

## The oil and gas producing countries of North Africa and the Middle East

Despite the extent of their reserves, oil production in most countries of the Middle East and North Africa is not likely to increase significantly in the years ahead. Exports from the Middle East, 75% of which are to Asia, and those from North Africa, most of which are focused on Europe, should remain stable overall. The increase in gas production will contribute more to meeting fast-growing domestic demand than to boosting exports. Indeed, many Middle Eastern countries are paradoxically experiencing strains on domestic energy supplies due to energy demand stimulated by energy prices that are generally – and artificially – very low, and the adoption of economic development models based on energy-intensive industries.

The “Arab Spring” (the term coined to describe the waves of protest and demands for democratic representation experienced in most Arab countries during 2011) has led to far-reaching changes in the political landscape by overturning a national status quo that in some cases had been in place for several decades. The previous leaders and rulers of Egypt, Tunisia and Libya have been swept from power, whilst significant unrest has erupted in Yemen, Bahrain and Syria. With the exception of Yemen, “the situation now seems stable in the leading Gulf States, but in the longer term, these events have triggered a movement whose extent, duration and outcome remain uncertain” (Olivier Appert, BIP 24, August 2011). Against a background of strengthened international sanctions, Iran seems to be maintaining its status quo.

A period of transition has begun, which takes on varying appearances from country to country. The ongoing introduction of new regimes and the process of addressing the aspirations of national populations will not happen without difficulties, and periods of tension are certainly possible.

The regions of North Africa and the Middle East contain a number of countries that are major players in the international oil and gas landscape (Table 1). Their contribution to world hydrocarbon supplies is decisive.

By introducing new geopolitical uncertainties, recent events have put the issues surrounding security of supply back at the top of the agenda.

Table 1

Some of the major players in the Middle East and North Africa

Country	Ranking
Saudi Arabia	1 <sup>st</sup> in terms of conventional oil reserves 2 <sup>nd</sup> largest oil producer (after Russia) 6 <sup>th</sup> largest consumer of oil in the world
Iraq	3 <sup>rd</sup> in terms of conventional oil reserves
Iran	2 <sup>nd</sup> in terms of conventional oil reserves 3 <sup>rd</sup> largest consumer of natural gas in the world
Qatar	1 <sup>st</sup> in terms of LNG exports
Algeria	5 <sup>th</sup> largest exporter of gas in the world (by gas pipelines + LNG)

Source: BP Statistical Review, June 2011

This document sets out to present and analyse the relative importance and principal characteristics of producer countries in the Middle East and North Africa, in order to evaluate their current and future roles in the world energy landscape. Rather than conduct a country-by-country analysis, we have focused on a number of key issues, which are then illustrated with reference to the countries

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concerned. The key issues addressed will be oil and gas reserves, the leading producers and their characteristics, the trends in local energy consumption and international oil and gas exports.

### North Africa and the Middle East: two regions with substantial oil and gas reserves

The world's oil and gas reserves are concentrated in a small number of geographic regions, dominated by the Middle East. As a result, this region alone represents more than 50% of known oil reserves and 40% of gas reserves.

The Middle East accounts for around 10 times more of the world's total reserves than North Africa (Table 2). Saudi Arabia leads in terms of oil, as do Iran and Qatar in terms of natural gas, but many other countries are also major international players.

These reserves are for the most part located in super-giant<sup>1</sup> or giant fields. Of the world's 20 largest oil deposits, 13 are in the Middle East (5 in Saudi Arabia, including the Ghawar field, the largest deposit in the world).

This predominance of super-giant fields also applies to the Middle East's two major players in terms of natural gas reserves. Qatar and Iran share the world's largest deposit: the North Field/South Pars complex.

Similarly, in North Africa, a large proportion of Algeria's oil and gas reserves are concentrated in the two super-giant fields of Hassi Messaoud and Hassi R'Mel.

The majority of the figures for reserves shown in Table 2 originate from government sources, and their verification by independent organisations is often not possible. The absence of international operators in upstream oil operations in Saudi Arabia and Iran, and the post-war situation in Iraq, mean that the data available are not always fully transparent; a fact which in turn generates a diversity of controversy and raises questions regarding the actual level of oil reserves. The supremacy of the region is not at issue, although the rate of future developments could be impacted if reserve-related data turn out to have been overstated in some countries. Inclusion of non-conventional hydrocarbons made accessible as a result of recent technological developments should not fundamentally change the current situation in the Middle East and North Africa, inasmuch as the resources (shale gas and tight gas) located in these regions appear to be relatively modest at around 10% of the world's known non-conventional gas resources.

<sup>[1]</sup> Super-giant: deposits with initial reserves in excess of 5 billion barrels (Gbb)l  
Giant: deposits with initial reserves of between 500 Mbbl and 5 Gbb)l

Table 2

Reserves of oil and gas in North Africa and the Middle East at 1<sup>st</sup> January 2011

Country	Oil reserves Billion barrels (Gbb)l	Percentage of reserves worldwide	Gas reserves Billion m <sup>3</sup> (Gm <sup>3</sup> )	Percentage of reserves worldwide
Algeria	12.2	0.9	4 500	2.4
Egypt	4.5	0.3	2 200	1.2
Libya	46.4	3.4	1 500	0.8
Total for North Africa		4.6		4.4
Saudi Arabia	264.5	19.1	8 000	4.3
United Arab Emirates	97.8	7.1	6 000	3.2
Iraq	115	8.3	3 200	1.7
Iran	137	9.9	29 600	15.8
Kuwait	101.5	7.3	1 800	1
Qatar	25.9	1.9	25 300	13.5
Syria	2.5	0.2	300	0.1
Yemen	2.7	0.2	500	0.3
Total for Middle East		54.4		40.5

Source: BP Statistical Review of World Energy, June 2011

### The Middle East and North Africa together account for 35% of world oil production

The Middle East is the world's leading oil producing region, and given the extent of its known reserves, this status seems likely to intensify. Five countries (Saudi Arabia, Iran, the United Arab Emirates, Iraq and Kuwait) each produce more than 2 million barrels per day, contributing by far the largest proportion of regional production (Table 3). The majority of this production comes from super-giant fields discovered several decades ago: Ghawar, Rumaila, Zakum, Burgan, etc. Middle Eastern and North African oil production has remained relatively stable over the last decade (Figure 1). Despite the predominance of oil reserves in these regions, most of the increase in world demand seen since 2000 has been met by increased production outside the Middle East and North Africa (in Angola and the former Soviet States). This development illustrates the particularity of the global oil market. An oligopoly of countries with large reserves and moderate technical costs adjusts its supply on the basis of production quotas in order to protect price levels and/or avoid excessive market fluctuations, thereby maintaining the oil revenue flows that constitute the great majority of their export resources.

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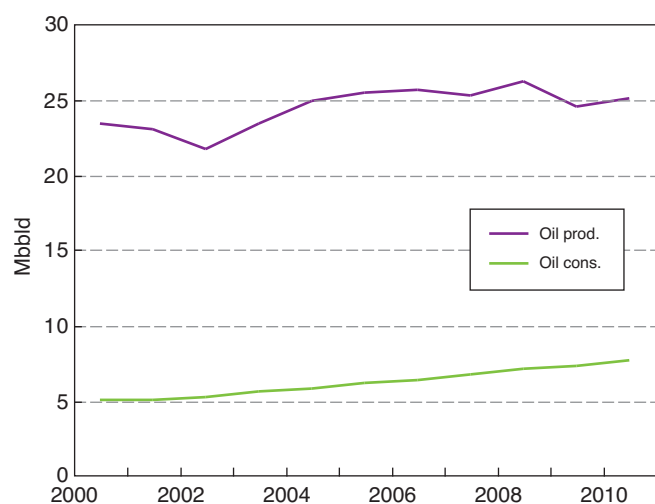
Table 3

The leading oil and gas producing countries of North Africa and the Middle East in 2010

Country	Oil production (Mbbld)	Percentage of global production	Gas production (Gm <sup>3</sup> /yr)	Percentage of global production
Algeria	1.81	2	80	2.5
Egypt	0.74	0.9	61	1.9
Libya	1.66	2	16	0.5
Total for North Africa	4.28	5	157	4.9
Saudi Arabia	10	12	84	2.6
United Arab Emirates	2.85	3.3	51	1.6
Iraq	2.46	3.1	1.3	-
Iran	4.25	5.2	139	4.3
Kuwait	2.51	3.1	12	0.4
Qatar	1.57	1.7	117	3.6
Syria	0.39	0.5	8	0.2
Yemen	0.26	0.3	6	0.2
Total for Middle East	25.19	30	460	14.4

Source: BP Statistical Review of World Energy, June 2011

Fig. 1 – Oil production and consumption in the Middle East



Source: BP Statistical Review of World Energy, June 2011

The two major North African players — Algeria and Libya — are important for European supplies, due to their proximity and the excellent quality of their crude oils. Both have production levels far below those of the leading Middle Eastern producers.

### Growth prospects for oil production and the current position of the leading national producers

The prospects for increased oil production vary significantly from country to country. In its medium-term forecast, the International Energy Agency (IEA) foresees a significant increase in Iraq, moderate growth in the United Arab Emirates, no change in Saudi Arabia and Kuwait, and a reduction in Iran over the next five years. Overall development of production capacity is expected to be fairly slow. Future investment should be focused not only on the development of new capacity, but also on compensating for the natural decline in current deposits. This second consideration is a substantial one inasmuch as the majority of production comes from giant and super-giant fields, many of which have been exploited over several decades and their reserves substantially tapped. The IEA estimates that in 2007, cumulative production from Middle Eastern fields represented 37% of initial reserves. It is not certain that the investment required to achieve significant increases in production will be made, given the uncertainties surrounding the actual level of future demand for oil and the legal or de facto closure of certain mining areas to international investment (Saudi Arabia, Kuwait and Iran).

#### Iraq

Iraq has decided to invite foreign companies to contribute to rebuilding its oil production potential, and has already requested competitive bids for four contracts. Given the impact of 30 years of war and embargo, many opportunities exist to revive old deposits using modern technologies and/or to develop super-giant fields previously identified, but yet to be brought into production. The Iraqi authorities have announced the development of around 9 Mbbld in new capacity by 2017 (compared with the current production level of 2.5 Mbbld), as a result of a dozen agreements reached with industry players as diverse as BP, Shell, Total, CNPC, Japex, Gazprom and Sonangol. This estimate is seen as optimistic by many analysts due to the logistical problems involved in mobilising equipment and technologies, the export constraints imposed by the geography of Iraq (very restricted access to the sea), the tensions that exist between central government and the region of Kurdistan, and the need to recreate a suitable industrial, regulatory and security environment. The IEA therefore forecasts an increase of only 1.5 Mbbld by 2016 (Table 4). Nevertheless, it is reasonable to think that by the end of the decade, Iraq could have tripled its production capacity to become a major producer and exporter. OPEC,

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created in Baghdad in 1960 by five founding members, including Iraq, must redefine Iraq's production quota. Getting other OPEC members to accept a new, higher level of Iraqi production will present an additional challenge (for more details, see Panorama 2011 article "Iraq: making its return to the oil and natural gas markets").

Table 4

Trend in production capacity for the principal oil producing countries of the Middle East and North Africa (Mbbld)

Country	2010	2016
Algeria	1.35	1.32
Libya	1.67	1.84
Saudi Arabia	12.07	11.82
United Arab Emirates	2.7	3.23
Iraq	2.55	4.08
Iran	3.87	3.06
Kuwait	2.58	2.61
Qatar	1.02	0.98
Total	27.81	28.94

Source: IEA, *Medium-term oil and gas markets 2011*

### Saudi Arabia

The production capacity of Saudi Arabia is close to 12.5 Mbbld; a target set some years ago. This gives the country an excess capacity of nearly 2 Mbbld, thus permitting it to stabilise the oil market, if necessary. Saudi Arabia has thus increased production by almost 1.5 Mbbld in order to replace suspended Libyan exports, going so far as to offer a blend of lighter crudes that comes closer to the qualities normally exported by Libya. Maintaining this surplus production capacity represents a substantial investment for the country, over and above the expenditure required to offset the decline in existing fields. Wood Mackenzie evaluates the investment made annually by Saudi Arabia in permanently maintaining this 12.5 Mbbld of production capacity at between 20 and 30 billion dollars. A series of deposits have been identified which could be developed in future to bring the country's production potential to approximately 15 Mbbld. Nevertheless, the uncertainties surrounding the future world oil demand and the rate at which Iraqi production increases make new decisions on significant investment unlikely in the near future.

### Iran

The current level of production from Iran is a long way below the 6 Mbbld last seen in the 1970s, and although Iran is still the second-largest national producer in the Middle East, the old deposits that provide the majority of

current production would require greater investment to offset their natural decline or to increase extraction levels. The large amount of natural gas reinjected (30-40 Gm<sup>3</sup>/yr) to maintain production reflects the difficulties involved. Giant deposits, such as Azadegan and Yadavaran, could be used to this end. However, the virtual closure of the country to foreign investment as a result of American, European and UN sanctions, combined with less-than-attractive buy-back contracts, prevent the modernisation of equipment and technologies, thereby limiting the country from exploiting its full potential. It is unlikely that Iran will achieve the 5 Mbbld target set by its national authorities for 2015. Instead, the IEA and other analysts forecast a fall in crude oil production levels. It should be noted that the erosion of Iranian crude oil production is partly masked, since the statistics include the increasing contribution made by natural gas liquids derived from gas deposits. These represented 0.5 Mbbld in 2010; an amount that should increase in line with growth in Iranian natural gas production. Table 5 highlights this addition to liquid hydrocarbon production, which, for some countries, represents volumes of real significance that will play a growing role in global supplies of liquid hydrocarbons. As a result, production of natural gas condensates and liquids in North Africa and the Middle East could increase by nearly 40% between now and 2016.

Table 5

Production of natural gas condensates and liquids in North Africa and the Middle East (Mbbld)

Country	2010	2016
Algeria	0.61	0.73
Libya	0.11	0.2
Saudi Arabia	1.55	1.82
United Arab Emirates	0.56	1.03
Iran	0.53	0.87
Qatar	0.90	1.26

Source: IEA, *Medium-term oil and gas markets 2011*

### Libya

Libyan production in 2010 was approximately 1.7 Mbbld. It seems that the country's civil war has not resulted in massive destruction of its oil infrastructures. Production could therefore restart fairly quickly, but most probably at a level far below that seen before the conflict. From the technical point of view, it seems possible that this level of production could be resumed by the beginning of 2013, once damaged infrastructures have been rebuilt. Nevertheless, the definition of a new legal framework, the introduction of secure working conditions and competent

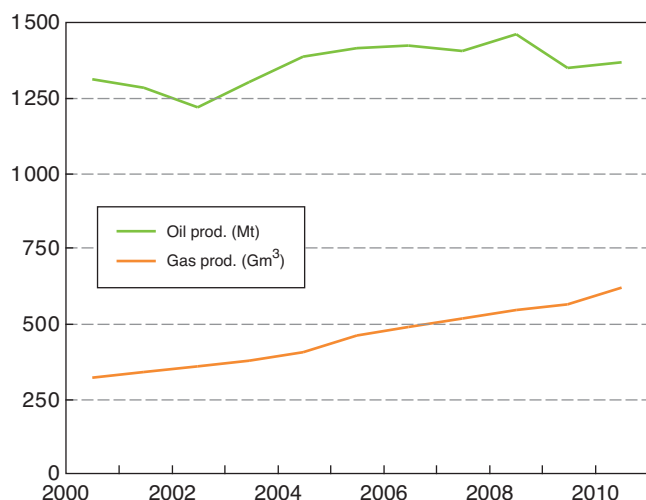
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personnel, and the effective ability of the country's new leaders to ensure the transition to democratic government without opposing factions paralysing the country are all important issues that make it reasonable to assume that Libya's full return to the international oil marketplace could take longer than the optimistic declarations made by some Libyan officials.

### Natural gas production in the Middle East and North Africa is growing strongly, and now represents 20% of world production

Gas production in the Middle East and North Africa has increased considerably in the last 10 years, in contrast to oil production, which has remained relatively unchanged (Figure 2). For some countries (Saudi Arabia, the United Arab Emirates and Iran), this increase has been focused solely on meeting strong growth in local demand, whilst for others (Qatar, Algeria and Egypt), it has been a matter of boosting gas exports.

Fig. 2 – The trend in Middle Eastern and North African oil and gas production



Source: BP Statistical Review of World Energy, June 2011

There are three sources of gas: gas production in association with oil production, unassociated gas production with low acid gas content and unassociated gas production with high acid gas content. Table 6 shows the type of gas most commonly produced by the leading producing countries.

The majority of production in Saudi Arabia and the United Arab Emirates is gas associated with oil production. This type of gas has a relatively low production cost, but has the drawback of depending on the level of oil production. In 1998, Saudi Arabia opened up some

blocks to international oil company exploration in the hope of finding free gas deposits. However, this Saudi Gas Initiative did not lead to significant discoveries. Recently, the country has decided to develop some deposits already identified, but previously left unexploited due to the higher extraction costs associated with their offshore location and acid gas content.

In Qatar, Iran and Algeria, the majority of gas production is focused on super-giant free gas deposits of excellent quality (North Field<sup>2</sup>, South Pars and Hassi-R-Mel). These fields contain a high proportion of natural gas condensates and liquids, which contribute additional income and allow natural gas to be marketed at a competitive price. Qatar, in collaboration with a number of international oil companies, has thus been able to quintuple its gas production volumes in 10 years to become the world's largest exporter of LNG. Iranian production, of which 80% comes from non-associated gas deposits in general, and the super-giant South Pars field (the Iranian section of the North Field) in particular, has doubled over the last decade, with almost all production being used to satisfy domestic demand.

Table 6

Gas production by country (Gm<sup>3</sup>)

Country	2000	2010	Origin of the majority of gas
Algeria	84	80	non-associated
Libya	16	16	non-associated
Egypt	21	61	non-associated
Saudi Arabia	50	84	associated
United Arab Emirates	38	51	associated
Iran	60	138	non-associated
Oman	9	27	non-associated
Qatar	24	117	non-associated
Yemen	0	6	associated

Source: BP Statistical Review June 2011 and others

Acid gas production remains limited due to its high well-head cost (estimated at between \$4 and \$5MBtu), which is substantially higher than that for associated gas. The United Arab Emirates has considerable quantities of non-associated acid gas in the Khuff reservoirs of Abu Dhabi, which provide a minority contribution to total production. The difficulty of developing these acid gas deposits was illustrated by the 2010 withdrawal of ConocoPhillips from the Shah project onshore field in Abu Dhabi. Nevertheless, these deposits will have to be developed to disconnect gas production levels from oil production quotas, and to ensure increased production.

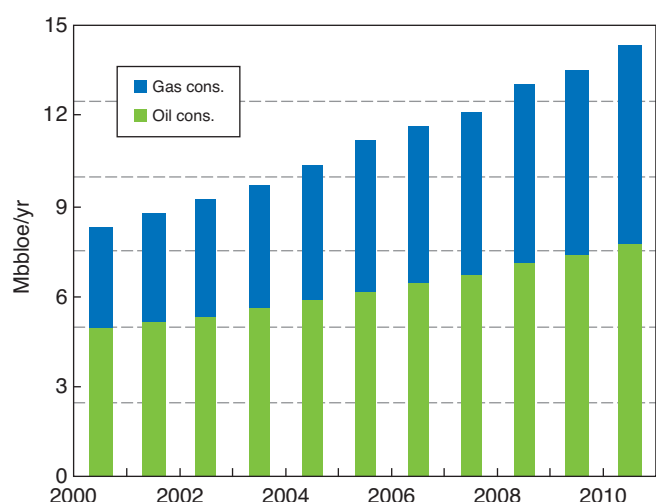
[2] Although the North Field deposit contains a little hydrogen sulphide (approx. 5%)

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### Uncontrolled energy consumption is leading to shortages in some countries

Increasing population, higher standards of living, accelerated growth of energy-intensive industries (cement, aluminium, petrochemicals, etc.) and highly-subsidised energy prices have led Middle Eastern demand for oil and gas to almost doubling. The strong growth in demand for water, which is met partly by seawater desalination, also has the effect of increasing energy consumption.

Fig. 3 – Trend in Middle Eastern oil and gas consumption



Source: BP Statistical Review of World Energy, June 2011

Access to affordable energy is a basic necessity, and the price of energy is politically a highly sensitive issue in many regions. Leaders of countries with substantial oil and/or gas reserves want to deliver affordable energy to stimulate industrialisation and development, and the populations of these countries take the general view that this geological benefit should mean low energy costs for them. As a result, governments often give substantial energy subsidies to their domestic markets. Pump prices in countries such as Saudi Arabia, Kuwait and Iran are therefore set by central government at levels equivalent to around 10-20 euro cents per litre. This often encourages wasteful consumption, leads to a significant proportion of national budgets being devoted to subsidies, and entails high opportunity costs.

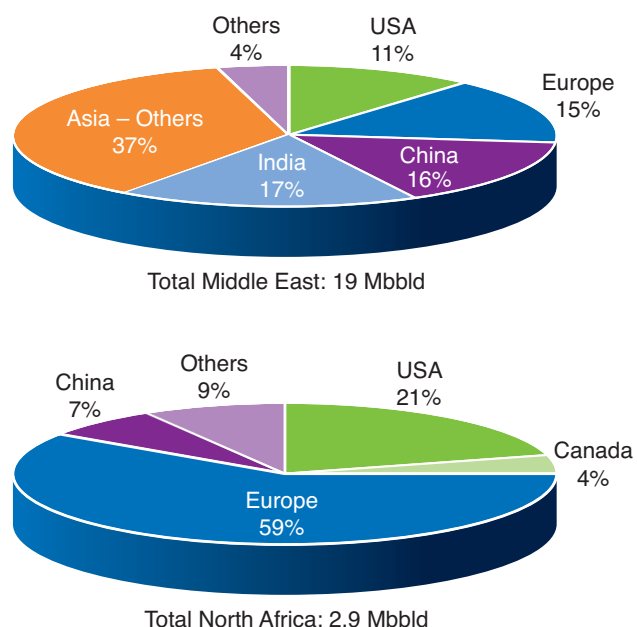
In the absence of growth in oil production, escalating domestic demand could affect the region's ability to export. This can also lead to tensions within the domestic energy industry. Some countries are beginning to face difficulties ensuring adequate supplies when energy pricing is not adjusted to temper rising demand. This situation has led to temporary natural gas shortages

in the United Arab Emirates in summer, and in Iran during the winter months. Given the extent of their gas reserves, this situation seems paradoxical but the explanation is essentially that the retail price of gas in the domestic market is too low to support the costs of bringing new deposits profitably into production.

### Exports of hydrocarbons from the Middle East and North Africa are not likely to increase significantly between now and the midpoint of the decade

The Middle East accounts for nearly 35% of world oil exports. 70% of exports from the region go to Asia, providing 60% of that region's oil supplies. The majority of North African oil exports (essentially from Algeria and Libya) go to Europe, although around 20% go to the USA (Figure 4). Total exports from the Middle East and North Africa are not expected to rise significantly over coming years, given on the one hand today's substantial economic uncertainties, which at best will encourage only a limited increase in oil production levels, and on the other hand, rising levels of domestic consumption.

Fig. 4 – Middle Eastern and North African oil export markets



Source : BP Statistical Review, June 2011

North Africa (essentially Algeria) has been a natural gas exporter for many decades, whilst the Middle East has made a significant contribution to the international gas market only in recent years.

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### North African gas exports will fall in 2011, but are expected to return rapidly to their previous level

In developing their gas exports, both Algeria and Libya have relied on their proximity to the European market. Gas exports were initially made in the form of LNG, but due to subsequent advances in deep-water pipeline technology, exports by pipelines now predominate (Table 7).

Table 7  
North African gas exports (Gm<sup>3</sup>)

Country	Europe	Other destinations	Total
Algeria – LNG	19	0.3	19.3
Algeria – gas pipelines	35	1.5	36.5
Total for Algeria			55.8
Egypt – LNG	4.7	5	9.7
Egypt – gas pipelines	-	5.5	5.5
Total for Egypt			15.2
Libya – LNG	0.3	-	0.3
Libya – gas pipelines	9.4	-	9.4
Total for Libya			9.7

Source: Cedigaz, *Natural Gas in the World, 2011*

Algeria is the world's 5<sup>th</sup> largest exporter of gas (pipeline and LNG exports combined) and supplies more than 10% of the gas consumed in the European Union. Its current total annual export capacity is close to 80 Gm<sup>3</sup>/yr, split across three gas pipelines<sup>3</sup> (51 Gm<sup>3</sup>/yr) and two liquefaction plants (28 Gm<sup>3</sup>/yr).

A fourth gas pipeline (GALSI – 8 Gm<sup>3</sup>/yr) is now planned between Algeria and Italy for 2014. Plans are also in place to construct additional liquefaction facilities in existing plants to bring LNG export potential up to approximately 40 Gm<sup>3</sup>/yr in 2015. As a result, the country could have a total export capacity of around 100 Gm<sup>3</sup>/yr by 2015. These infrastructure developments are consistent with the country's gas export target of 100 Gm<sup>3</sup>/yr in 2015. Nevertheless, these targets may not be realistic, given the growth in domestic consumption of natural gas and slower-than-forecast increase in gas production levels. Should this prove the case, exports will increase only modestly in the coming years. This fact could justify postponement of the final investment decisions for some infrastructure projects currently at the planning stage.

[3] The Transmed pipeline (32 Gm<sup>3</sup>/yr), the Maghreb-Europe Gas (MEG) pipeline (11 Gm<sup>3</sup>/yr) and the newly-constructed Medgaz pipeline (8 Gm<sup>3</sup>/yr)

The majority of Libya's gas exports are made via the Greenstream gas pipeline to Italy. The majority of gas exported comes from the Wafa field, where production was maintained during the recent conflict. Exports of natural gas are expected to return to their previous level fairly quickly (within 6 to 12 months).

Egypt is a relative newcomer to the international gas market, and contributes a limited amount to European supplies via its LNG exports (5 Gm<sup>3</sup>/yr). It also exports gas via gas pipelines to Jordan, Syria and Israel. Domestic demand for gas has more than doubled in 10 years, largely as a result of rising electricity demand in this country of 80 million people with a fast-growing economy. Domestic consumption of gas is rising faster than production, causing the Egyptian authorities to debate the issues surrounding the trade-off between local demand and the need to export. Against this background, the country's gas exports will make only a relatively modest contribution to topping up European supplies of natural gas over the coming years.

### Middle East: gas exports are increasing in the form of LNG

Gas exports from the Middle East to markets outside the region are all in the form of LNG, with the exception of a limited quantity exported by Iran to Turkey (8 Gm<sup>3</sup>), and to Armenia and Azerbaijan (0.7 Gm<sup>3</sup>). Construction of gas pipelines to third countries is often hampered by regional rivalries, border disputes and the fear of becoming dependent on the country through which the pipeline passes, with the attendant risks to security of supply. In addition, many projects stumble as a result of the price difference between the target domestic market and the prices exporters wish to achieve. This explains the attraction and growth of international exports of LNG, which enable exporters to obtain higher prices (Table 8).

Table 8  
Middle Eastern gas exports (Gm<sup>3</sup>)

Country	Europe	Asia	Other destinations	Total
United Arab Emirates	-	8	-	8
Qatar	36	36	4	76
Oman	0.2	10.4	0.9	11.5
Yemen	0.5	3.5	1.5	5.5
Total	36.7	57.9	6.4	101

Source: Cedigaz, *Natural Gas in the World, 2011*

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### The Middle East contributes very significantly to Asia's external supplies of LNG

Qatar is the major player, with an export capacity of 106 Gm<sup>3</sup> at the end of 2010. This level has been achieved by completing all the projects initiated over the past 10 years. In 2005, Qatar decided to wait before initiating any new developments in order to arrive at a more accurate evaluation of its long-term export capacities and its domestic market demand.

The majority of its exports go to Asia (India, Japan and South Korea) and Europe. Although a high American demand for LNG was forecast, it has not materialised, due to the development of non-conventional gas sources in the USA. This in turn has resulted in a redeployment of Qatari exports to other destinations. The commissioning of new liquefaction facilities will allow Qatar to significantly increase its contribution to China's LNG supplies.

Qatar also plans to add value to a proportion of its natural gas by converting it using GtL (Gas to Liquids) technology; Sasol (South Africa) and Shell are involved respectively in the Oryx and Pearl projects. Since 2009, Oryx has been producing 34,000 bbl/d of liquids by converting approximately 3.4 m<sup>3</sup>/yr of natural gas, whilst the Pearl project (which started up in June 2011) should be capable of converting 16 Gm<sup>3</sup>/yr into 140,000 bbl/d of high-quality oil products.

In terms of international gas trading, exports outside the region are now being complemented by the growth of internal trade within the region. For example, the Dolphin gas pipeline now supplies the United Arab Emirates and, to a lesser extent, Oman. Kuwait has also recently introduced a floating regasification terminal for LNG imports (2.8 Gm<sup>3</sup> in 2010) from countries inside and outside the region.

### Conclusion

The information presented above illustrates the significant differences in the positions occupied by Middle Eastern countries in terms of the size of their reserves, the extent of their oil exports and whether or not they are gas exporters. Another differentiating factor is population size, which varies considerably between highly populated countries like Egypt and Iran, and the Gulf Emirates, such as Qatar, with a national population of less than 1 million.

Nevertheless, there are also major trends shared by all these countries. Most have economies that are highly dependent on oil and/or gas exports. They have adopted economic models based, in most cases, on very low energy prices in their

domestic markets. These low prices have been justified to provide easily affordable access to energy (low-cost oil and associated gas) in order to meet the needs of populations with low levels of spending power. However, demographic growth, rising standards of living and the development of energy-intensive industries, when combined with low energy prices, have led to an explosion in demand for energy, particularly electricity. Most countries have turned to natural gas to meet this demand, although some have had to consume greater quantities of crude oil and/or oil products in order to produce additional electricity. This strain on energy supply has led to blackouts in some countries and periods of natural gas shortage in others during seasonal demand peak.

The outlook for growth in local production of hydrocarbons is generally limited, not because of any lack of deposits to develop, but rather because of the size of investment required, uncertainties regarding the global economic climate (which in turn make it difficult to reach decisions on increasing export capacities), and energy prices in domestic markets that are too low to justify new projects on economic grounds.

Some countries must now begin to face the need to balance domestic demand against export demand for natural gas (to varying degrees depending on the exporting country concerned), and the need to increase the price of energy to levels more compatible with new cost conditions.

Overall, the Middle East and North Africa will continue to provide a major proportion of world oil and gas supplies. Nevertheless, it is not certain that their contribution will increase significantly, in absolute terms, during the next few years. On the other hand, towards the end of the decade, the Middle East could increase its role as an exporter of hydrocarbons if Iraq and Iran are able to exploit their enormous reserves effectively, and if Saudi Arabia and Qatar — the region's leading players in oil and natural gas — decide to consolidate their positions.

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