MENA is Confirming its Status as a Growing Gas Demand Centre

HAKIM DARBOUCHE challenges traditional views that see MENA as a future gas supply centre

In 2011, gas demand in the Middle East and North Africa (MENA) grew faster than in any other region in the world. It increased by almost 9 percent year-on-year, reaching just under 490 bcm. This is in line with the trend seen in the region since the early 2000s, particularly in the energy-rich Gulf countries as well as in Egypt, where gas consumption has been growing at an average annual rate of 7–10 percent. With overall gas demand growth not expected to show any signs of abating in the medium term, MENA's interaction with international gas markets to 2020 is more likely to be as a growing demand (and import) centre than as a major source of new exports, challenging the assumptions

seen hitherto in the trade-flow projections of major international organisations.

Demand for gas in the MENA region has been driven primarily by its expanding needs for power (8–10 percent per annum), which in turn have been fuelled by relatively rapid economic, demographic and urbanisation growth in most countries in the region. In some cases, particularly in the Gulf countries, large, government-led investment in the energy-intensive industries, such as petrochemicals, has also contributed to growing demand for feed gas, especially where the competitiveness of these industries is designed around the availability of subsidised energy input.

However, economic fundamentals alone do not tell the whole story. End-user gas (and power) prices are kept at artificially low levels by government policies in the majority of MENA countries, leading to inflated demand and distorted resource allocation. At $0.75/mmBtu in Saudi Arabia, $0.8/mmBtu in Kuwait, $1/mmBtu in Qatar and the UAE, $0.6/mmBtu in Algeria and $1.25–3/mmBtu in Egypt, domestic gas prices in MENA are well below opportunity values, and indeed below the marginal cost of new supply in many instances. They are the result of energy pricing policies that are rooted in a political economy logic that is no longer compatible with gas market and socio-economic realities in the region. Yet, governments find themselves locked in this logic and unable to introduce reforms without having to pay a non-material price for the required adjustments.

Data for 2011 also shows that MENA gas supply increased by more than 8 percent compared to the year before, but that did not translate into a higher share of the region's contribution to global gas exports, which remained unchanged at around 21–22 percent (Table 1). Among the region's gas exporters, only Qatar and Yemen saw relatively significant increases in gas production, driven by the ramp up of their LNG sales through the newly built liquefaction capacity. The rest of the growth was concentrated in associated-gas producers Saudi Arabia and Kuwait which, as well as having increased their oil production to compensate for the Libyan supply outage, began to see the results of the recent shift in their upstream gas strategies towards the development of non-associated reserves. Algeria and Egypt, the region's second and third largest gas exporters respectively, saw their production stagnate at best, with as a result a continued decline in exports.

Overall, MENA's gas supply potential remains under-exploited owing to a combination of low domestic gas prices, unattractive fiscal terms, and heavily bureaucratised sector management. But with growing gas shortages, many countries are looking to intensify E&P activity and attract more foreign investment by tackling one or more of the relevant issues faced by their upstream gas sectors.

Algeria: Moving to Unconventional Gas

Algeria's gas exports have been on a declining trend over the last few years, falling from over 60 bcm in 2006 to just over 50 bcm in 2011. This is mainly the result of stalling production, which reflects the beginning of the depletion of the giant Hassi R'Mel field – the lynchpin of Algeria's gas industry for five decades – and the fact that no major discoveries have been made and developed in several years.

To replace Hassi R'Mel with long-term reserves Algeria has little choice but to tap into its unconventional gas potential. Estimates of shale gas resources alone vary between several hundred to several thousand tcf, with the EIA putting technically recoverable reserves at 231 tcf. To this end, the government is in the process of introducing amendments to the hydrocarbons law, introducing greater fiscal incentives for unconventional gas exploration, and Sonatrach is partnering with selected IOCs, starting with ENI and Statoil. However, quite apart from the obvious logistical challenges involved in shale gas exploration, there is still uncertainty about the ability of Sonatrach to attract the required technology under the 51/49 percent shareholding arrangement.

With shale gas being very much a long-term prospect, Algeria will continue to struggle maintaining current export levels and market share in Europe, at least until the second half of the 2010s when the new Southwest fields will come on stream. The new LNG production capacity (9.2 mtpa) that will come online in 2013–14 at Skikda and Arzew will mostly serve to replace existing trains, which are likely to be retired by the end of the decade. In the longer term, Sonatrach will likely focus on pipeline exports where both its competitive advantage and netback values are greatest.

Libya: Continued Focus on Oil

Libya has never been a major gas province and will continue to be a relatively small exporter of gas until at least the end of this decade. The focus, should the political and security situation allow, will be primarily on oil, and the new government has promised to improve the investment terms it inherited from the previous regime.

Shell's decision to relinquish its upstream gas interests in Libya has come as no surprise, considering the disappointing results of its exploration activities in the Sirte Basin and the fact that the company is keen on limiting its exposure to the multitude of uncertainties in the new Libya. However, should better conditions become available there is little doubt that

Table 1: MENA Gas Data, 2001–2011

	Production (Bcm)	Consumption (Bcm)	Share of int'l trade (%)
2001	362.4	263	16.1
2002	379	276	16
2003	407	289	16.1
2004	445	313	15.9
2005	483	348	17.6
2006	514.2	362	19.2
2007	540.6	377	19.4
2008	570	412	20.6
2009	571	428	19.8
2010	622	448	21.4
2011	673	488	21.7

Sources: BP and Cedigaz

foreign investors will show renewed interest in Libya's undisputed conventional and unconventional gas potential.

Egypt: No More Pipeline Exports?

Like Algeria, Egypt's gas exports have been declining steadily for the last five years. Stagnating production and fast-expanding domestic demand have resulted in an acute gas deficit that has left the power and industrial sectors deprived of vital feedstock. With the removal of the Mubarak government last year, opposition to gas exports – particularly to Israel – grew, forcing the government to review pricing arrangements with Jordan for Arab-Gas-Pipeline (AGP) deliveries and with LNG offtakers BG, GDF Suez and Union Fenosa. The deal with East Mediterranean Gas, the owner and operator of the pipeline to Israel, proved just too controversial to handle, and the Egyptian gas holding company EGAS seized the opportunity to unilaterally terminate the 15-year supply contract binding Egypt to Israel. It would appear that in addition to political and commercial considerations, gas supply availability played a big part in EGAS's decision.

Until 2015 at the earliest, Egypt's gas supply-demand balance will remain very tight, squeezing LNG exports and undermining the viability of AGP supplies to Jordan, especially if the latter develops alternative import options. From 2015, new gas fields in the offshore Mediterranean are expected to come on stream, including BP's North Alexandria and West Mediterranean Deepwater concessions, but future supply will mostly be earmarked for domestic use as demand for gas in Egypt is expected to grow at no less than 6 percent per annum for the rest of the decade. Domestic gas prices remain a major issue, not only driving strong demand growth but also undermining the economics of new upstream gas projects. Unless the Egyptian government is able to offer higher prices to upstream producers or allow them to sell their gas directly to industrial end-users, EGAS's ongoing bidding round, where 15 gas prone blocks are on offer, risks falling flat. But with the political transition proving more protracted and complicated than anticipated, more uncertainty could be brought to bear on Egypt's gas sector.

Qatar: From Export to Domestic Focus

Having achieved its 77 mtpa LNG production capacity target, Qatar is now focusing on landing as many long-term contracts in the highest-paying markets as possible. With changing conditions in all three markets (North America, Europe, and Asia), this has meant showing more flexibility on its pricing policy.

Supply from the super-giant North Field for new gas export projects remains suspended until at least 2014 when the ongoing study of the reservoir is expected to be completed. Until then, any new reserves will be used on the domestic market to supply Qatar's ambitious plans for industrial and economic diversification. And beyond 2014, depending on the results of the North Field study, as much as 12 mtpa of liquefaction capacity could be added by debottlenecking the mega trains or, alternatively, regional pipeline exports could be increased if pricing issues with neighbours are resolved. Whichever way things go, Qatar is the only country in the MENA region capable of increasing its exports significantly by 2020.

Saudi Arabia: Gas Focus Paying off

Fears about the prospect of Saudi Arabia's rapidly growing domestic energy needs eating into the kingdom's oil export capacity came to a head in 2011. With reports that as much as 600,000 barrels per day of crude oil were being burnt for power generation, as imports of gas are not allowed, doubts were raised about the spare capacity available to Saudi Arabia and its ability to play the role of swing producer in future.

As the initial results of the Empty Quarter exploration campaign proved disappointing, Saudi Aramco's attention turned more recently to offshore reserves, fast-tracking the development of the Karan, Hasbah and Arabiyah fields which have a combined production capacity of some 4.3 bcf/d. Karan was brought online in 2011 and is expected to reach its 1.8 bcf/d plateau by end-2012, while the other two fields are expected to come on stream in 2014. As a result, Saudi Arabia's gas production hit 9.88 bcf/d in 2011, increasing by over 13 percent on the year before, and is likely to continue growing in coming years as new reserves are developed in existing exploration areas and in the deep offshore Red Sea. The only uncertainty concerns domestic gas prices as plans to increase them to a level that would improve the commerciality of non-associated reserves appear to have been shelved for now.

Kuwait: LNG Needs Firming up

Kuwait led the way by becoming the first country in the MENA region to begin importing LNG in 2009. Since then, its demand for gas (and LNG imports) has been growing rapidly, to the extent that an onshore LNG import terminal for year-round supplies is now under consideration. Such a terminal will certainly be needed if Kuwait's plans to develop tight gas reserves with the help of Shell continue to stall because of technical and political difficulties.

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UAE: A 'sour' gas deficit

The UAE is estimated to have a gas deficit of some 10 bcm/yr and growing. While Dubai began importing LNG in late 2010, at a rate of some 1 million tons in the first year, Abu Dhabi's gas supply policy focused on the development of 'sour' gas reserves through the 2 bcf/d Shah and Integrated Gas Development projects. However, the 2014 start-up target for both projects looks increasingly uncertain, with technical difficulties compounding the commercial challenges besetting both projects. In the face of such delays and in the absence of any realistic prospect of receiving more gas from Qatar through the Dolphin pipeline under the current commercial and political conditions, the Abu Dhabi authorities are now looking into the possibility of importing LNG from 2014, starting with a 4 mtpa temporary floating facility and moving onto a more permanent option later on this decade.

Bahrain and Oman: Future LNG Importers?

Like other GCC countries, Bahrain and Oman are facing a gas shortage owing to limitations on domestic supply and growing demand. Bahrain seems to have decided to go down the LNG import route, having invited bids earlier this year for the import of LNG equivalent to 400–800 mmcf/d for 15 years starting in 2014, and even increased domestic gas prices by 50 percent to $2.25/mmBtu in January 2012 in anticipation of that eventuality. Oman, however, is exploring tight gas reserves, with BP developing the 1 bcf/d Block 61 project, and hoping that this would prevent it from having to resort to further imports of gas to be able to satisfy its domestic needs and firm LNG export commitments. BP's final investment decision is due in 2013 and will to a large extent depend on the ability of the Oman government to pay a higher price for the gas.

Iran: A Subsidy Reform Test-case

Iran is the only energy-rich country in the MENA region to have introduced a comprehensive energy subsidy reform and with some degree of success so far. Within the first year of the implementation of this programme, which began in December 2010, gas prices increased from as low as $0.30 to more than $3/mmBtu for residential users and up to $2/mmBtu for power generators and industrial users. The impact of these price hikes on demand has yet to be fully assessed, but it would appear the gas demand growth was slower in 2011 than in previous years, translating prima facie into higher exports to Turkey. On the supply side, the various phases of South Pars' development continue to move forward, though with a great deal of difficulty in the face of the debilitating effect of the international sanctions to which Iran is subjected. By the end of the decade, Iran's pipeline exports may increase, notably with the start of shipments to Pakistan in 2014–15, but LNG exports remain a distant prospect, especially if no changes to the political situation take place.

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Iraq: An Unlikely Exporter Before 2020?

Much hope was pinned on Iraq as a potential source of gas for Europe's Nabucco pipeline, but domestic energy needs, project delays, and political wrangling between Baghdad and Irbil have all but dampened those expectations. Bar an improvement in the internal political and security situation and/or an agreement between the central government and the KRG authorities allowing gas from the Kurdistan region to be exported to Turkey, it is highly unlikely that Iraq will be in a position to export any significant amount of gas by 2020.

Conclusion

Gas demand growth in the MENA region will almost certainly be as strong in the years to 2020 as it has been since the early 2000s. With a few notable exceptions, this will put a dent on the export ambitions of countries in the region and force many of them to import gas should they (continue to) fail to sufficiently develop domestic resources. In the face of the resulting and increasingly generalised gas deficit, MENA countries will have few options but to deal with the issues that have contributed to this status quo, starting for some of them with improving the fiscal terms for foreign investment in gas E&P, while for many others it will be more a question of increasing domestic end-user prices from their current artificially-low levels to at least the marginal cost of production. Action on the domestic pricing issue will be led by the countries that are most gas- and cash-short (Egypt, Oman, Bahrain), although the energy-rich countries should learn from the recent Iranian subsidy reform experiment and start addressing the issue of domestic prices sooner rather than later.