to 400 kbpd as Iraq oil production increased 13% to 3.3 million bpd
Egypt subsidy reform	●	↔	Egypt subsidy bill to rise by 10% to 12% by 2015 unless reforms introduced, government to introduce smart cards for underprivileged to benefit from subsidies
Iran oil sanctions	●	↑	Iran's crude oil exports up 14%; above that expected under the January 2014 nuclear deal for 5 <sup>th</sup> consecutive month; Iran signed preliminary gas export deal with Oman

●	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 February 2014 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	0.26	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*	0.7** ↑	0.35** ↑	1.64**
US	0.87 ↓	1.027 ↑	12.61
Lebanon	0.878 ↓	0.87	13.3
Jordan	1.4 ↑	0.98 ↑	33.2

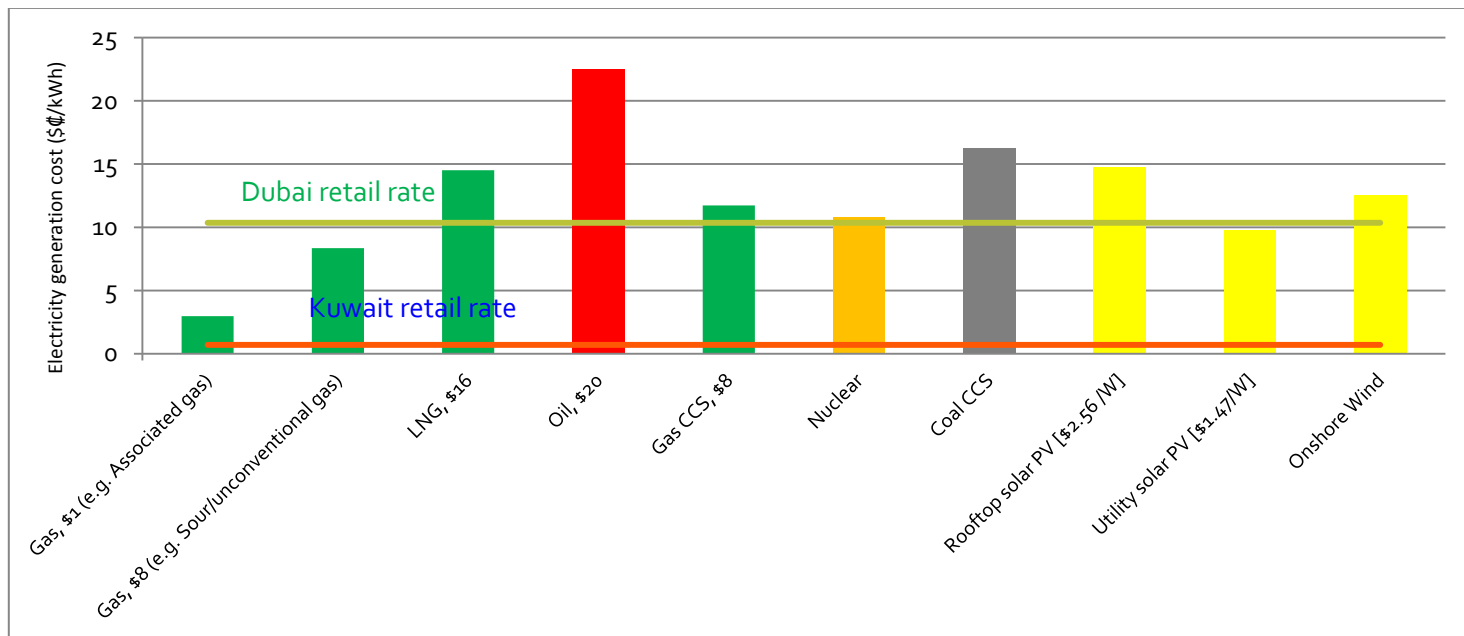
\* Non-subsidized allocation, at current (volatile)

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

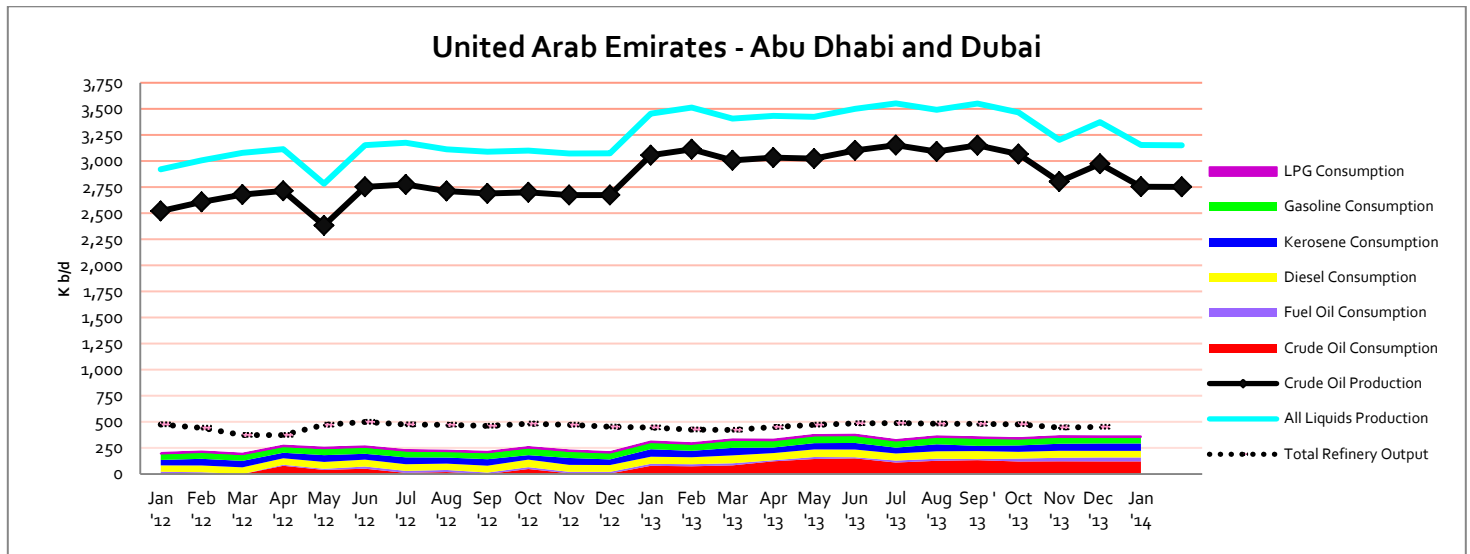
Open-market exchange rate (US\$1:IR 24942)

Note: Gasoline & diesel are pump prices. Only the US, Lebanon and Jordan prices can be considered non-subsidized.

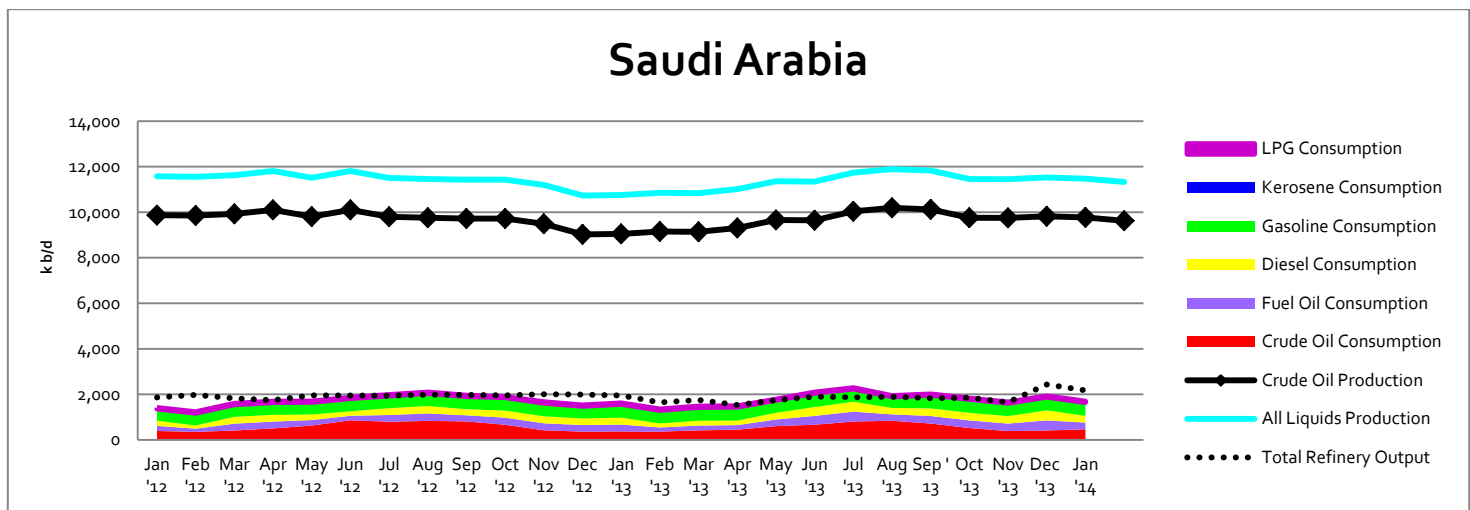
Source: Gulf Oil Review; Manaar research



## Regional Energy Statistics

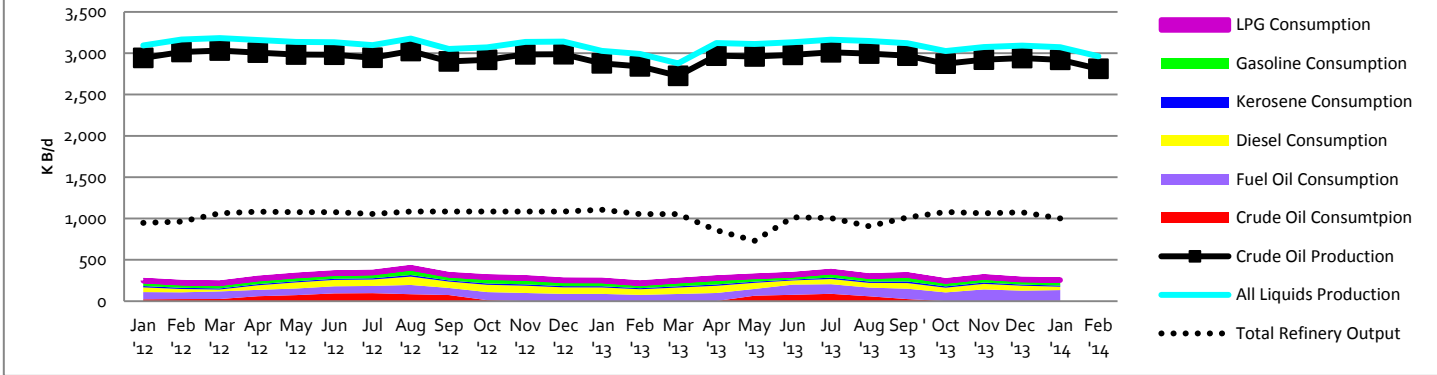


- Total's UAE oil production in the UAE increased to 260 kboed on average in 2013, compared to 246 kboed in 2012; however this will fall again with the expiry of the ADCO concession this year.
- The UAE's increase in oil production was mainly due to higher production by Abu Dhabi Company for Onshore Oil Operations (ADCO).
- The high level of implied direct crude consumption during 2013-14 may be a statistical artefact



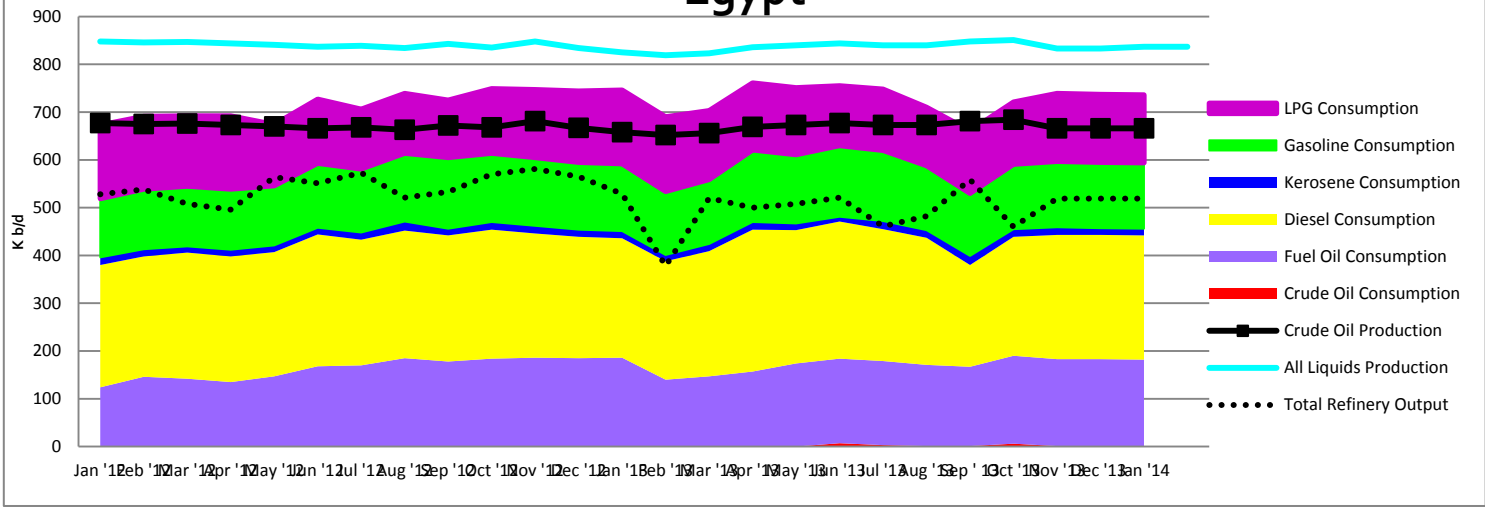
- Saudi Arabia is on track to raise refining capacity by 26% this year, as it puts the 400 kbpd Yasref refinery and the second 200 kbpd crude distillation unit (CDU) at the Satorp refinery into operation.

### Kuwait



- Oil exports in Kuwait fell 3% due to modest global demand and lower oil prices in 2013.
- Kuwaiti weighted oil price was down from \$123/bbl to \$100.37/bbl from 2012 to 2014 as Iraq emerged as a competitor.

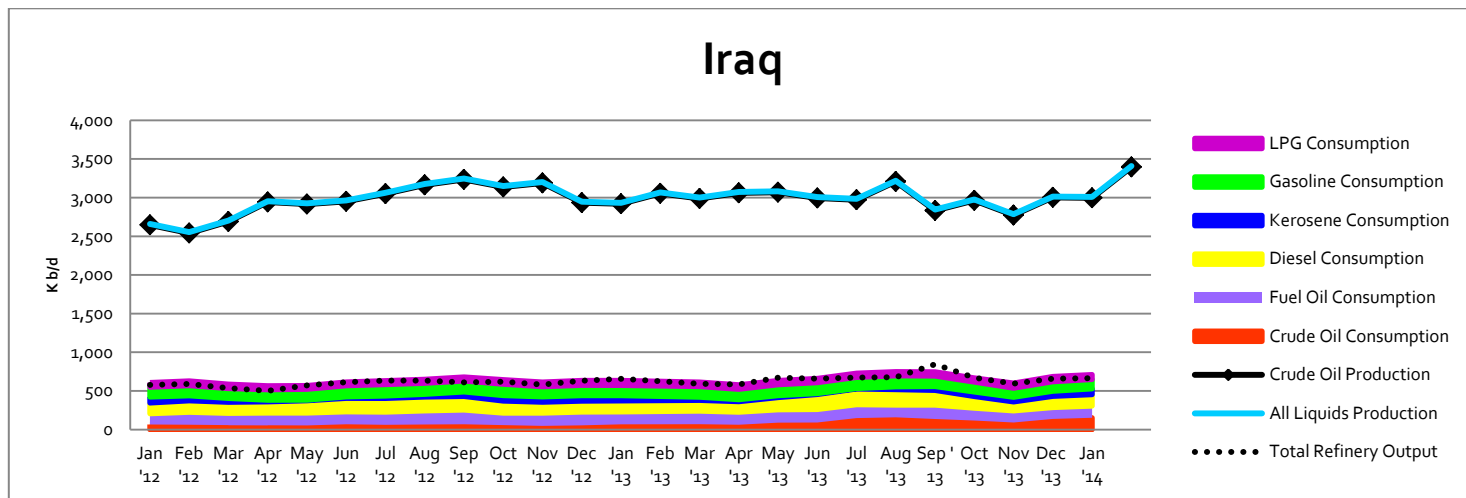
### Egypt



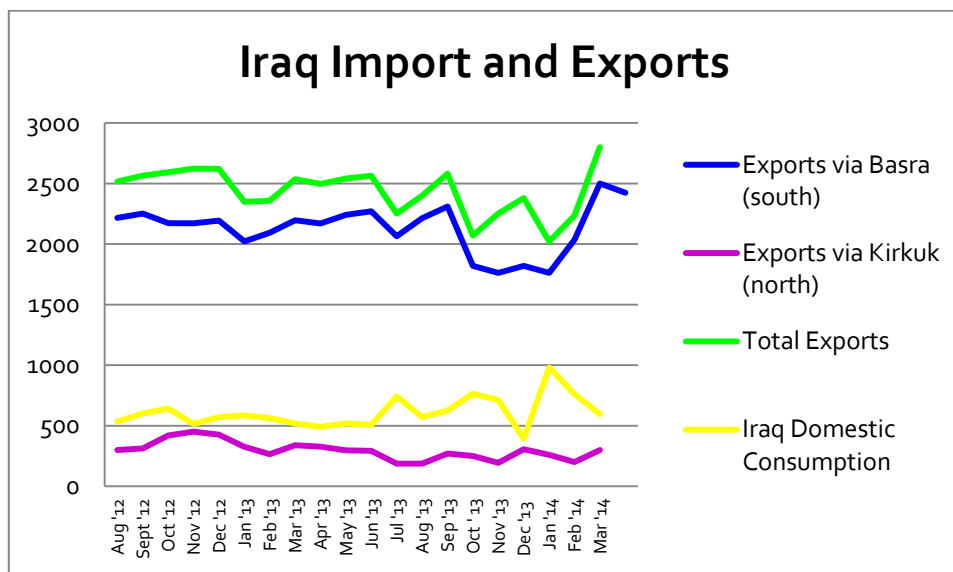
- Misdirected subsidies continue to hinder Egypt’s progress in the oil and gas sector.
- Egypt has launched three bid rounds in the last two years to build floating liquefied natural gas import facilities, but has so far failed to conclude a deal.
- However, though gas production has fallen, crude oil production remains quite steady



## Energy Statistical Report for Iraq



- Iraq is set to increase production capacity to 4m bpd by the end of 2014. A spike in production and refinery output has been observed already.
- Shell’s Majnoon field (with SOC and Petronas), produced 210 kbpd, in excess of initial target 175 kbpd, achieving early cost recovery and first exports



Oil exports declined in March to average 2.424 million b/d, as February exports had averaged 2.507 million b/d. No reason was given for the decline, but it is expected to increase in April 2014 with the startup of West Qurna-2 (Lukoil).

Oil exports still remain near historic highs.

### Iraq News in Brief

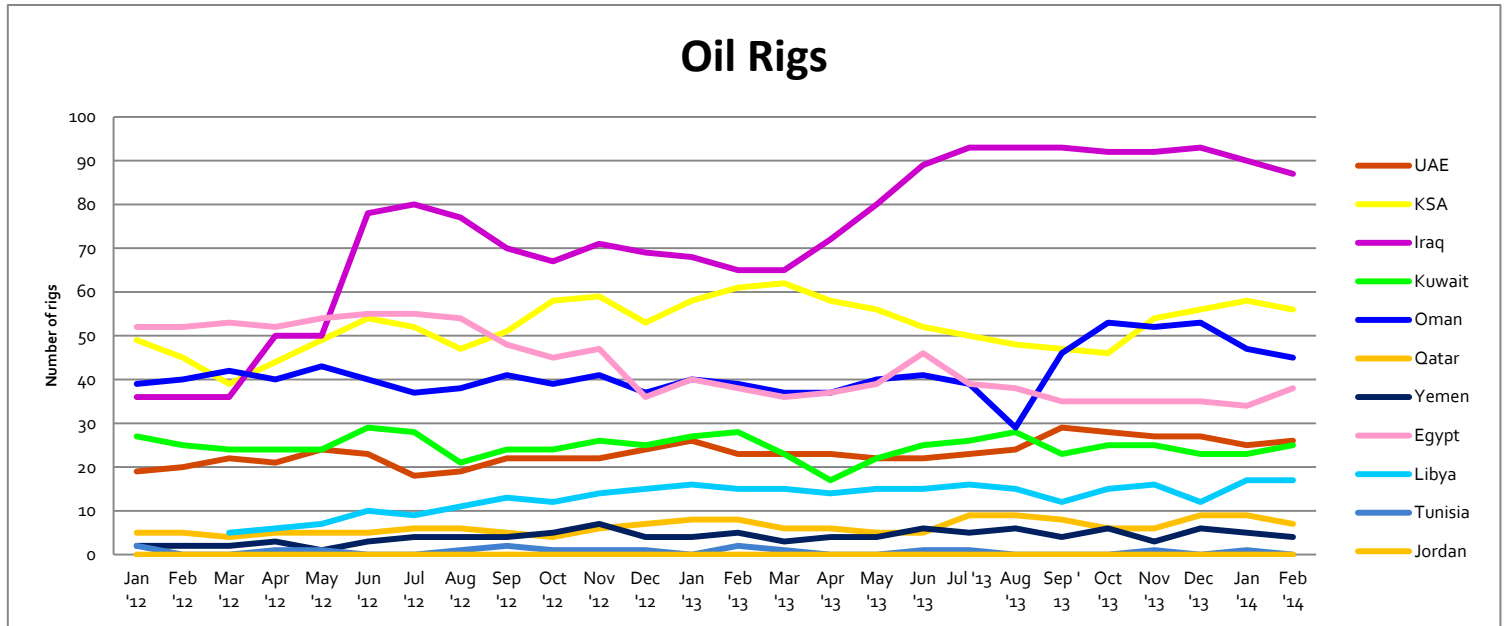
#### Iraq positioned as China’s second biggest crude exporter

Iraq squeezed out African and Latin American producers from China by increasing its exports to 882 kbpd, an increase of 62%.

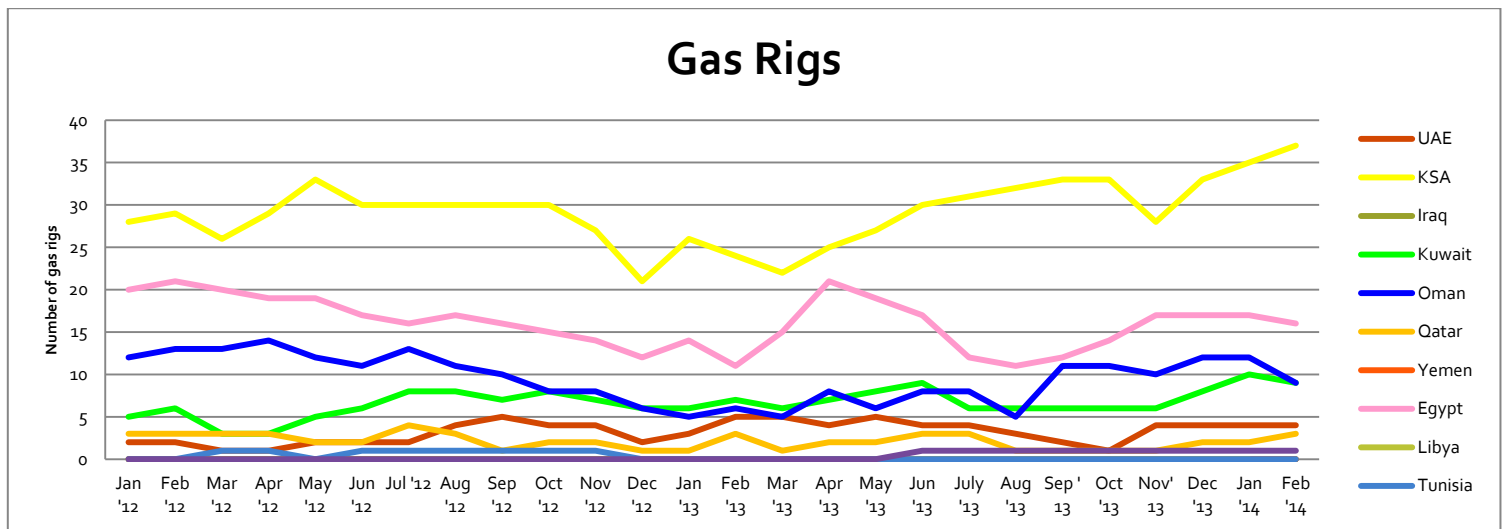
#### Oil Search LTD on hunt in Kurdistan

Papua New Guinea’s Oil Search is to drill four new wells in Iraqi Kurdistan, by the end of 2015, to assess the resource base in its Taza block.

## Oil and Gas Rig Count



- The Abu Dhabi National Oil Company (ADNOC) has awarded the US’s National Oilwell Varco a contract worth about \$32m to provide an onshore drilling rig
- The International Energy Agency has announced that Iraq’s oil exports have hit 3.6 million bpd, a record 30 year high, as rig count stayed at an average of 90 active rigs in 2014.



- Egypt plans to increase rig count by ending gas subsidies for the relatively wealthy industrial sector, and raising funds for energy investment.
- Egypt’s Petrojet completed two gas compression facilities in Hammar Mishrif and Rafidhiya, Iraq on March 1<sup>st</sup>.
- State oil and gas group Saudi Aramco is expected to award a major EPC contract on the Fadhili gas plant in the Eastern Province.
- BP made the first major contract award of 2014 with a \$1.4bn deal for Khazzan’s central gas processing facility.

## Recent and forthcoming MENA Licensing Rounds

Country	Round	Launch Date	Blocks on Offer	km <sup>2</sup> offered	Blocks Awarded	Closing Date
Egypt	Ganope	Dec – 12	20	125,577	1**	
Jordan	South Jordan Block	April - 12	1	10,416	-	June - 13
Egypt	EGAS	Dec – 13	22	NA	-	May - 14
Iraq	Nassiriyah	Dec - 13	1			
Iraq	5 <sup>th</sup> Licensing Round	NA	10	NA		NA
Lebanon	1 <sup>st</sup> 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 <sup>th</sup> Licensing Round	Sep – 12	5	20,132	-	NA
Yemen	March 2013 Licensing Round	March – 13	20	222,812	-	May - 13

\* Delayed due to government formation; expected July 2014 \* Participating in the Ganope International 2012 Bid Round #1, Dragon Oil awarded 100% interest in shallow-water block 19 in the Gulf of Suez.

## In Image



“You would think **you were still in the middle of a war zone**. The equipment is archaic.”

-said a former BP worker at Rumaila to *Financial Times, Oil and Gas*

Photo: File

## Current Studies

### Hydraulic Fracturing

Manaar has recently updated its study of the market for hydraulic fracturing in the MENA region, with PacWest Consulting. The 2014 MENA hydraulic fracturing report addresses historical and forecasted frac demand, supply, utilization, constraints and trends for all MENA countries. Market coverage also includes current hydraulic fracturing projects, unconventional potential assessments, past and forecasted unconventional wells in Oman and Saudi Arabia, historical proppant volumes in all MENA countries as well as the dominant proppant type 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.

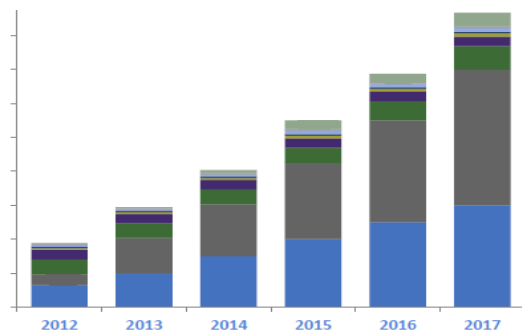


Figure 1. Oman frac capacity, by pumper (also available for Saudi Arabia, Algeria, Egypt, Libya, Tunisia, Bahrain, Kuwait, Iraq and Jordan)

### 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 Gulf-based and international petrochemical producers and gas suppliers.

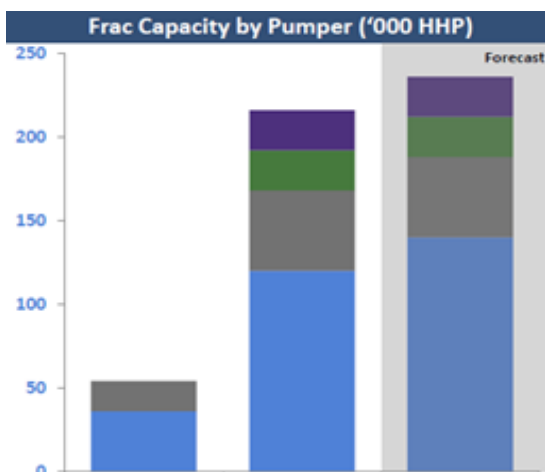
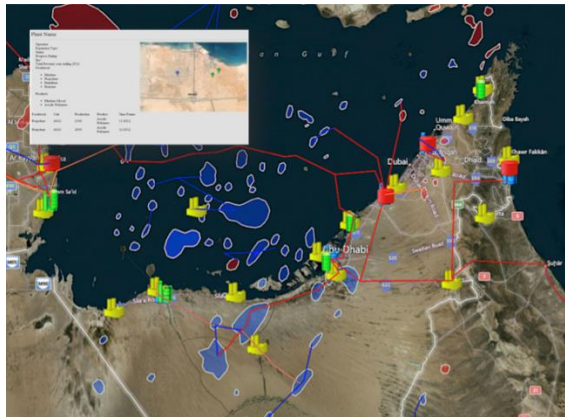


Figure 2. Forecast frac capacity, per MENA country

## MENA Shale Study

Manaar has prepared a study on the impact of global shale resources on MENA. The study focusses 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 on the Brookings Energy Forum in Doha from the 1<sup>st</sup> to 4<sup>th</sup> April, 2014, on MENA energy political economy, subsidies and alternative energy

### Upcoming Events:

- Jaafar Altaie will be speaking in the Annual Middle East Petroleum and Gas Conference, Dubai from 13<sup>th</sup> April to 15<sup>th</sup> April, 2014
- Robin Mills will be speaking in the Bahrain Energy Forum from 22<sup>nd</sup> April to 23<sup>rd</sup> April. The event is hosted by MEED.
- Robin will speak at Crédit Agricole's 'Saudi Corporate Seminar' in Paris, 30<sup>th</sup> April

## Manaar Presentations

- [EPC Market Study 2014](#)
- [Gas Development in Middle East: Impact on Product Demand](#)
- [Feedstock Challenges and Market Implications for Middle East Petrochemical Products](#)

For more presentations and research, please visit [www.manaarco.com](http://www.manaarco.com)

## Key Manaar people



### JAAFAR ALTAIE MANAGING DIRECTOR

- Jaafar founded Manaar in 2009. He is an energy economist and petroleum business advisor to IOCs and NOCs on regional upstream business and economics issues.



### ROBIN MILLS HEAD OF CONSULTING

- Head of Consulting at Manaar Energy, Robin is an expert on energy strategy and economics, described by Foreign Policy magazine as "one of the energy world's great minds".



### MOHAMMED JAMBAZ HEAD OF KURDISTAN OFFICE, ERBIL, 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.



### DR. SADIK AL JADIR LEAD CONSULTANT

- Dr. Sadik is a Lead Consultant at Manaar with a focus on business operations consulting in Iraq and the UAE.

## ROA IBRAHIM CONSULTANT

• Roa is a specialist in assessing markets for energy industry technology in the Middle East, with a background in finance.



## GARY LAKES SENIOR ASSOCIATE

• Gary Lakes is a Nicosia-based editor and journalist whose current primary focus is East Mediterranean energy.

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## Sources

Joint Organisation Data Initiative (JODI)

Energy Information Administration (EIA)

Baker Hughes

International Energy Agency (IEA)

OPEC

Wood Mackenzie

Manaar Research

A version of Robin Mills's article appeared in The National on 16<sup>th</sup> March 2014

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