The International Energy Agency (IEA), an autonomous agency, was established in November 1974. Its primary mandate was – and is – two-fold: to promote energy security amongst its member countries through collective response to physical disruptions in oil supply, and provide authoritative research and analysis on ways to ensure reliable, affordable and clean energy for its 29 member countries and beyond. The IEA carries out a comprehensive programme of energy co-operation among its member countries, each of which is obliged to hold oil stocks equivalent to 90 days of its net imports. The Agency’s aims include the following objectives:

- Secure member countries’ access to reliable and ample supplies of all forms of energy; in particular, through maintaining effective emergency response capabilities in case of oil supply disruptions.
- Promote sustainable energy policies that spur economic growth and environmental protection in a global context – particularly in terms of reducing greenhouse-gas emissions that contribute to climate change.
- Improve transparency of international markets through collection and analysis of energy data.
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- Find solutions to global energy challenges through engagement and dialogue with non-member countries, industry, international organisations and other stakeholders.

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EXECUTIVE SUMMARY

In last year’s Report, we noted that we were living through the first essentially free market in oil seen in modern times. A year later however, market management is back. The great experiment that started at the end of 2014 with OPEC’s historic decision to pursue a market share strategy has ended and we are now coming to terms with the most comprehensive output reduction agreement seen since 2008.

The agreement, and its potential implications forms the backdrop of this year’s five-year oil-market forecast, now called Market Report Series: Oil 2017 (formerly the Medium-Term Oil Market Report). We obviously can’t say how long it will last because of the complex inter-action between judgements of oil market fundamentals and political factors that lie behind the deal. But we do know that the decision by OPEC and eleven non-OPEC producers to cut production for the first six months of 2017 has led to an increase in oil prices. Until the agreement was struck prices threatened to return to the levels seen in early 2016 when Brent crude oil traded for a time below USD 30/bbl. A repeat of such low prices would have been unwelcome for all oil producers whether they were involved in the agreement or not, although clearly it would have provided a shot in the arm for consumers.

The fall in oil prices upended the budget assumptions of all the producers, not just national companies entrusted with social and political obligations at home, but also their peers in the private sector. For OPEC countries, export revenues slumped to an estimated USD 450 billion in 2016, down from USD 1.2 trillion in 2012, causing major budgetary strains and in some cases making difficult political situations even worse.

Global oil and gas upstream investment fell by 25% in 2015 and by another 26% in 2016, affecting the major oil companies and smaller independents alike. In 2017 there are modest signs of recovery led by higher investment in the US light tight oil region. Alongside falling prices, costs have dropped significantly: we estimate that global upstream costs declined by 15% in 2015 and 17% in 2016. For their part, US light tight oil (LTO) producers saw even more striking cost reductions of 30% in 2015 and 22% in 2016. This also gives a clear indication that many are capable of positioning themselves to raise production in a lower price environment.

Another period of falling prices could have further pushed back critical investment decisions, and threatened the production recovery needed in the second half of our forecast. As it stands, when investment does recover, it will serve an industry that is far leaner and fitter than it ever was and that will be able to deliver more with less.

While the ultimate success or failure of the production agreement cannot be judged for some time, it is evident that the output cuts, totalling 1.8 mb/d if fully implemented, are taking place just as production from the non-OPEC sector as a whole, led by the US, is actually recovering – after falling in 2016 for the first time since 2008 – and when stocks of crude oil and products are at record highs. This scenario of ample supply, even as output cuts are implemented, explains the very flat crude-oil price futures curve on which our five-year forecast is based.
The price outlook is not static, of course, and towards the end of the period there is relatively little liquidity to aid price discovery. But what it does tell us is that investors do not expect oil supply to fall short of demand, even though the investment climate remains poor. We have examined worldwide projects and assessed the likelihood of their completion. Our analysis suggests that, unless additional projects are given the green light soon, towards the end of our forecast horizon we will be in a 104 mb/d market and the call on OPEC crude and stock change rises from 32.2 mb/d in 2016 to 35.8 mb/d in 2022. With the group forecast to add 1.95 mb/d to production capacity in this period, this implies that available spare production capacity will fall below 2 mb/d.

This suggests that the oil market will tighten and price expectations will rise. As today’s overhang of surplus stocks is eroded, the main issue is whether or not investment recovers, and whether governments and companies take the current confidence that there is a floor under oil prices due to production management and bring forward new projects. If they do, then we can add to the known projects list for OPEC and non-OPEC countries, and concerns about a low spare capacity cushion will ease, and the current futures curve will prove to be resilient. If not, then new projects will not be brought forward and the curve will take a turn upwards, though we cannot be sure how sharply prices might rise.

Looking in more detail at the demand side of the balance, the recent tendency has been for numbers to be revised upwards. This is partly due to changes to historical data that raise the baseline for our forecasts as well as colder-than-expected northern hemisphere winters and other unforeseen events. But the dramatic fall in crude oil prices from the average of USD 100/bbl that prevailed in 2011-2014 to the average of USD 50/bbl in 2015-2016 clearly had a major impact on demand growth. We have emphasised the impact on producers of low prices, but they have clearly been a huge boost to consumers of oil.

In 2015, demand grew by 2.0 mb/d, the biggest year-on-year growth since the exceptional post-financial crisis recovery year of 2010, which was followed with very robust growth of 1.6 mb/d in 2016, including unexpected growth in the mature OECD markets partly due to colder than normal winter weather and higher demand from industrial fuel users. Our outlook for demand in this report is little changed from the one we published a year ago: global oil demand is expected to grow on average by 1.2 mb/d each year to 2022.
This net global figure contains OECD demand falling by an average 0.2 mb/d per year due to long term trends in fuel efficiency standards – discussed in detail in the demand section of the report – and changing demographics. In the non-OECD countries, there is still plenty of growth potential and we expect an upside of 1.4 mb/d each year to 2022. India, particularly, is gradually becoming the focus of attention as Chinese demand growth slows. Twenty years of strong demand growth in China, fuelled by rapid industrialisation and infrastructure spending, is giving way to a slower pace as the Chinese economy moves towards a services and consumer-led structure. In the five years to 2016, Chinese demand grew by 4.8% a year, compared with growth of 5.5% in the five-year period ending in 2011. For the period to 2022, China’s demand will grow at an average annual rate of 2.4%.

Indian per capita oil consumption is just 1.2 barrels per year today, and the number is expected to reach 1.5 barrels per year by 2022. This compares to China’s 3 barrels per capita per year today, a figure expected to be 3.5 by 2022. Although a direct comparison between India and China does not take into account societal and economic differences, the overall point is valid; there is clearly still plenty of growth to come from India. Indeed, that is also probably true for transportation fuels in many other developing economies, as more families move up the income scale and buy their first car. In our forecast period, this will almost certainly be gasoline-fuelled. While the much-discussed growth in the electric vehicles fleet is a very important longer term issue for oil demand, by 2022 we estimate that only limited volumes of global transport fuel demand will be lost to EVs from conventional fuels.

This Oil 2017 market report also looks at the implications of tighter vehicle efficiency standards now being applied to trucks for transport fuel demand. Even though big savings will be achieved over time, within our five-year outlook it is a question of merely slowing the rate of growth, rather than seeing a major change to the pattern of demand. The change in marine fuel specifications due to take place in 2020, another issue affecting transport fuels growth, is also analysed in some detail in this report. Although there are considerable uncertainties around the implementation of the International Maritime Organisation’s regulations, we estimate that 0.2 mb/d of fuel consumption will be lost to the specification change and to LNG. For all these reasons, the much-discussed peak for oil demand remains some years into the future.

With oil demand growth expected to be steady, there are many issues on the supply side that shape our forecast. Perhaps the most relevant, because it is going on right now, is the pace at which LTO producers in the United States are able to turn the big increase in drilling activity we have seen in recent months into sustainable production growth. We believe that by the end of 2017, LTO production will be approximately 500 kb/d higher than a year earlier. Even in a world where oil prices do not move sustainably above USD 60/bbl, LTO production will continue to grow through 2022, adding 1.4 mb/d over the period, reflecting the enormous cost savings and efficiency improvements that have been made in what remains to a certain extent an experimental sector of the oil industry. If oil prices were to rise sharply to, say, USD 80/bbl our sensitivity analysis suggests that LTO production could rise by as much as 3 mb/d by 2022. The other countries that are expected to see their production increase significantly in our forecast period are Brazil, Canada and Kazakhstan, which will see their cumulative output rising 2.2 mb/d by 2022, reaping the rewards of investment decisions taken before oil prices declined. Total non-OPEC supplies are expected to rise 3.3 mb/d over the period.
We must acknowledge the discussion of a return to nuclear-related sanctions against Iran. At the time of writing there is no clarity on this issue and our forecast makes no assumption of change to the current arrangements. Another factor that might impact our outlook in the later years is the so-called Border Adjustment Tax that might be introduced in the US. At the time of writing however, there is little detail available on this issue and we have made no provision for it in our forecast. Likewise, we do not make any change to our numbers concerning whether the 2025 US target for a 54.5 miles per gallon fuel efficiency target might be rolled back.

Elsewhere in OPEC countries, how the situations in Libya, Nigeria and Venezuela will develop in the period to 2022 is hard to predict. Libya’s situation is the most intractable but our working assumption is that production capacity there will increase modestly. For Nigeria and Venezuela, we have made very little change to our expectations of sustainable production capacity. In any event, the bulk of the growth will come from the major producers in the Middle East, who will contribute an estimated 1.79 mb/d to the total growth in OPEC production capacity of 1.95 mb/d. Production capacity is one thing; actual production is something else and the return of output management makes this part of the market balance harder to forecast.

Having taken into account the outlook for oil demand and supply, an interesting message that emerges is the changing pattern of global trade flows. In our forecast period, net export flows from OPEC countries – incorporating growth from the main Middle East producers but declines from elsewhere - will increase by 0.5 mb/d. This is significantly less than the forecast incremental growth in export potential from Brazil and Canada of approximately 1.6 mb/d. The Middle East producers, traditionally amongst the leading suppliers to growing Asian markets, cannot alone meet the growth in Asia’s crude import requirement which will rise from 21 mb/d in 2016 to 25 mb/d in 2022 due to growth in demand and the decline in regional production. The East of Suez crude oil balance will fall further into deficit.

Evolving trade flows highlight the need for additional storage capacity. Over the past two years, a global supply overhang created trading and storage opportunities, particularly in non-OECD countries, where rising demand and import requirements have led to a build-up of strategic and commercial reserves. In this Report, for the first time, we provide an in-depth review of global storage developments to highlight where investments are being made.

In presenting our latest oil market analysis and forecast in Oil 2017, we are emphasising an important message: more investment is needed in oil production capacity to avoid the risk of a sharp increase in oil prices towards the end of our outlook period. The oil market today seems remarkably sanguine about this issue, but this feeling might not persist for too long before the realisation dawns that unwelcome price pressures might lie ahead.
This year marks a new period of oil market management by leading oil producers, who put together in late 2016 the most comprehensive agreement to limit oil output seen since 2009. The reason was to ensure that oil prices were stabilised to avoid economic dislocation in producing countries and to provide a platform for gradual growth. The agreement brought to an end a two-year free market window in which producers competed to secure outlets for their oil.

This agreement provides the backdrop to the latest IEA five-year oil market forecast, which was renamed Market Report Series: Oil 2017 (formerly known as the Medium-Term Oil Market Report). While we cannot know how long the deal will last, it provides clear trends to guide our view of the next five years.

- Oil demand is expected to grow strongly at least to 2022 with the main developing economies leading the way.
- The need for more production capacity becomes apparent by the end of the decade, even if supply appears plentiful today.
- It is not clear that upstream projects will be completed in time given the unprecedented two-year fall in investment in 2015 and 2016 although major reductions in costs will help.
- There is a risk of prices rising more sharply by 2022 if the spare production cushion is eroded.

The Oil 2017 report, which provides market analysis and forecasts to 2022, sets the scene for what promises to be a transformative period in the history of oil.