Set for significant growth

The North African hydrocarbon industry is on the verge of significant growth in both upstream and downstream capital expenditure, with expected investment of $20.1bn and $22.2bn respectively over the next five years. This is the headline finding of the recently-published North Africa Oil & Gas Report 2007–2011 *by energy business analyst Douglas-Westwood. In this article, the authors** Cyril Widdershoven *and* Thom Payne *discuss some of the thinking behind the results.*

In the coming years, Europe's insatiable appetite for hydrocarbons will prompt a renewed vigour in exploration and refining in the energy-rich North African states. Although the region's current production of 4.6mn b/d of oil and 163bn cm/y of natural gas is moderate in comparison to the levels of the world's most prolific producers such as Saudi Arabia and Russia, this figure does represent 31% of crude oil and 35% of natural gas consumption of the European Union (EU). Relatively low domestic levels of hydrocarbon consumption in the North African states mean that the area is keenly regarded as an exporter of fossil fuels by its European neighbours. Currently, 30% of EU natural gas imports emanate from North Africa via pipelines, with a further 5% coming in as LNG. Increasingly, strained relations between Europe and major gas exporter Russia, coupled with the awakening of super economies in the east, means that North Africa's position as an exporter of oil and gas looks set to expand over the coming years.

Further developments in the region should see production rise to 4.8mn b/d and 206bn cm/y of natural gas by 2011 – a 4.3% and 26% increase respectively. However, it is not just augmented production that will improve North Africa's role as an exporter, but also the advent of new technology. The arrival of LNG as a cleaner source of energy not only aids western states to adhere to international obligations on global warming, such as those laid out in Kyoto in 1998, but also enables the effective transport of gas by tanker, opening up the gas hungry markets of the US, China and India – all previously unreachable via existing pipeline technology. This is not to say that pipelines will no longer play a part in North African energy distribution (a number of significant trunk line projects are set for the next five years) but that the potential markets for major gas producers such as Algeria and Egypt have swelled exponentially.

With clear and lucrative markets in sight, western energy majors are keen to invest. In particular, big strides are expected in the North African downstream sector, with investment in LNG and petrochemicals expected to reach $20bn over the 2007–2011 period, compared to the $6.5bn spent over the previous five years.

Recently, maybe the most high profile of deals with western majors has been the well documented return of BP to Libya following the dropping of international sanctions against the Gaddafi regime in 2003. BP's pledge to invest over $2bn in exploration for natural gas was initially discussed in 2005 following on from Shell's $100mn investment in the Libyan LNG plant at Marsa El-Brega in return for the rights to five exploration blocks in the country's Sirte basin. Potential natural gas plays in Sirte aim to bring the El-Brega plant back to its full capacity of 4.4bn cm/y of natural gas, as well as providing Shell with a possible greenfield site of its own.

The development of LNG projects in the North African states of Libya and Egypt (which currently accounts for 21.7% of total US LNG imports) should come as no surprise as it was just over 40 years ago in Algeria where the world's first LNG facility at Arzew came onstream in 1964. There is little doubt over North Africa's LNG pedigree and, as the eastern economies of India and China continue their rapid development, downstream investment in these three nations is expected to continue.

Upstream growth

Growth in the region will also occur in the upstream sector, with steady increases forecast throughout the drilling, seismic and offshore platform markets (see **Figure 1**). In 2006, the North African upstream market was

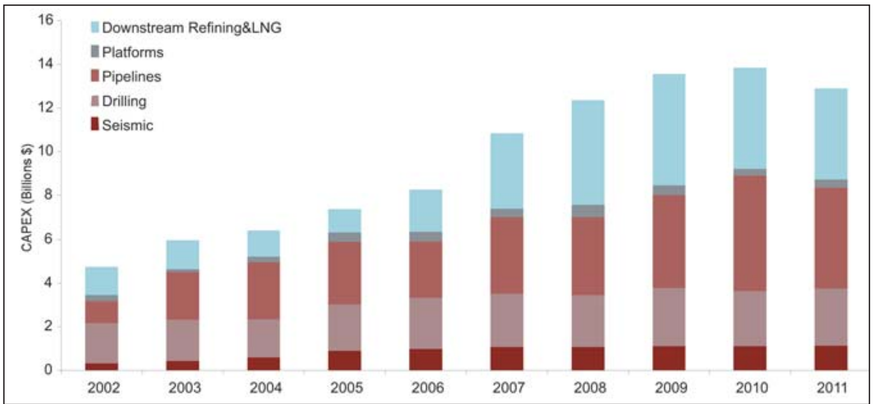

Figure 1: Capital expenditure (capex) in North Africa, 2002–2011
Source: Douglas-Westwood

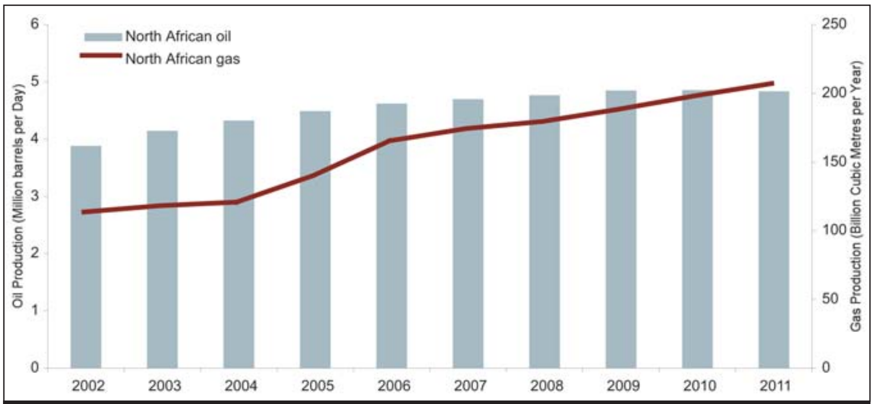

Figure 2: North African oil and gas production, 2002–2011
Source: Douglas-Westwood

valued at $3.7bn and a further $20.1bn is expected to be invested in exploration and production by 2011. The growth in North Africa's upstream sector can be encapsulated by tremendous expansion in the seismic acquisition market. For the 2007–2011 period, Douglas-Westwood predicts over $5.4bn worth of investment in this area – a 69% increase over spend from the previous five years.

Although neither Morocco nor Tunisia can be regarded as major hydrocarbon producers, revived interest in neighbouring Libya and Algeria (which share a similar geology) will drive future exploration in these countries. In Morocco, a recent agreement between Norwegian E&P player Norsk Hydro and Fugro Geoteam will see over 2,200 sq km of 2D seismic acquisition captured in the offshore Safi region. A number of other agreements will result in $316mn of expenditure on seismic activity in Morocco over the next five years. Some $461mn is forecast to be spent in Tunisia over the same period; the majority once again emanating from offshore exploration – for example, the acquisition of 3,000 sq km of seismic data is currently underway by Compagnie Generale de Geophysique (CGG) on behalf of Plectrum Petroleum.

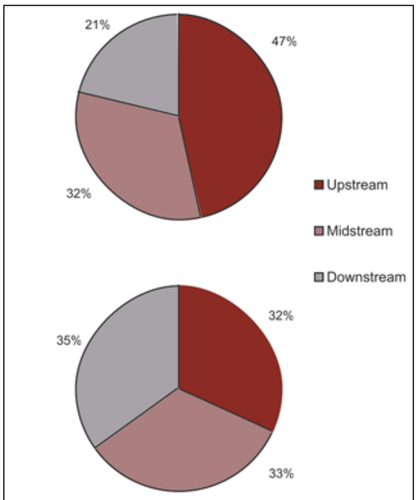

Figure 3: North African capex in 2002–2006 (top) and 2007–2011 (bottom)
Source: Douglas-Westwood

Although the drilling market will see relatively modest growth compared to other sectors, over $12.5bn of investment is expected over the next five years, marking a 27.3% increase over the 2002–2006 period. Of this proposed investment, only a quarter will be spent onshore, reflecting the higher premiums and increasing levels of offshore activity in the North African region. As the major offshore player in the North African market, the majority of expected drilling expenditure will stem from Egypt, where estimated spend of $7.6bn over the 2007–2011 period will account for 60% of the total market. Egyptian offshore drilling will be influenced by activity in the British Gas-led Saffron Scarab development. The country's first subsea project, a number of surrounding fields such as Simian, Sienna and Sapphire have since been developed off the back of its success, significantly adding to Egypt's current offshore natural gas output of 40bn cm/y. The majority of this gas is processed through the Damietta LNG plant for export to the US, Spain and France.

The expansion of Egypt's subsea industry is helping to heighten the profile of North Africa as an offshore producing province. In recent years, this effort has been enhanced by the arrival of Mauritania to the oil producing community in February 2006. Since the completion of the Chinguetti play, the nearby Tiof and Banda fields have been cited for development, driving the anticipated $2bn investment in the region's offshore industry over the next five years.

Midstream support

To support the growing upstream and downstream industries, significant growth is predicted in the North African midstream sector, as pipelines are used to pump produced hydrocarbons from subsea developments to the shore and to transport energy across the Mediterranean to southern European markets. With expected investment of over $21.1bn between 2007 and 2011, the pipeline market constituted 31% of the total North African market in 2006.

This future spend will be driven by the progression of major projects such as the proposed Medgaz trunk line that will carry natural gas from Algeria to southern Spain and will attract over $3bn worth of investment alone over the next three years. Upon completion in 2009, the pipeline is expected to supply a total capacity of 8bn cm/y of natural gas to EU markets.

A number of other major projects are also in the offing, in particular the Trans-Saharan gas pipeline (TSGP) which, once completed in 2015, will stretch 4,300 km and have cost in excess of $13bn. However, concerns over the massive costs involved not only in the development of the project but also the protection and security of such large amounts of gas have raised doubts over its progression.

A final word

As the economies of Asia and the West continue to place increasing demands on the world's producers of oil and gas, the reputation of North Africa as a major exporter will no doubt continue to grow. However, to provide the necessary output, investment will be needed and over the next five years we can expect significant growth in the region's downstream sector as LNG is increasingly used as a method for fully exploiting its generous reserves of natural gas. ●

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For more details about the North Africa Report 2007–2011 *e:* **admin@dw-1.com** *or t: +44 (0)1227 780999.*