In Amenas gas plant, Algeria. Photo courtesy of BP. See comment on p2

Monthly Newsletter

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In Amenas attack demands comprehensive regional security response; Libya may be the weak link

by Robin Mills

In 2011, the revolution in Libya rocked world energy markets. Last year, the threat was sanctions on Iran. This year, is it insecurity in the great ungoverned Saharan spaces between Mali, Algeria and Libya?

Last week, a group of militants attacked the In Amenas gas facility in eastern Algeria, run by BP, Statoil and the state oil firm Sonatrach, in apparent retaliation for France's intervention in Mali. Without consultation, the Algerian military struck to end the siege, with reports of at least 50 hostages killed.

Oil companies have long experience of operating under troubled conditions in Algeria. Most of the country's fields are in the interior, south of the Atlas Mountains, heavily militarised and sparsely-peopled. Even during the vicious 1991-2002 civil war, in which some 100,000 people were killed, there were almost no attacks on oil installations.

The In Amenas attack thus comes as a shock. Firstly, it is the first successful assault on a defended petroleum facility in Algeria - the militants may have planned to destroy it. Secondly, it is 1,000 kilometres from the Mali border, from where the obvious threat seemed to emanate. Thirdly, it casts doubt on the competence, even complicity, of Algeria's security forces. And fourthly, it makes us wonder where else in the Sahara may be vulnerable.

Oil and gas provide 95 per cent of Algeria's export earnings, and so underpin its social model - based, to an even greater extent than in most petro-states, on subsidies and state employment. The Algerians' ruthless response is not surprising.

Algeria is the third-largest gas supplier to Europe, helping to diversify away from Russia, and In Amenas alone produced almost a fifth of exports. A lone attack may not make too much difference to the country's investment image, anyway already tarnished by harsh tax terms.

Sonatrach can continue operations even if many foreign staff are withdrawn, deterred by the military's apparent disregard for hostages' lives. After this shock, Algeria's pervasive security state will no doubt reinforce the protection of its lifeline. The major energy security focus therefore shifts to weaker neighbours.

The French intervention in Mali was not driven by oil - it has none (at least, none has yet been found). However, all the other Saharan countries possess oil and gas in some quantity. Next-door Niger, though so far only a miniscule oil producer, is the world's fourth largest uranium miner, a major part of supply to France's power stations. ExxonMobil operates heavily-fortified fields in Chad. Oil exports from Sudan and South Sudan have been seriously disrupted since the countries' 2011 separation.

The heavyweights, of course, are Algeria and Libya. Between them, they supply about 3.7 million barrels per day, 4 per cent of the world's total. Libya's facilities escaped the 2011 overthrow of Muammar Qaddafi surprisingly unscathed. But the In Amenas attackers apparently crossed over porous borders from nearby western Libya - an area which yields about a quarter of the country's production. The Libyans rushed to strengthen their Petroleum Facility Guard after the attack, but this unit seems still unready.

Experience from terrorist and insurgent attacks on energy infrastructure in Yemen, Iraq, Pakistan, Saudi Arabia, Egypt's Sinai, Nigeria, Colombia and elsewhere suggests that well-defended facilities are a hard target. In this respect, last week's attack is an aberration. Trickier to protect are pipelines snaking across hundreds of kilometres of deserts and mountains.

Most vulnerable of all are oilfield workers - who can be intimidated, kidnapped or killed, as in last week's tragedy. In the vast open deserts, they are suddenly on the front line. In Amenas is not the herald of a new energy crisis - but it should catalyse oil companies, regional states and international partners to build a comprehensive Saharan security strategy, that does not rely on guns alone.

A version of this article appeared in The National newspaper on 22nd January 2013.

Key MENA Energy Issues Scorecard

Gulf gas price reform	🟠	↑	Oman to double prices to industry; no sign of new moves in Saudi Arabia or elsewhere
MENA unconventional gas	🟠	↑	Saudi Arabia pressing ahead with shale gas; SABIC plans US investments; investment climate still unfavourable
MENA renewable energy	🟢	↑	Saudi and Abu Dhabi solar plans moving ahead; positive momentum from World Future Energy Summit
MENA nuclear power	🟡	↑	UAE programme on track; France hoping to sell nuclear reactors to Saudi Arabia; Jordan and Egypt plans seem premature
Energy infrastructure security	🟠	↓	Attacks on fields/pipelines in Algeria, Yemen; fields captured in Syria by opposition
OPEC production	🟡	↓	Down in December due to major Saudi cut; expected reduced call on OPEC in 2013
East Mediterranean gas commercialisation	🟡	↑	Lebanon bid round moved forward; ENI/Kogas win blocks off Cyprus; waiting on new Israeli gas export policy after elections
Kuwait energy projects progress	🟠	↑	New pro-government Parliament allowing more progress, but protests continue; refinery upgrade contract; heavy crude pipeline brought forward
Abu Dhabi concessions renewal	🟡	⇔	BP, Total and China stressing their interest; no new indications from Abu Dhabi
Baghdad-Erbil oil agreement	🔴	⇔	KRG defends its oil policy; official oil exports halted; Turkish deal continues – Baghdad threatens action; Chevron awarded new block
Iraq oil production build-up	🟡	↓	Storms in December cut exports; no new partner in West Qurna-1 yet despite ExxonMobil-Maliki talks; West Qurna-2 target cut
Egypt subsidy reform	🔴	⇔	Subsidy spending to rise 2-3% in Q1; financial position deteriorating; waiting on IMF loan negotiations
Iran oil sanctions	🔴	⇔	Iran oil production down slightly in December; government admits problem for the first time; no tangible progress on nuclear talks. Risks of military action remain low after Israeli election

Source: Manaar research

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

Corporate News

Manaar is working on a study of hydraulic fracturing capacity in the MENA region, as part of the global tracking by our partner PacWest Consulting Partners.

Please see http://pacwestcp.com/research/pumpingiq/ for more details of the product, and contact Roa Ibrahim r.ibrahim@manaarco.com, +971 4-3266-300 for further information and purchases.

Recent & Forthcoming Events

Robin Mills presented at the Oilfield Minerals conference in Dubai on 23rd January 2013. Key messages were:

- Gulf oil is entering a phase of capacity expansion (Iraq, UAE) and rejuvenation
- However, major capacity gains in Saudi Arabia are not expected before 2015
- New resource types (EOR, heavy oil) and improved reservoir management are steadily moving up the agenda
- Gas drilling, including unconventional, sour and high pressure/temperature, will become a more important driver of activity given the region's gas challenges

Robin Mills spoke on Energy Sustainability to 2050 at the Shell Knowledge Series at the World Future Energy Summit in Abu Dhabi on 16th January. Key messages were:

- The dynamic concept of *resilience* to the unexpected is a better guiding principle than *sustainability*
- Hydrocarbons and renewable energy are complementary; mutual hostility is not helpful
- MENA has given plenty of attention to energy supply – but not enough to demand, especially efficiency

Robin Mills will speak at the 2nd Annual EOR & Heavy Oil Conference on 27th March in Dubai and the Brookings Doha Energy Forum on 1st-2nd April, whose theme is *Power Struggle: Implications of the Changing Global Gas Market for the Middle East and Asia*.

Jaafar Altaie and Robin Mills will attend the Doha Forum in Qatar, 20-22nd May.

Middle East needs to seize its gas opportunity

by Robin Mills

In Greek myth, Opportunity was a woman who had long hair in front but was bald at the back. She had to be seized before she passed by. The Middle East's countries, with 40 per cent of the world's gas reserves but just 16 per cent of production, are likewise in danger of letting opportunity slip through their fingers. Signs of problems with gas policy are everywhere. Some are egregious - Iran, with the world's second-largest gas reserves, is a net importer.

In the late 1990s, as the scale of its gas resources became clear, Iran engaged in a long, fruitless national debate. Should gas be exported to earn revenues, used for domestic industry or injected to sustain oil production? In the end it achieved none of these things. Iran had exaggerated ideas of its indispensability, sought premium pricing for its unreliable gas supplies and demanded tough terms from international investors.

As a result, while Qatar, with which Iran shares the world's largest gas field, developed the world's leading liquefied natural gas (LNG) and synthetic oil industry, Iran has not completed a single LNG plant.

Egypt's gas policy in the 1990s was highly successful - liberalizing foreign investment, doubling reserves in eight years and becoming a significant exporter. But even before the revolution, signs of trouble were visible. Low state-regulated prices did not encourage new exploration, while consumption was rising unsustainably. Its LNG plants are now running below capacity, while exports to Jordan and Israel have been cut off. Ceasing to supply Israel was welcomed by many Egyptians, but it was a commercial defeat: now Israel will become self-sufficient with its own newly discovered gas, and may build its regional clout by supplying Palestine and Jordan.

Meanwhile, Egypt is turning to LNG imports from Qatar. Iraq is in danger of making the same mistakes as Iran. While it burns off unwanted gas in huge quantities, its people get electricity for only eight to 12 hours a day. Yet Baghdad policymakers show little sign of urgency. The dispute with the autonomous Kurdish region has held up exports to Turkey and Europe, while Israel may seize the Jordanian market.

The GCC also has problems. Apart from Qatar, all the Arabian Gulf states are short of gas. Abu Dhabi is planning LNG imports via Fujairah, while Dubai and Kuwait already use expensive liquefied fuel. Development of new domestic gas fields in Abu Dhabi and Kuwait, costly because of high levels of toxic hydrogen sulphide, has lagged. More than half of Saudi Arabia's electricity comes from burning dirty oil, hampering its ability to export.

The region has relied on underpriced gas to drive industrialization and job creation. But this strategy is reaching its limits. Petrochemical companies are returning to the United States, attracted by its abundant cheap gas, while Gulf industries struggle to secure allocations from their national oil companies. Countries in the broader region whose gas potential would have been dismissed with contempt a few years ago are now seizing their opportunity: Cyprus, Israel, the Kurdistan region, Tanzania and Mozambique. They realized the need for attractive tax terms to woo investors, and they offer export potential and hence access to attractive world prices in Europe and Asia. The Gulf may even end up importing LNG from East Africa or, in a stunning reversal of fortune, the US.

The Middle East's vast gas resources give the false impression that there is no hurry. But markets around the world are being snapped up by hungry, agile competitors. Opportunity has almost passed by, but there is still a last chance for a bold reformer to start the required reforms: market-based pricing, openness to private investment, and a sense of urgency.

Middle East energy in 2013: steady progress, or sudden lightning bolt?

by Robin Mills

"It lit up reality like a lightning flash," in the words of Lenin. Though speaking of an uprising at the end of the Russian Civil War, he could have been describing the dramatic impact of 2008's economic crash or the 2011 Arab revolutions on the energy world. By contrast, 2012 saw more of the unsteady unfolding of events already set in motion: Libya's shaky recovery from its successful uprising against Muammar Qaddafi, continuing growth in US oil and gas production, sharp tightening of sanctions on Iran, and rapid progress of solar power technology amid cut-throat competition.

We can venture a guess at six things to watch for in Middle East energy in 2013: three that will happen, and three that are to be hoped for. Total petroleum production in the United States will jump ahead of Russia and come close to dethroning Saudi Arabia as the world leader. The juggernaut of shale oil and gas will roll on relentlessly, despite all the efforts of environmentalists, including Matt Damon in his anti-fracking film *Promised Land*.

This surge, combined with growing production from Iraq, will put pressure on Saudi Arabia. The kingdom has already had to reduce December production from record high levels to sustain prices above $100 per barrel, and may have to cut back further - unless there is another major geopolitical upset.

"The international conditions and the increase in production by some states (in 2013) will have negative effects on prices, that's why we're being conservative," said the finance minister Ibrahim Al Assaf on Sunday. But despite Riyadh's still very comfortable fiscal position, December's production cuts are the first sign of an era of greater financial stringency.

Along with the global oil boom, the golden age of gas will continue to gain pace. We can expect further discoveries in East Africa and the eastern Mediterranean. Shale-gas production will emerge in Australia; we will learn if the suddenly pro-shale United Kingdom has commercial reserves. But relief for high prices in Europe and East Asia will not arrive until later in the decade.

In the category of things to be hoped for, the first is a serious effort to reform Middle East energy subsidies. Only Dubai has made real progress. A long-awaited revision of Saudi Arabia's absurdly low prices needs political will. Handouts are draining economies and fuelling protests in Egypt and Jordan.

But neither incumbents nor opposition, such as Egypt's populist former presidential candidate Hamdeen Sabahi, have articulated a coherent policy to protect the poor while undoing ruinous subsidies.

Along with reforming energy prices, there is real optimism that this could be the breakthrough year for alternative energy in the region. In solar power, dramatic cost reductions should continue, Abu Dhabi's Shams I and Dubai's Mohammed bin Rashid solar plants will start operations, and both Saudi Arabia and Qatar will tender major projects.

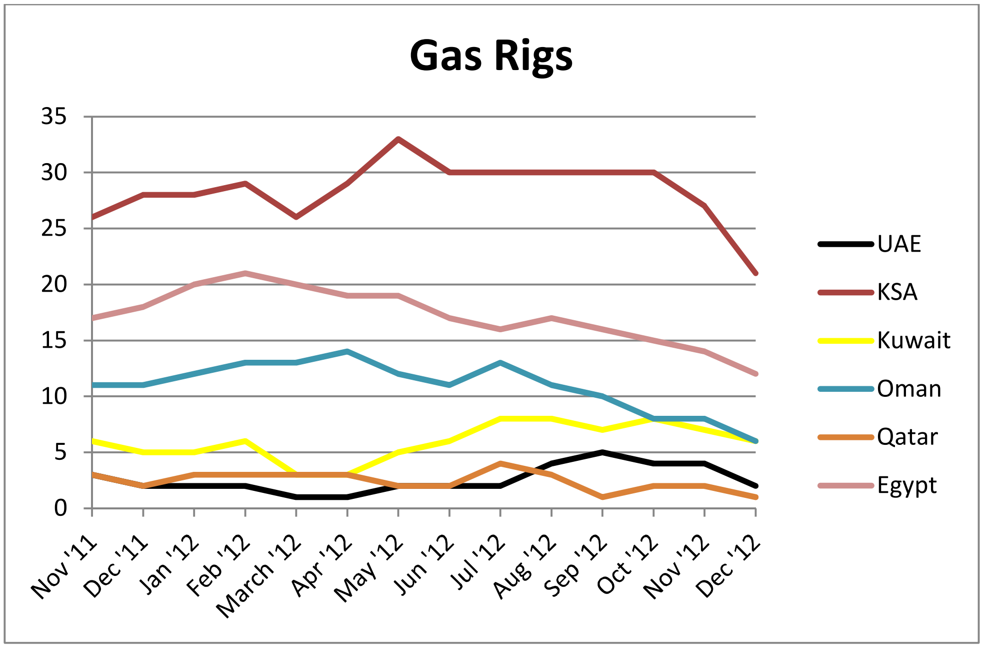
Geopolitical tensions may recede in some places. The chance of a US deal with Iran is not good, but outright conflict - threatening chaos in the Arabian Gulf's oil industry - also seems unlikely, in the absence of miscalculation on either side. Libya and, more doubtfully, Yemen are making unsteady progress; Sudan and South Sudan need to reach compromise over oil transit to avoid economic collapse.

There is some hope, too, for the end of the fighting in Syria, and establishment of a representative government. Even the most optimistic case means a ruined and unstable country, with years to pass before Syrians rebuild their own oil industry and can use their geographic advantage for new pipeline routes for Iraq and others.

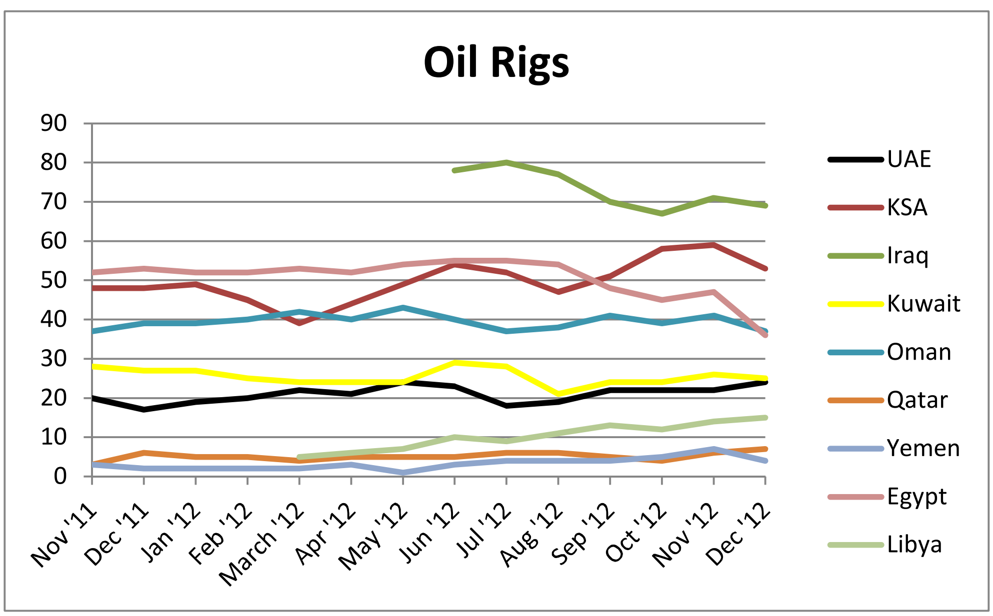
But the relatively steady evolution of these events is always liable to be interrupted by another lightning flash - a political, technological or economic revolution.

Versions of these two articles appeared in The National newspaper on 11th December 2012 and 1st January 2013.

Regional Energy Statistics

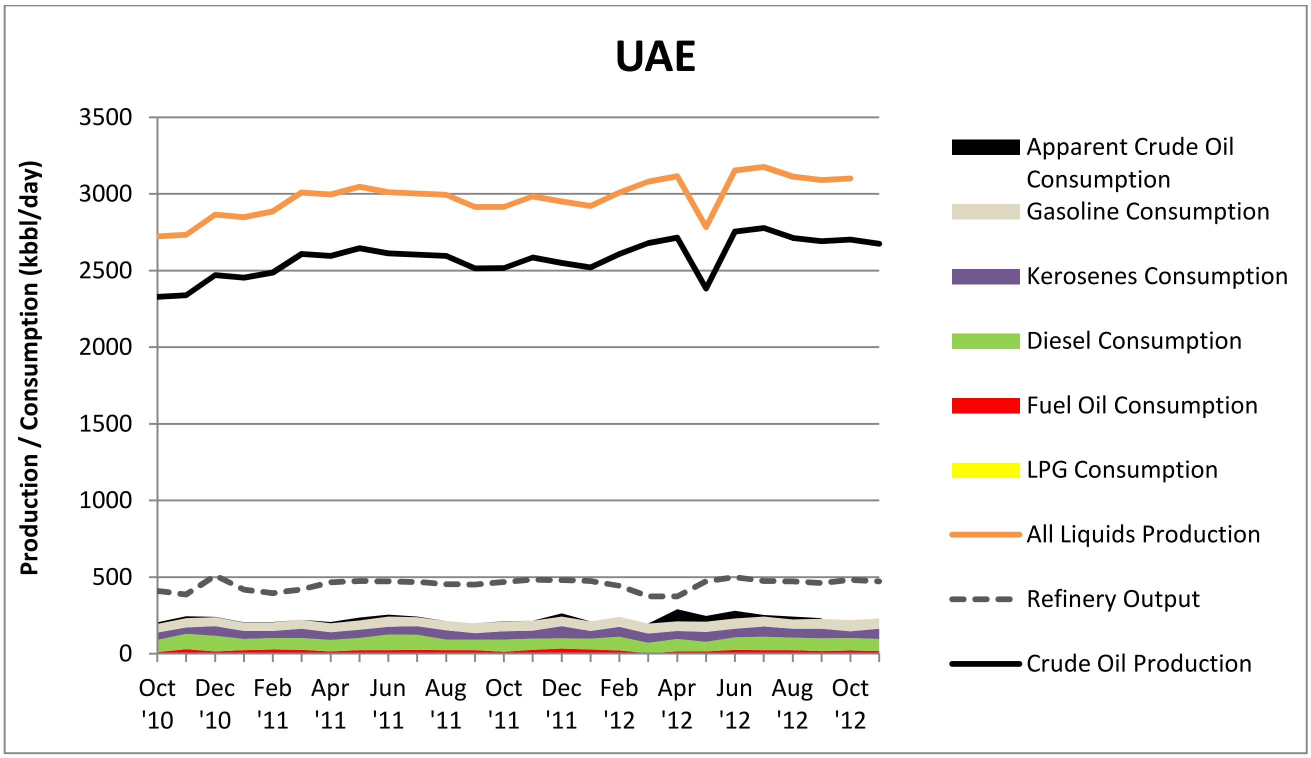


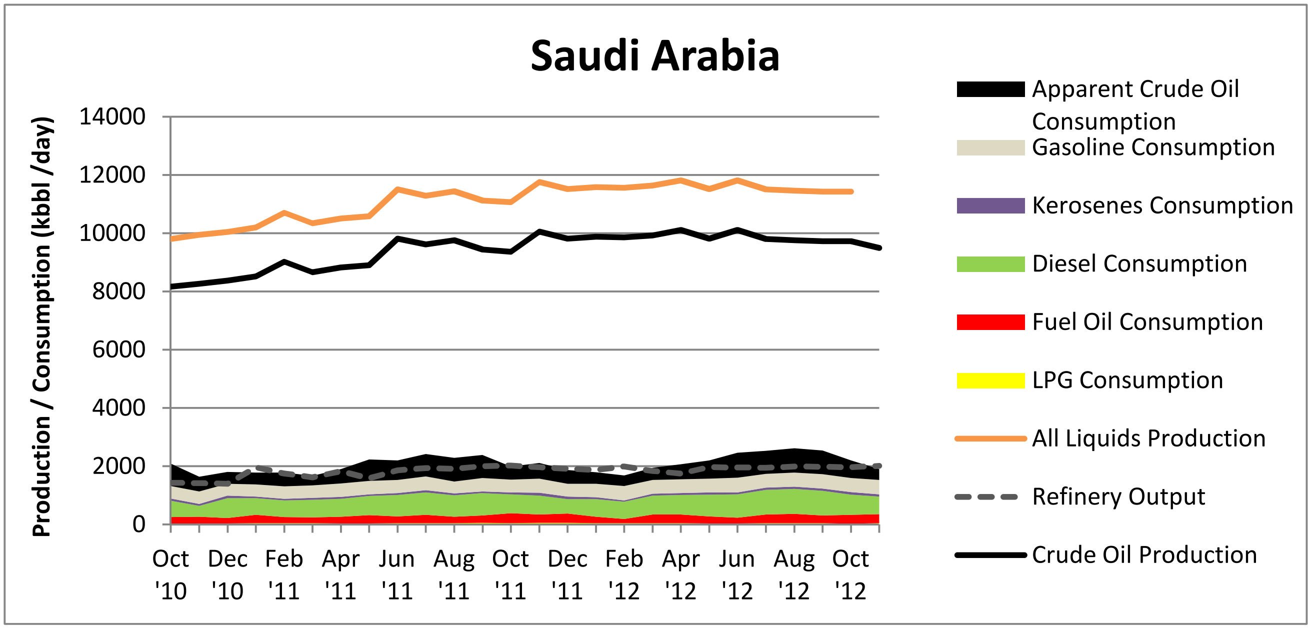
- Saudi Arabia, though still the region's largest gas driller, dropped 6 rigs in December (having cut 3 in November) with the low-demand winter season, and approaching completion of offshore gas developments
- Egypt's gas rig count continued to decline due to continuing political uncertainty and delays in receiving cost recovery payments
- Others countries also cut back drilling during the cooler winter season



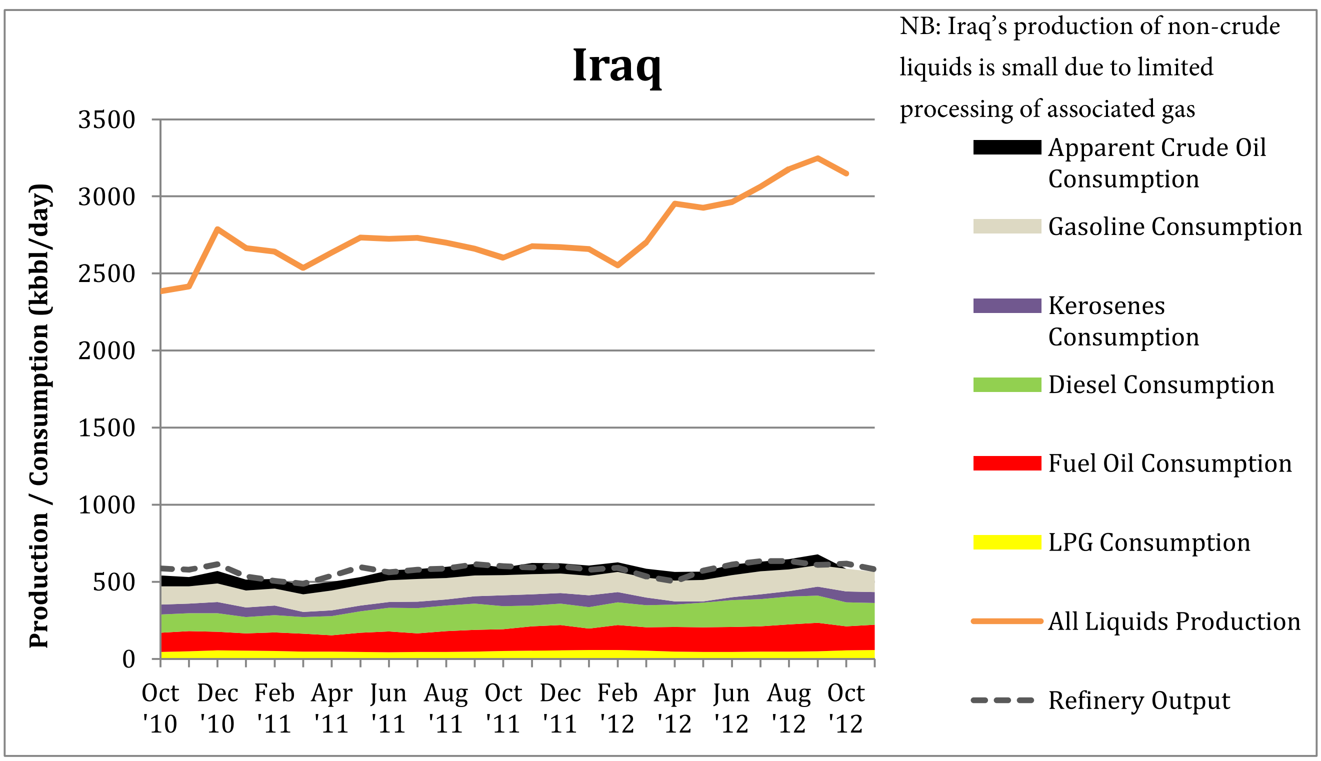
Source: Baker Hughes

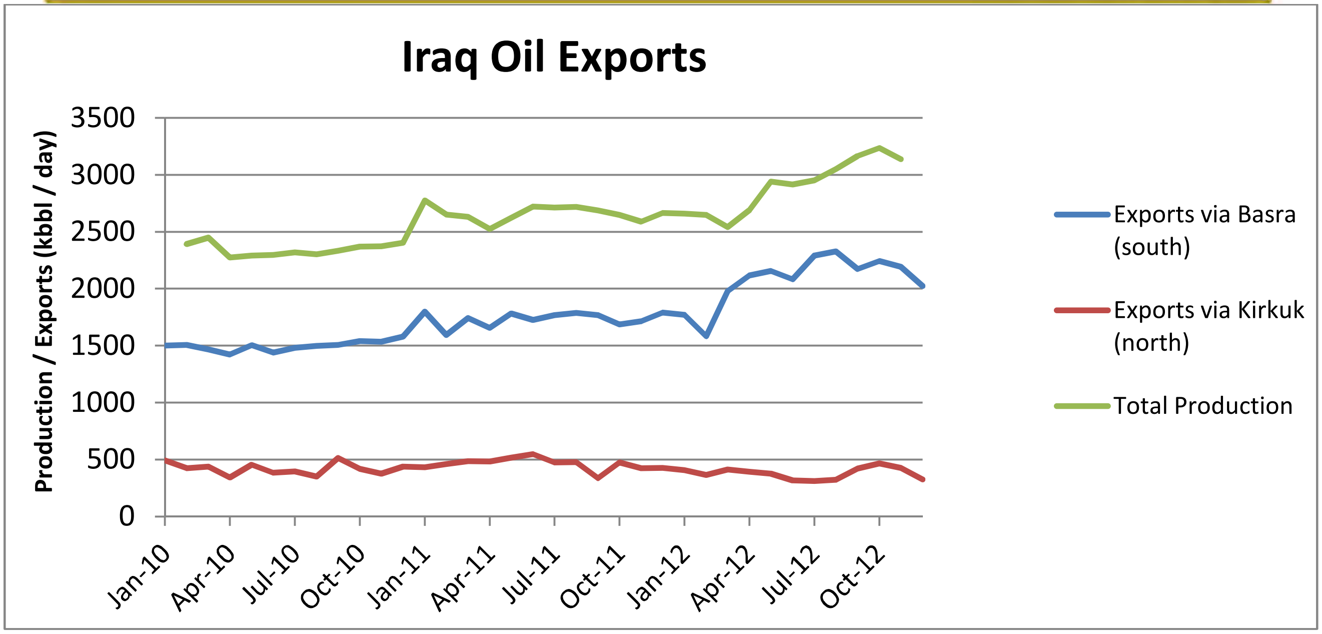
- Saudi Arabia remains close to a record rig-count but cut 6 rigs in December as it reduced production due to the lower-demand winter season, and to proactive measures to protect oil prices
- Egypt drilling dropped sharply in December due to continuing payment and political issues
- Iraq rig count is volatile and still settling down given that data collection was only resumed in June 2012
- Libya rig count continued to rise steadily and is now back to pre-revolution levels





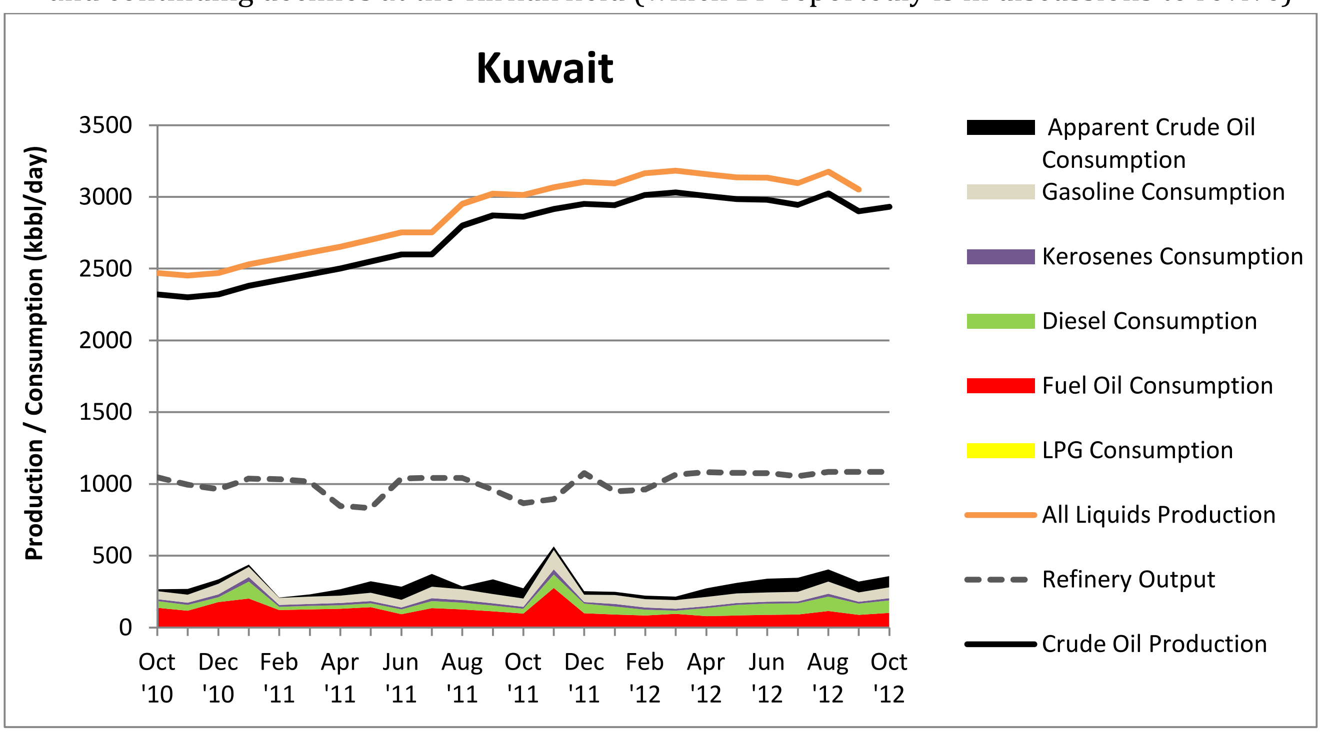
- Detailed figures for December are not yet out, but Saudi production fell in November
- Saudi crude production was 9.492 Mbpd in November and 9.025 Mbpd in December – the November cut was entirely accounted for by falling domestic consumption, but the drop in December reflects reduced exports to defend prices

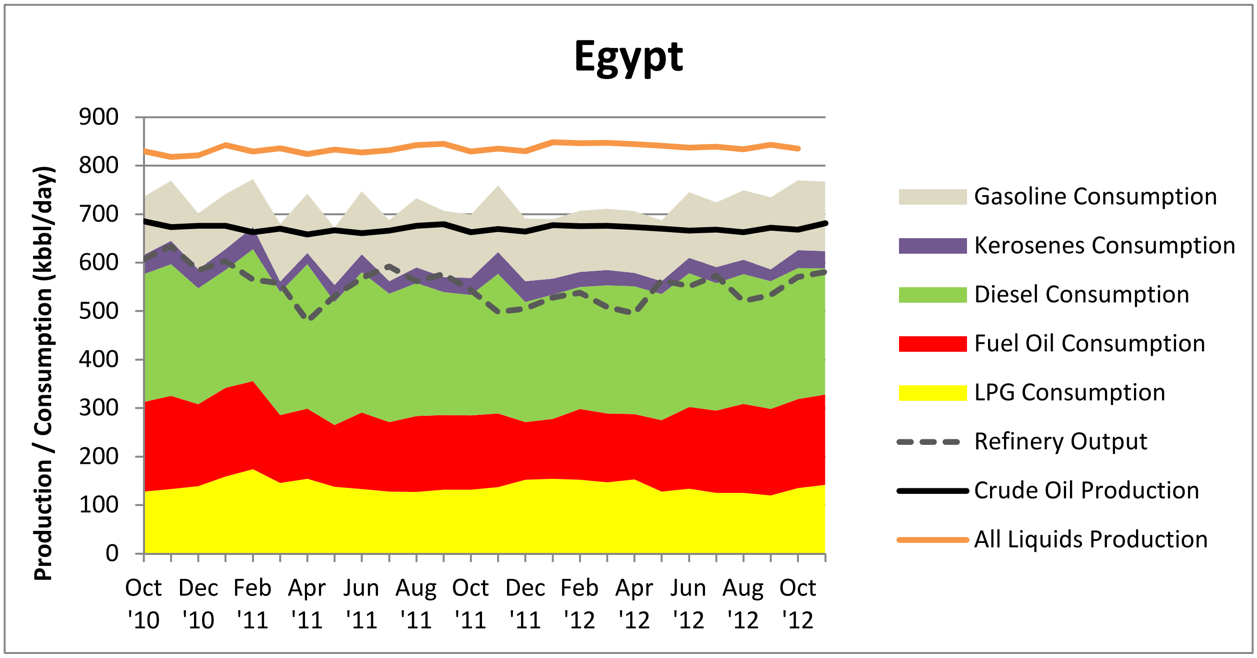




Source: Iraq Oil Ministry

- Iraqi production was down in October due to problems at the Rumaila, Zubair and West Qurna-1 fields, but mostly recovered in November
- Iraqi production fell in December due to bad weather at the Gulf loading terminals. Planned new oil storage capacity should ameliorate this problem.
- Northern exports fell in November with the collapse of the Baghdad-KRG agreement on exports, and continuing declines at the Kirkuk field (which BP reportedly is in discussions to revive)





Source: JODI, 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	-	Feb – 13
Egypt	EGPC	Sep – 11	15	18,000	11	Mar – 12
Egypt	Ganope	Dec – 12	20	125,577	-	May - 13
Iraq	4th Licensing Round	Apr – 11	12	80,700	3	May – 12
Iraq	5th Licensing Round	NA	>60	NA	-	NA
Lebanon	1st Licensing Round	Feb - 13	nk	22,730	-	May -13
Syria	Offshore	May – 11	3	9,038	0	Oct – 11
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

Source: Deloitte

Clouds on the horizon for Saudi oil policy

by Robin Mills

On a perfect winter's day at Saudi Arabia's giant Shaybah oilfield deep in the Empty Quarter, the red dunes loom over the wells,
the weather is cool and the sky is clear and blue. Propelled by high oil prices and near-record output, the kingdom has enjoyed a prosperous decade, even manoeuvring successfully through the global economic crisis and the region's revolutionary upheaval. But storm clouds are gathering on the horizon – and policymakers should take heed while these problems are still manageable. Some of these clouds are being blown in from abroad. Others hang over Saudi Arabia itself.

The kingdom enjoyed exceptionally calm and untroubled weather during the first decade of this century. Strong oil demand in China, a poor performance from non-OPEC producers, and the elimination of serious OPEC competitors – Iraq, Iran, Libya and Venezuela – by war, sanctions and mismanagement meant that it could increase production modestly, while still enjoying record oil prices. Even during the global financial crisis in 2008-9, when prices tumbled abruptly from a record of $147 per barrel to $35, Saudi Arabia was able to muster its OPEC colleagues to cut production and protect its revenues.

OPEC's report in November 2012 was the first time it has seriously acknowledged the ominous shadow of the US shale oil boom – oil released from 'tight' reservoir rocks by horizontal drilling and hydraulic fracturing. North Dakota alone has already overtaken OPEC members Ecuador and Qatar. By some (dubious) measures the US has surpassed Saudi Arabia in total petroleum liquids production – and it should do so convincingly in the next few years. Citibank suggested in March that the US could be self-sufficient in oil by 2020 – driven partly by shale oil, more by efficiency gains and car mileage standards.

The exact level of US oil production, and whether it becomes self-sufficient or remains a modest net importer, is less significant than the big picture - that it promises the first period of sustained non-OPEC output growth since 2004. The 'tight oil' boom is now spreading to Canada, and perhaps in the next few years to Australia, Argentina and Russia. Kazakhstan and Brazil are set to add significant conventional oil production. Noting these projections and tepid global demand due to the Euro zone crisis and faltering recoveries elsewhere, OPEC forecasts only slight growth in demand for its oil over the next five years.

The tussle over the new OPEC secretary-general in December, though irrelevant to production quotas, was symbolic of 'the enemy within', as Riyadh may see it. Iran and Iraq put up candidates, as did Saudi Arabia, leading to deadlock. Iraq's ambitious production growth plans would take it from about 3.2 million barrels per day (b/d) today to nine to ten million b/d by 2017. It is likely to fall short of this, but even six million b/d would imply other OPEC members would have to cut back to accommodate it, or risk prices falling. Yet in addition to Iraq, OPEC members the UAE, Kuwait and Libya all have plans for significant growth, while with president Hugo Chávez suffering from cancer, Venezuela's oil industry, after a decade of decline, may also be set for a change of course.

Seeing Shi'a-led Iraq as an Iranian proxy, the Saudis have refused to engage seriously with Baghdad. For their part, the Iraqis have given little apparent thought to their OPEC strategy, what quota level they should seek (if any), and how other OPEC members, above all the Saudis, might respond.

Because of shale oil and increased output from Iraq and elsewhere, chief executive Khalid al Falih announced in October 2012 that Saudi Aramco did not plan any increase in its current official 12.5 million b/d capacity until at least 2015. "A few years ago, much of the global energy debate was based on the premise of acute resource scarcity and its economic and political ramifications. Rather than supply scarcity, oil supplies remain at comfortable levels," he noted. Currently, Saudi Aramco's only major new oil development is the offshore Manifa heavy oil field, whose 0.9 million b/d will mostly be used domestically.

Riyadh has benefited from troubles in OPEC peers twice in the last two years. In 2011, it increased production to cover for the losses during Libya's revolution against King Abdullah's long-term bête noire Muammar Gaddafi, who sought to assassinate him in 2004. In 2012, it was a leading player in the sanctions campaign against Tehran – replacing more than one million b/d of Iranian exports, and reassuring Asian buyers that it would cover their needs.

Saudi Arabia has deepened its relations with Asian customers. In 2006, King Abdullah was the first Saudi monarch to visit China; Chinese premier Wen Jiabao returned the favour in January 2012 as the Iran sanctions issue was rising to prominence. Saudi Aramco plans to build a refinery in Yanbu as a joint venture with Chinese state company Sinopec, and further refineries in China's Yunnan province and Indonesia. But it also consolidated its position in the US market by expanding its massive Port Arthur refinery in Texas, a partnership with Shell.

As with their Gulf neighbours, the Saudis are aware that Asia will be increasingly the dominant market for their oil. And, although it is still a remote eventuality, US overstretch and increasing self-sufficiency may cause it to scale down its military presence in the Gulf.

In the nearer term there may, of course, be further geopolitical shocks during 2013 – two of the more obvious eventualities being conflict involving Iran, or an upsurge of unrest in Nigeria. But in the absence of such upheaval, the forecast is for softening prices.

Saudi Arabia can, of course, cut back production to defend prices around the $90-100 per barrel level it is thought to require to balance its budget. Spending was bloated in 2011 by a $130 billion spending package intended to address social issues such as unemployment and housing shortages, and head off discontent amid the uprisings in Tunisia, Egypt, Libya, Yemen, Syria and – closest to home - Bahrain. It is also dedicating growing aid to allies in Jordan, Bahrain, Oman and Yemen.

But sustaining a historically unprecedented price runs the risk of encouraging extra high-cost oil output elsewhere in the world. Now the shale oil genie is out of the barrel, it is unlikely to disappear again. Expensive oil also supports alternative energy, efforts on efficiency, mileage standards, hybrid and electric vehicles.

Scanning the desert horizon, our attention is caught now by the clouds hovering over Saudi Arabia itself. Ever-rising budget demands threaten to collide with stagnant exports and growing domestic oil consumption. Twenty eight million Saudi residents use almost as much oil as 1.2 billion people in India.

A Citibank report in September 2012 projected that, on current trends, Saudi Arabia would be a net importer of oil by 2032. This is a simplistic extrapolation, which is clearly not going to become reality – long before, either the Saudi economy would collapse, or, more likely, drastic action would be taken.

Saudi Aramco has massively stepped up its efforts to develop ‘non-associated’ gas (historically, most of its gas has been a cheap by-product of oil production). But projected gas output will at best keep pace with demand, and new ‘unconventional’ gas will be more costly. Massive new petrochemical complexes, a centrepiece of the country’s drive to diversify its economy and create jobs, are finding it increasingly difficult to secure allocations of gas feedstock.

The kingdom is planning ambitious solar and nuclear power programmes, under the auspices of the King Abdullah Centre for Atomic and Renewable Energy, and has launched a Centre for Energy Efficiency. To its current installed capacity of about 50 gigawatts (GW), it targets adding 41 GW of solar power and 17 GW of nuclear by 2032. With dramatic reductions in the cost of solar photovoltaic systems, they are now more than competitive with oil in the Middle East’s sunny climate.

But the kingdom has not yet taken the most effective step – reforming ridiculously low energy prices, which see oil sold to power stations at less than $4 per barrel, and gas priced at $0.75 per thousand cubic feet (currently around $3.40 in the US and $15 or more in Japan).

That demands major reform, not only of its economy, but also of its social model.

The decade to come thus appears much more problematic for Saudi Arabia than that which has passed. It has to manage the rise of Iraq within OPEC, and the organisation's broader challenge of unconventional oil in North America and elsewhere. It must play its geopolitical role, in which oil is its trump card, with the US as partner, Iran as adversary and China a wary onlooker.

The kingdom's energy and economic position remains immensely strong. But, if it is to dispel the looming clouds of the longer term, it has to make serious progress on reforming its economic model, moving away from reliance on cheap energy and oil revenues to create jobs. Though policymakers are all too aware of the issues, and the massive alternative energy programme could be a key part of the solution, there is otherwise as yet not enough sign of the radical action required.

A version of this article appeared in The Gulf Online in January 2013.