The oil and gas industry: Coping with new market realities

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The energy landscape has changed dramatically since the last World Petroleum Congress of 2014 in Moscow. Oil prices have lost more than half of their value; international gas prices have slumped; upstream investment in oil and gas projects has shrunk; climate change has moved higher up the global agenda and renewable energy deployment has accelerated substantially.

The 22nd World Petroleum Congress, to be held in Istanbul, Turkey, in July 2017, will provide energy policy makers and industry leaders with an opportunity to reflect on these major changes, and try to look beyond the short-term fog of uncertainty to chart a course toward a more stable and balanced future oil market, and discuss the challenges for the industry. The IEA has always maintained a close collaboration with the petroleum industry, and the WPC provides an excellent forum for discussion and reflection on developments in the energy market and their significance.

Upstream capex cuts reshape the geography of the oil markets

When the WPC last met in 2014, oil had been trading at an average price of over US$100 per barrel (bbl) for three years. By early 2016, oil prices had fallen below US$30/bbl, their lowest level since 2003, as increased supply from members of the Organisation of Petroleum Exporting Countries (OPEC), resilient production of light tight oil in North America and sustained output in Russia, Brazil, the North Sea and elsewhere weighed heavily on the market.

Upstream oil and gas investment 2010-2017

Source: IEA

The response of the oil and gas industry to the price collapse has been dramatic. According to the IEA's World Energy Investment 2016 report, investment in the oil and gas sector fell by 25 per cent in 2015 and is set to drop a further 24 per cent in 2016, a reduction of more than US$300 billion. This is an unprecedented decline, even when accounting for the fact that the plunge in oil prices triggered massive cost deflation in the upstream oil and gas sector in 2015 and 2016. Prices for services and equipment in the oil and gas sector fell by about 30 per cent in just two years, following on the heels of a doubling in costs over a much longer time period between 2000 and 2014.

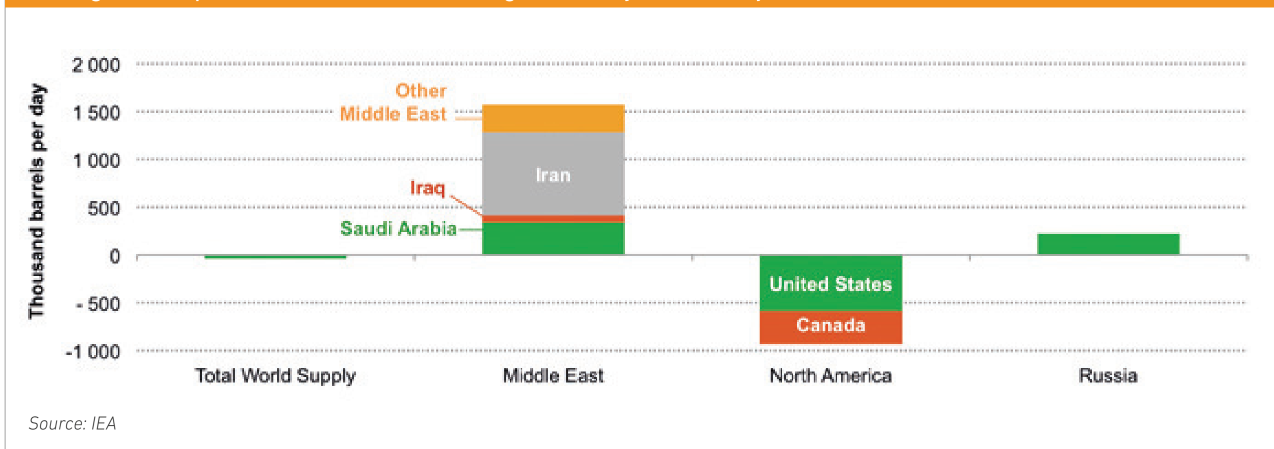
The oil and gas industry has proved itself to be highly responsive and dynamic in its reaction to abrupt changes in market conditions. This stands in sharp contrast to a common perception of the sector as "rigid" or "conservative". Capital and operating costs have been dramatically reduced, not only as a result of squeezed margins for contractors and service companies, but also due to significant operational and technological efficiencies. The IEA estimates that around two-thirds of the headline reduction in upstream spending seen in 2015 and 2016 was due to lower costs, with reduced activity levels accounting for the remainder.

Of course, the oil and gas industry is cyclical in nature and inflationary pressures may be on the horizon. But in the absence of a significant increase in oil prices in the short term, the effects of cost deflation and efficiency improvements will likely keep overall investments depressed in 2017. If investment in upstream oil and gas even declines slightly in 2017, it would mark the first time in history that we have seen declines in upstream spending for three consecutive years.

The scale of the spending cuts is large enough to have already had a measurable impact. New oil discoveries in 2015 were at their lowest level for 60 years. At 6.5 billion bbl, the total resources allocated to fields that were given development approval in 2015 were the lowest ever in a single year since before the 1960s. Preliminary estimates for 2016 indicate a continuation of this trend. Unless activity picks up quickly, medium-term oil output will be affected.

The transformation of oil market conditions sets the stage for a new "drama". In the past few years, oil supply growth has largely been dominated by once-declining producers such as the US, thanks to the rise of light tight oil. Now, low-cost regions are again in the driving seat of global oil production, mainly as a result of resilient activity levels in the Middle East and Russia. Over the past year, while global oil supply has been nearly flat,

Change in oil production in selected regions (July 2015-July 2016)



Source: IEA

Middle East oil production has expanded by more than 1.5 million barrels a day (mb/d) to a new historical record of 32 mb/d. At 35 per cent of global production, the Middle East's share is at a level not seen since the 1970s. At the same time, Russia has expanded its oil production despite international sanctions and is close to its highest levels in the post-Soviet period. Together, the Middle East and Russia represent almost half of the world's oil supply, while oil output in North America has declined by more than 0.9 mb/d as upstream investment has more than halved in just two years.

Alongside a changing geography of production, investments by key players in the market have also rebalanced. Sustained investment activities in the Middle East and Russia have raised the share of investment by National Oil Companies (NOCs) to an all-time high of 44 per cent of global upstream investment. Investment by the International Oil Companies (IOCs) declined by about US$60 billion, as spending in the offshore sector – an area where international companies lead in terms of technological capacity and production – was hit the hardest.

Another twist in the storyline comes from the demand side. The geography of global oil consumption is changing rapidly as trade shifts from West to East. Between 2010 and 2015, oil consumption in IEA countries, once the engine of global oil demand growth, declined by more than 0.5 mb/d while OPEC members increased their consumption by 1.3 mb/d. According to the IEA World Energy Outlook 2015, the centre of gravity of global oil demand is set to continue shifting eastwards. India, China and Middle East could account for all of the net increase in global oil demand over the next two decades.

The result of resilient oil supply in the face of low prices and lower demand growth has been a massive buildup of crude and oil product inventories and a lower-for-longer outlook for oil prices in the near term. However, this should not be cause for complacency about oil market security. Lower oil prices bring benefits to consumers today but shrinking investments can lead to supply shortfalls and future price spikes. A balance needs to be struck that ensures continued investment in upstream oil and gas projects in order to satisfy the expanding levels of demand seen in our scenario. Let's not forget that around 80 per cent of global upstream annual investment is needed just to keep output at current levels, by compensating for declining production from mature fields

Two years of turbulence in the oil and gas sector have led to multiple changes. The bottom line is that while the challenges facing the industry have not diminished, the resulting restructuring heralds opportunities for resilient players. Climate change is now an established feature of the policy landscape and the pressure for responsible resource development will only increase. Oil's dominance in the transport sector in the medium term may be undisputed, but the timeframes in this business demand a longer-term outlook. A constructive dialogue about future scenarios for both supply and demand is as important as it has ever been.

Turkey, host of the forthcoming WPC gathering, plays an important role as a transit route for oil and gas from the Middle East and Central Asia and as a link between East and West. As such I believe it is therefore a very appropriate venue for the WPC theme "Bridges to our Energy Future."