Global upstream spending hits new heights

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As 2011 draws to a close, capital spending in the global upstream industry has fully emerged from the dark days of 2009. The recovery has kicked on strongly and global capital spending will reach a new record high. The annual total will be close to US$450bn (billion) – US$35bn higher than in 2010, and over US$25bn above the previous record in 2008. If this rate is maintained, annual upstream investment could reach US$500bn by 2013.

North America sets the pace

High levels of investment are being implemented across most of the world's oil and gas sectors. Many sectors and companies are planning spectacular growth, whilst there are few countries where investment has slowed. There are many reasons for this restoration of investor confidence, although three are particularly strong:

- Growing confidence that the oil price will remain at or above US$80 a barrel (/bbl) in the medium and long term
- Improving value propositions for a range of unconventional resource plays, broadening the range of opportunities for international oil and gas companies
- Rapidly increasing demand for materials and services and the return of cost inflation

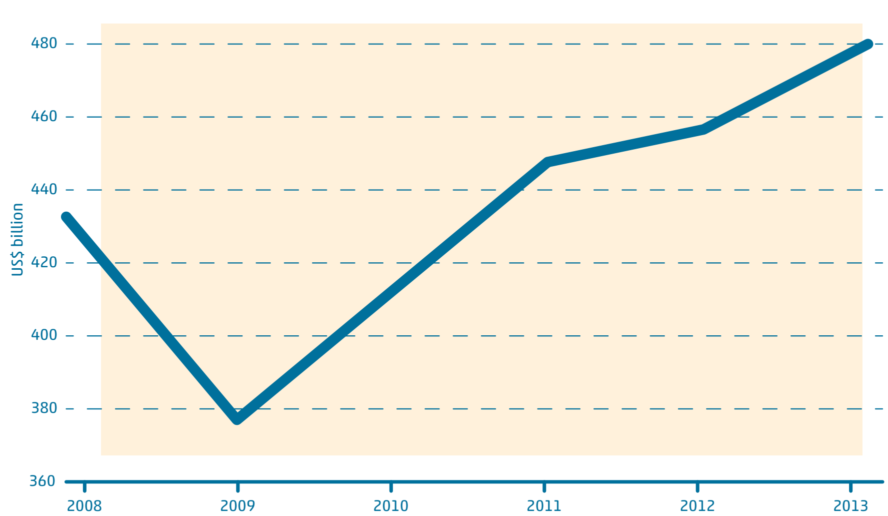
The onshore US Gulf Coast region, especially the liquids-rich Eagle Ford Shale in south Texas, is the largest single sector of activity, with planned upstream investment of around US$140bn over the next four years. And the Gulf Coast experience is repeated across most of North America. Total upstream capital investment in Canada and the US will be around US$600bn between 2011 and 2014 – up from US$480bn in our previous forecast. A key feature in this remarkable turnaround has been the restoration of Canadian Oil Sands to the prominence it enjoyed before the economic crisis. Several giant projects are under construction, in parallel with huge commitments to current production and facilities de-bottlenecking.

The rise of unconventionals

The major shift in industry spending trends in the past five years has been the rapid growth in a range of unconventional gas and oil resources, primarily in North America. Oil sands and coalbed methane have been prominent parts of the North American industry for many years, but shale gas and shale oil have taken centre stage more recently.

The huge impact of the unconventionals sector is illustrated by its share of global upstream spending. Ten years ago, the combined contribution from unconventional plays was less than 10 per cent of global expenditure, primarily in coal bed methane and oil sands. Now, in the period from 2011 to 2014, they will account for over a third of global upstream investment. And it is a pattern that looks set to continue, as the opportunity set for international companies in conventional, onshore and shallow-water reserves remains constrained by a range of political and economic factors.

Figure 1 - Actual and planned global upstream spending*, 2008-2013



* Future development capital expenditure in 2011 real terms. Exploration and appraisal spend not included.

Source: Wood Mackenzie Corporate Analysis Tool and Upstream Service

Majors and NOCs lead the way

ExxonMobil has the largest capital spend of all oil and gas companies in 2011, at around US$22bn, and is planning to continue increasing investment over the next few years. Even so, it will be run close in 2012 and 2013, by Chevron and Petrobras. Chevron has several major projects under development in Australia, the Gulf of Mexico and US Lower 48. Its total upstream spending could exceed US$25bn by 2013. Several of Petrobras' giant oil discoveries in the Santos Basin should be progressing through development in a similar timeframe and its annual capital expenditure could reach US$28bn by 2014.

Most of the larger oil and companies are planning high levels of capital spending in the next few years. This reflects an increased expectation that, whilst oil prices may fall back from current levels, they are likely to remain at or above US$80 per barrel. This outlook provides confidence in the value proposition for a wide range of unconventional developments, including oil sands, shale oil, shale gas and tight gas. Most major international companies have expanded their portfolios in the past three years to develop a higher representation in unconventional resource themes.

National oil companies (NOCs) and governments own around 67 per cent of the world's oil and gas reserves and are responsible for over 55 per cent of production. Five of these (Saudi Aramco, Gazprom, Qatar Petroleum, NIOC and PDVSA) account for cumulative reserves of around 1.2 trillion barrels of oil equivalent (boe) – more than 40 per cent of the global total. Even the largest international companies fall far short of this scale – we estimate the combined reserves of ExxonMobil, Shell, BP, Chevron and Total at around 244 billion boe (on a working interest basis).

Despite this prominence in reserves and production, NOCs and governments proportionately spend far less on upstream development than the international industry – accounting for just over one-third of the global total. There are many reasons for this apparent inconsistency:

• Some of the most prolific NOCs (Saudi Aramco, Qatar Petroleum, Iraqi Government, and KPC) own the world's lowest-cost oil and gas reserves. Their development costs are much lower on a unit basis than in other parts of the industry.

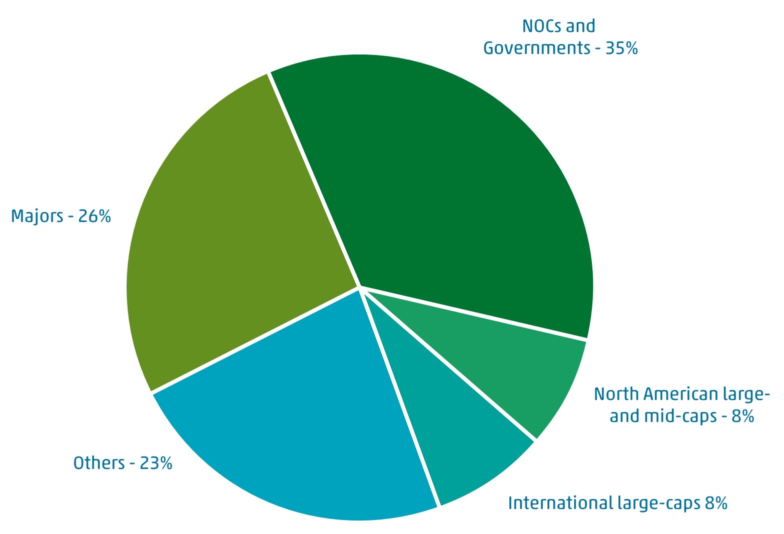
• Development costs for the international industry are getting higher; as the constraints on access to conventional reserves cause companies to increasingly pursue new reserves in deepwater or unconventional oil and gas.

• While many NOCs and governments continue to spend proactively to maintain or expand their production capacity, others have under-invested domestically for many years, with capital availability dictated by state budgets.

• Production capacities in some NOC territories are in terminal decline and the NOCs have not been able to replenish their investment options outside their domestic industry.

The highest-spending NOCs are those with the highest-cost reserves, in the early stages of development. Over the next five years, Petrobras and PetroChina have by far the highest capital budgets. Both companies have a significant international presence, but most of their development spending – 91 per cent and 95 per cent respectively – is on their domestic portfolios. Their assets are dominated by technically-challenging, high-cost reserves. These are deepwater reserves in the case of Petrobras, while

Figure 2: Share of capital spend* by company type



* Cumulative upstream development spending for the period 2011-2014

Source: Wood Mackenzie Corporate Analysis Tool and Upstream Service

PetroChina is developing a range of deep and difficult reservoirs in its home territory.

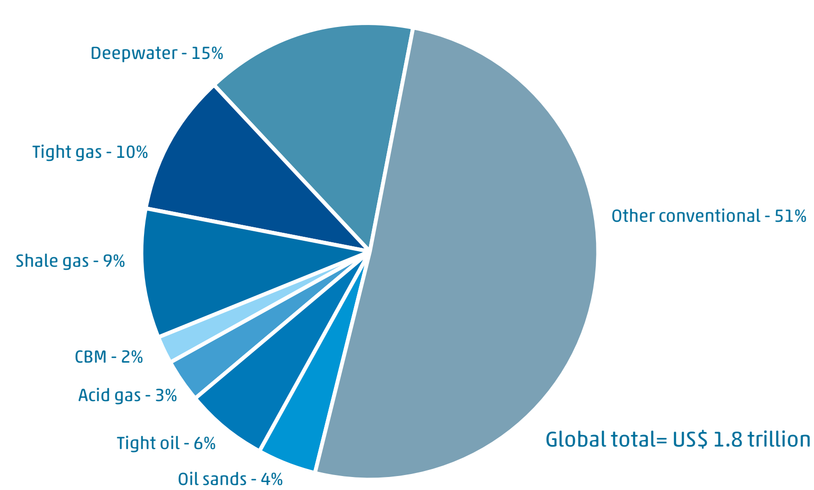
The cost of new production capacity in the Middle East has been rising steadily over the past 20 years, as the shallower, higher quality reservoirs have been depleted and new developments focus on deeper, poorer quality reserves. We estimate that the capital cost of the next phase of developments in the major producing countries of Middle East OPEC will be between US$2/boe and US$10/boe. This is many times higher than in the past, but these are still amongst the lowest cost oil and gas reserves in the world today. This is confirmed by the low cost of new incremental production capacity for Saudi Aramco, NIOC, KPC and the Government of Iraq, even by comparison to their NOC peers.

Costs are on the rise again

There is growing evidence that the cost of services and manpower is increasing in response to the rapid growth in development activity. Renewed cost inflation is now evident in most producing areas, although there are significant sectoral and regional variations. The most obvious impact at this stage is in Australia and Canadian Oil Sands, where the proliferation of development approvals has placed unprecedented demands on fabrication capacity, materials and labour. Capital costs in these sectors have increased by at least 10 per cent in the past year, and by considerably more for specialist equipment and manpower.

Another area where demand is putting pressure on supply is deepwater. Activity is steadily recovering in the Gulf of Mexico, whilst aggressive development plans have been maintained over the past few years, in Australia, Latin America and West Africa. Demand for deepwater rigs, facilities and services remained high, despite the economic crisis and the post-Macondo moratorium. Current evidence suggests →

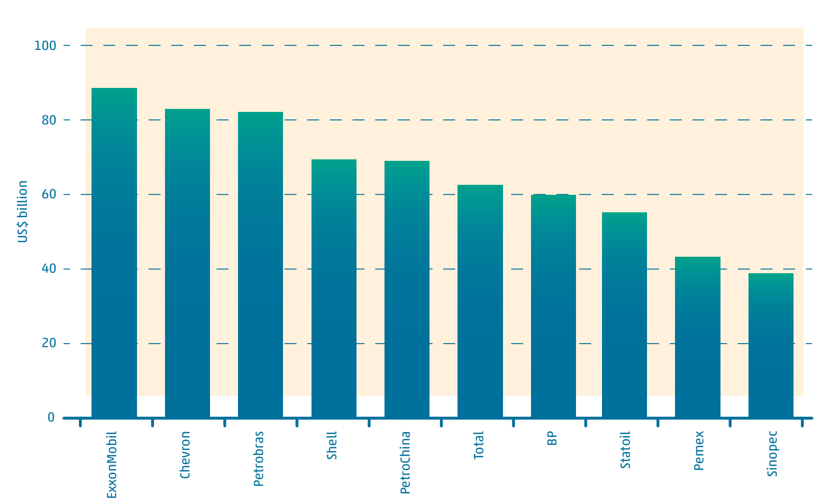
Figure 3: Global distribution of upstream capital spend* by resource theme



* *Cumulative upstream development spending for the period 2011-2014*

Source: Wood Mackenzie Corporate Analysis Tool

Figure 4: Top ten companies by planned capital investment* 2011-2014



* *Upstream development spending, not including exploration and appraisal costs, capitalised interest, non-integrated LNG projects or investments in equity subsidiaries*

Source: Wood Mackenzie

that overall development costs for deepwater projects have risen by between 5 and 10 per cent in the past year.

There is less evidence of extreme cost inflation in shallow-water and onshore provinces, where demand from new projects is lower. But some areas are particularly tight. In the US Lower 48, the flood of investment into tight oil plays has taken up all of the 'slack' that had developed in the service sector in the aftermath of the economic crisis. Equipment and personnel required for 'fracking' wells are back in high demand. These demands are unlikely to ease over the next few years and cost inflation for these services is expected to run above 5 per cent.

Clouds on the horizon

The economic crisis of late 2008 shook the foundations of the global upstream business. Many higher cost capital projects were delayed, shelved or abandoned, and annual spend dropped by US$50 bn. Now, just 30 months later, the industry has proven remarkably resilient. Plans have been restored and expanded and many new projects approved, in the presumption that demand and commodity prices will remain relatively robust over the longer term.

For many years, international companies have pursued ever more challenging and costly sources of oil and gas, in both conventional and unconventional sectors. Most of the major NOCs are now making greater demands on their state budgets, seeking to produce from deeper and poorer quality reservoirs, in progressively more challenging locations. As the industry strives to ensure that supply keeps pace with demand, upstream spending seems set on a relentless upward trajectory, producing more barrels and cubic feet every year, at a steadily increasing cost per barrel.

But there are significant risks and uncertainties which threaten this positive view. The macroeconomic outlook has deteriorated markedly since the summer of 2011. Europe could be on the brink of recession and the US is projected to enjoy only weak economic growth. This outlook could worsen further if European sovereign debt issues turn into a full blown banking crisis. The investment plans of the upstream industry are ambitious and encouraging, but they could yet be undermined by the fragility in the global economy. ■

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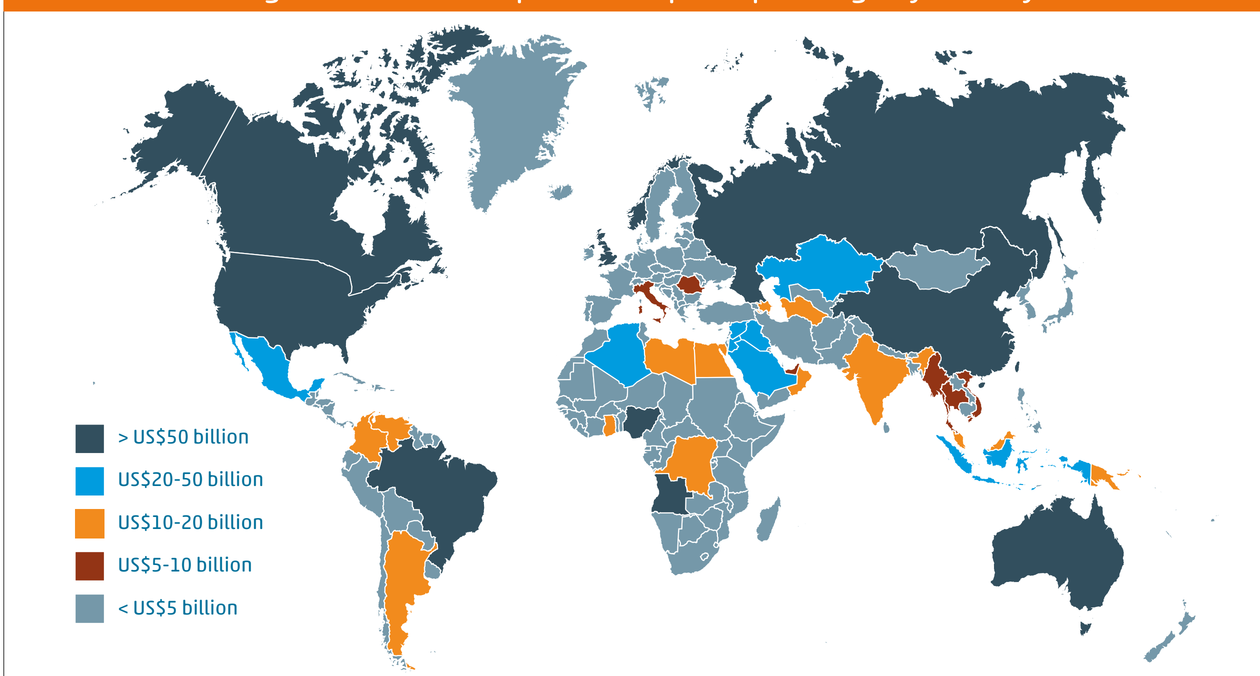
Figure 5: Planned upstream capital spending* by country



** Cumulative upstream development spending for the period 2011-2014*

Source: Wood Mackenzie Corporate Analysis Tool and Upstream Service