

## **THE OFFSHORE PRODUCTION AND SPENDING MARKET** **Declines are happening but they should be short-lived**

*Dr Michael R. Smith, Chief Executive, Energyfiles, [michaelsmith@energyfiles.com](mailto:michaelsmith@energyfiles.com)*

**The short term outlook for the offshore oil and gas industry has become more difficult to predict than ever. Lower oil prices at the beginning of the year led to exploration activity being deferred or cancelled, developments being delayed, and layoffs from both oil and service companies. But no sooner had the price gone below many project hurdles, then up it came again with drilling and development plans resurrected. The last few years saw an unprecedented boom in activity but there is now uncertainty and, in some quarters, despondency. However with energy security issues pressing, downturns will be short-lived and serve only to make growth even sharper.**

### **A WORLD LED BY CAPRICE**

Caprice is whimsy - doing things on impulse, and over the last year or two that is what has been necessary to cope with global financial turmoil. We have had huge job losses, massive government support of banks and insurance companies, and bankruptcies at hundreds of firms with economies sharply reversing. Inevitably energy demand has fallen. Oil demand, standing at around 85,000 barrels per day in 2007, declined in 2008 and will decline even further in 2009 – the first time this has happened for two years running since 1983.

Oil and globally traded gas prices had risen at unprecedented rates during the first half of 2008, partly as a result of price speculation but primarily due to a lack of supply to meet relatively modest demand growth. After year-on-year price increases from a low of \$13 per barrel (for Brent in 1998), oil rose to an average of \$85 per barrel in 2008. But these averages show only part of the picture. The spot price for Brent crude spiked at \$143.95 on the 3<sup>rd</sup> July 2008 - a build up that was, at least partially, responsible for the financial crisis. It had tumbled back to \$36 per barrel by the end of the year and rose again to around \$70 by mid-2009. Retained profits helped to soften the blow for oil and service companies, although many smaller firms have found it difficult to raise capital for drilling.

In such an environment, offshore spending activity, which usually is planned with long lead-in times in mind, is bound to be volatile. But how for long will the volatility last and how deep will the decline be? Detailed quantitative analysis is available in two reports; the just published, *'World Offshore Oil and Gas Production and Spend Forecast 2009-2013'*; and the recently published, *'World Offshore Drilling and Spend Forecast 2009-2013'*. Some of the headline numbers are reviewed below.

### **WORLD OFFSHORE PRODUCTION**

Offshore oil production continues to rise slowly, even with the upheavals of late 2008. At 27mm bbls per day, including NGLs, it now makes up 34% of global production having risen from 26% in 1990 and 33% five years ago. Meanwhile offshore gas production has risen more rapidly to the equivalent of 15.5 mm bbls per day in 2008. It was only 17.5% of total gas production in 1990 but had reached 26% five years ago and now stands at 29%.

The only region where offshore oil and gas production are together declining is Western Europe, driven by a lack of new prospects in the North Sea, which is responsible for the bulk of the region's production. However, gas production on its own is forecast to rise a little as a result of continued growth from Norway.

North American offshore oil and gas production are forecast to rise slowly after a dip in the last few years, especially affected by hurricane damage in the Gulf of Mexico. This rise will mostly result from new output from the deep waters compensating for declining production from shallow waters in the Gulf of Mexico. However Eastern Canada, California and Alaska all make a small contribution and have longer term growth potential.

The Australasian, Latin American and Asian regions are showing fairly strong growth of both oil and gas production. In Latin America this is primarily driven by rising deep water output from the Campos Basin (and eventually the Santos Basin) in Brazil, partly offset by declines in oil production off Mexico. New gas output, rather than oil, will dominate future activity in many countries in Asia and across the North West Shelf of

Australia, both from shallow and deep waters. Increased oil production from all countries bordering the South China Sea, but especially China itself, is also important, even though many other regions are in slow decline.

In the Middle East fast rising output is expected after a dip in oil production in 2009 and 2010, due to restrictions by OPEC. Future rapid expansion from the Persian Gulf will result from a boost in development activity that began a few years ago, mostly directed at fields discovered many years ago, especially in Qatar and Saudi Arabia. This region is fast becoming one of the leading suppliers of offshore gas on a par with the North Sea. The Persian Gulf is already a leading producer of offshore oil.

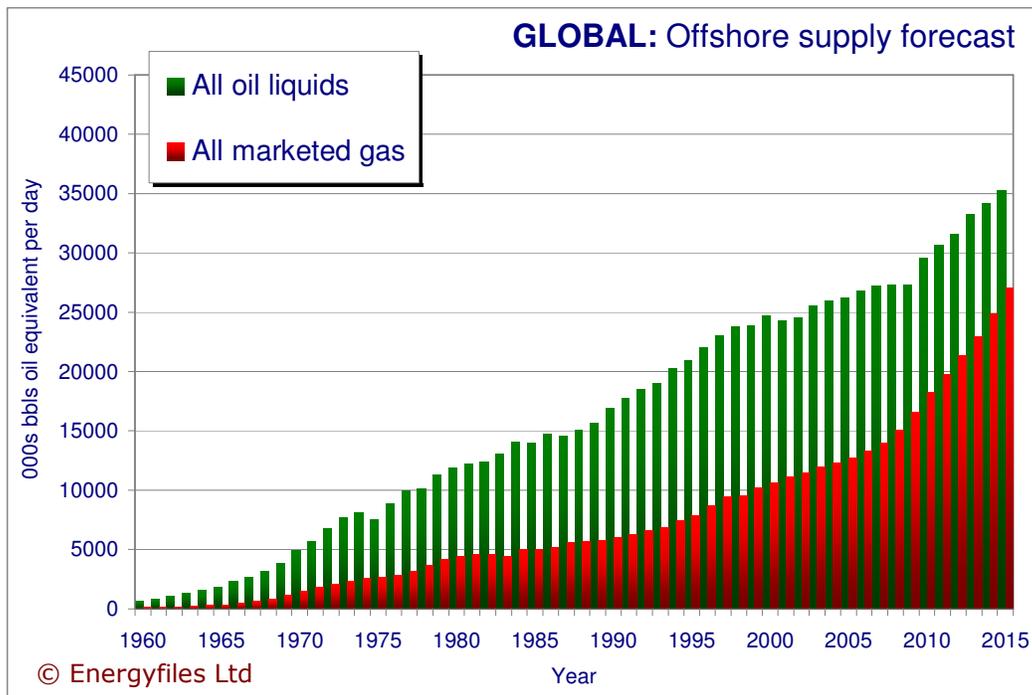


FIGURE 1: OFFSHORE PRODUCTION 1960 to 2015 © Energyfiles Ltd  
Source: 'Energyfiles Global Databases'

In Africa deep water oil developments in West Africa, especially in Angola and Nigeria, are primarily responsible for rising oil production, although many other countries contribute substantial volumes. Outside of Egypt, marketed gas production from offshore Africa has hardly begun, but rapid growth is forecast as a result of new LNG plants and an improved domestic market.

Finally the offshore seas adjacent to the Former Soviet Union (FSU) are also showing steady growth in both oil and gas production, especially from newly developed fields in the Caspian Sea in Azerbaijan, and off Sakhalin Island in Russia. Substantial rises are forecast over the longer term, albeit from a low base, as new giant projects come onstream in the Caspian Sea of Kazakhstan and Russia.

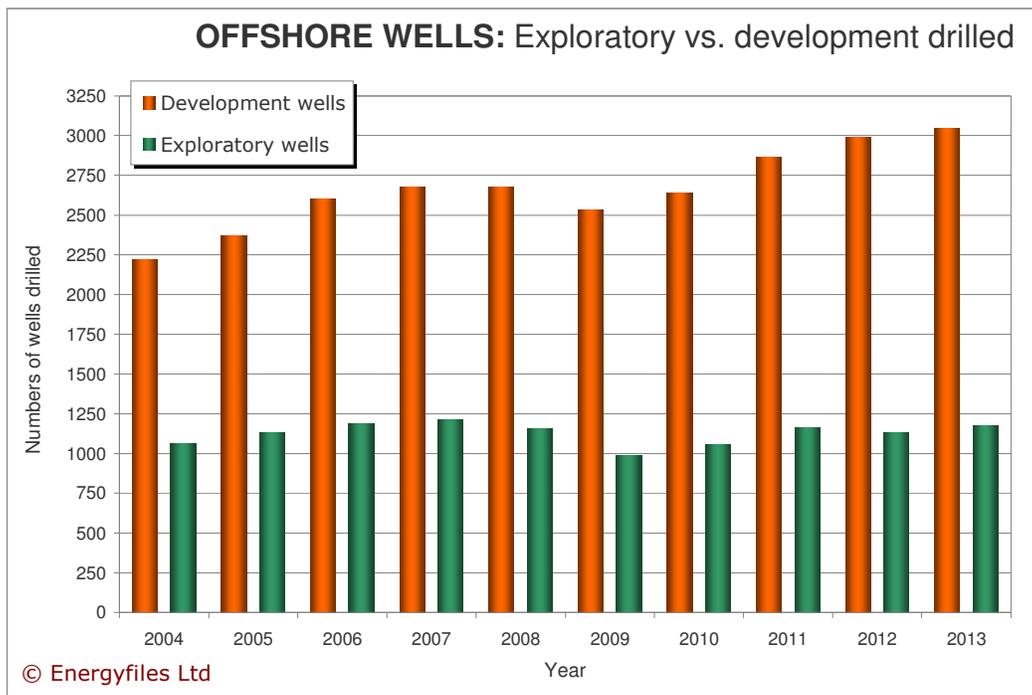
**WORLD OFFSHORE DRILLING**

Global drilling is forecast to rise 6% over the period 2009-2013 compared with 2004-2008, despite a sharp decline in 2009. Approximately 18,300 offshore wells were drilled over the last five years. Numbers picked up in 2004 as the oil price rose, reaching a peak in 2007, before dropping slightly in 2008. The forecast is of a decline in 2009, followed by consistently rising numbers including a sharp jump in 2011, to total nearly 20,000 over the period.

Shallow water exploratory drilling, was on a declining trend from 2000 to 2003 due to a lack of opportunity, followed by a modest price-led resurgence, especially in 2006 and 2007. Drilling levels declined again in 2008 and this is forecast to continue through 2009, followed by a period of recovery and then a flattening off. Shallow

water exploratory drilling levels are not expected to return to their 2007 peak although there may be brief periods of price and technology-led recoveries.

Meanwhile deep water exploratory well numbers have grown more rapidly, supporting total exploratory drilling levels. By 2013, deep water wells are expected to reach 40% of all exploratory wells. The steady growth is a result of new ultra-deep water targets becoming increasingly viable, as the capability of deep water production systems is improved, giving additional encouragement to explorers to take these expensive risks. After 2011, however, there will be few remaining options to locate substantial reserves in shallow or deep waters except in exceptionally remote areas such as the Arctic, environmentally sensitive areas and within the distant reaches of the South China Sea and Atlantic Ocean. Such drilling will have to rely on much higher oil prices than in early 2009.



**FIGURE 2: OFFSHORE WELLS 2004 to 2013** © Energyfiles Ltd  
 Source: 'The World Offshore Drilling and Spend Forecast 2009-2013'

With surging oil prices, shallow water development drilling grew rapidly in 2005 and 2006, before flattening off in 2007 and 2008. A decline is now forecast followed by returning growth as many of the delayed projects of 2009 are restarted. Growth would be even more marked if not for better, more productive, well bores allowing fewer wells per field.

Total development drilling levels will be supported by rapid growth in deep water drilling from 2010, especially in West Africa and Brazil, so that numbers will continue to increase rapidly with the big deep water discoveries of recent years, some of which have been delayed, coming onstream by 2013.

**WORLD OFFSHORE SPENDING**

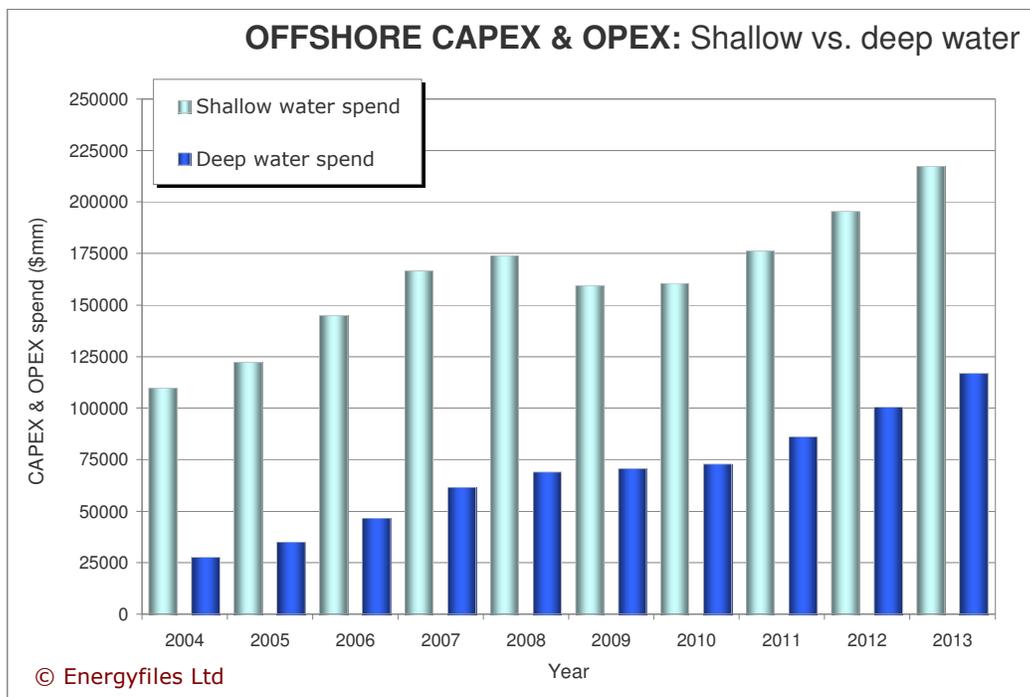
Global offshore operating expenditure (Opex) has been increasing rapidly at between 10% and 15% each year due to the combined effect of additional production volumes and inflation. It had reached an estimated \$95bn by 2008. However a slight drop in expenditure is forecast for 2009 followed by a modest increase in 2010. After 2010 Opex is expected to escalate, achieving year-on-year growth rates to match those seen before the 2008 upheaval in the market.

The biggest decline in 2009 is expected in the Middle East, but conversely the biggest growth at the end of the period will also be located here, almost entirely as a result of new production from the Persian Gulf. Large increases in offshore oil and gas output are expected but in this relatively low operating cost environment spends are rather modest in comparison to the other major regions.

Western Europe (mainly the North Sea) will also witness a substantial decline in 2009 and probably also in 2010. Subsequent growth is expected to be just a few percent each year. Western Europe, with its harsh North Sea climate and high labour costs, currently requires more Opex than any of the other regions. However, declining oil and gas output from its rapidly depleting old fields in all regions outside central and northern Norway is reducing the need for additional operating cost overheads.

Conversely spending is expected to increase rapidly in Africa and Latin America where the identification and exploitation of new projects in expensive deep water operating environments, albeit in areas with lower labour costs, have resulted in a steady escalation of output and necessary expenditure. Similarly the FSU and Australasia, where costs are relatively higher, growth in Opex is expected to pick up rapidly to reach over 20% per year by the end of the period, but this is from much lower levels.

In North America Opex is forecast to dip in 2010. New output in 2009 will arise from the surge in development activity in previous years, but the activity dip in 2009 will delay projects originally scheduled for 2010. Finally in Asia escalating Opex growth is forecast, after a slow down in 2009. In many of these regions there is a shortage of new opportunities but output of both oil and gas continues to expand.



**FIGURE 3: TOTAL OFFSHORE SPENDING 2004 to 2013** © Energyfiles Ltd  
 Source: 'The World Offshore Oil and Gas Production and Spend Forecast 2009-2013'

Global offshore capital expenditure (Capex) increased rapidly in all regions up to 2007 but slowed in 2008, having reached around \$150 bn in that year. A steep decline of 8% is forecast for 2009 with a more modest decline in 2010, driven by both reduced activity and deflation. Growth is expected to recover in 2011, averaging between 10% and 15% per year up to 2013. However growth rates will not match those seen from 2004 to 2007 which averaged 20% to 25%, largely due to mushrooming inflation.

After a peak in 2006 and 2007 Western European (mainly North Sea) spending declined in 2008 and is expected to continue to decline in 2009 by as much as 25% due to deflation and cutbacks on drilling. Lack of development opportunities after that will keep Capex steady although some growth could occur at the end of the period as efforts are focussed on the development of marginal fields. Nevertheless by 2013 Western European offshore Capex is forecast to be substantially less than that of Africa and Latin America; regions that saw lower spending than Western Europe as recently as 2006.

North American Capex has stayed ahead of Western Europe. It surged in 2006 but was flat in 2007 and 2008. After a 10% decline in 2009 and a further small decline in 2010 some growth is expected to return driven by deep and ultra-deep water oil and gas field activity in the Gulf of Mexico. Meanwhile Asian Capex will also show a significant decline in 2009, and a small one in 2010, but like North America will return to growth through to 2013. A rise of around 10% a year is forecast as new developments especially proceed in deep waters, in gas projects, and in the extensive waters of the South China Sea. Overall Asia will continue to attract the largest share of Capex. Australian Capex is expected to mirror this pattern but from a much lower level with gas projects being particularly important.

Latin American spending is also forecast to decline in 2009, grow a little in 2010 and then continue to grow more rapidly after that as new mostly ultra-deep developments are identified and proceed in Brazil, and as new gas supplies are exploited. The region is expected to overtake Western Europe in 2009 and remain higher through to 2013. African spending levels surged in 2007 but are now rising more slowly. However no drop-off is forecast for 2009, although a small decline is expected for 2010 as long time-scale deep water projects originally planned for this year are delayed by a year or two. Around 5% to 10% per year growth is then expected.

In the Middle Eastern Persian Gulf, growth is expected to continue through to 2013, but from lower levels than the other major regions. Although some output restrictions are occurring, as OPEC members try to support the oil price, development activity is proceeding (albeit slowed a little), at most of the largest projects to build oil and gas capacity for the future.

Finally FSU Capex is forecast to grow faster than anywhere else, notwithstanding a small decline in 2010. Current spending is relatively low, but many new projects are expected to need large volumes of spend in the Caspian Sea, especially in Kazakhstan, and eventually in the Arctic Seas off Russia.

## **WORLD OFFSHORE OUTLOOK**

The 2008 oil price spike had a huge effect on oil demand in countries where oil prices are not fixed or subsidised. Supply, including shut-in (forced or otherwise) supply in Saudi Arabia, Nigeria and elsewhere is now well above demand. Meanwhile, gas supplies are also ample, although regional imbalances remain with some markets in Europe, North America and Asia, poorly connected to supply sources in Central Asia, the Middle East and North Africa. Major new gas projects, from being certain money earners, have suddenly become commercially risky.

There have been severe repercussions in prices for offshore services. In early 2008, high oil prices and a global shortage of drilling and development opportunities had ensured that even the most expensive projects went ahead. However, costs had increased dramatically. For example in 2008, a typical shallow water exploratory well in the North Sea could cost over \$30 million; a price that had nearly doubled in a decade, whilst the growing number of expensive deep water wells elsewhere was making actual inflation in spending even greater. In 2009 we have across-the-board deflation in prices and delays in both shallow and deep water projects.

The question right now is; how long will this last? Historically, global economic recessions have led to declining energy demand, but the resultant lower prices have soon led to a recovery in demand and then prices, especially as OPEC has acted to rein in output to tighten supply. Thus in early 2009 the supply/demand balance for oil had already stabilised, despite the worsening recession, with the oil price settling at \$70 for a period, double what it was 6 months previously. For the offshore industry the numbers point to a return to stability in 2010 and, in 2011, a return to growth is forecast.

With or without the downturn there remains a global shortage of good prospects to drill and develop except in extreme environments. New offshore oil supplies outside deep waters and the Persian Gulf are scarce whilst output is declining from almost all the older producing regions. The industry must explore and spend in every far-flung part of the world. Decisions on where to go and what equipment to invest in are as critical as ever.

#### THE REPORTS

This article is adapted from an earlier one, focussing on the drilling industry. *"The World Offshore Drilling and Spend Forecast 2009-2013"* was published in April and *"The World Offshore Oil and Gas Production and Spend Forecast 2009-2013"* in August 2009. Separately or together they provide overviews of future prospects for offshore drilling and offshore production, quantitatively and qualitatively forecasting world spending by region and type of activity. The reports include essential information for decision-makers in oil companies, the contracting and supply industries, and government departments.

#### **Energyfiles**

Michael has spent over 25 years working in the oil and gas industry. His interest in energy and activity forecasting was stimulated nearly two decades ago whilst working in the Middle East. Here he observed the rapid rise and fall of an upstream business and realised how the scarcity of low cost drilling prospects was influencing production and spending even then. He is now Chief Executive of Energyfiles where he has developed a detailed forecasting service. Energyfiles works closely with Douglas-Westwood.