# The outlook for US oil production

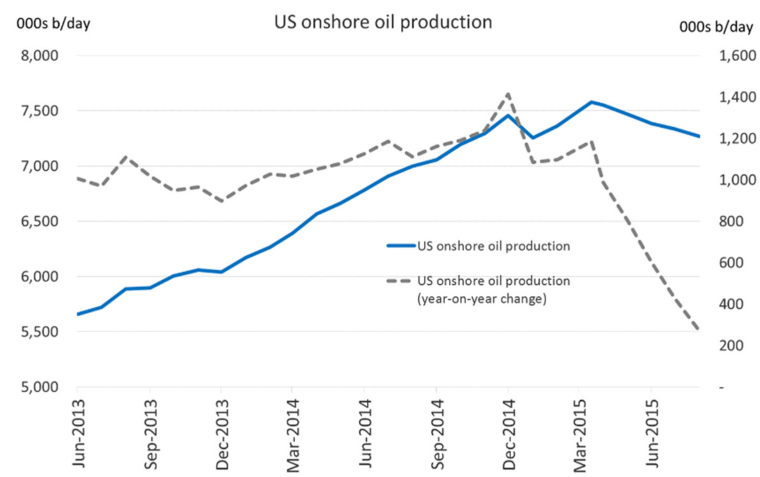
**High oil prices since 2009 incentivised the development of US unconventional oil, and high levels of this 'shale' oil have been a significant factor in causing the supply/demand imbalance in world oil markets and the subsequent collapse in oil prices. The cycle is now resetting as investments into shale collapse. This month, we provide a detailed update on how US oil production is being affected and provide a few thoughts on how it could look at the end of 2015 and into 2016.**

In total, US oil production peaked in April 2015 at 9.6m b/day, having grown at a rate of around 1.1 m b/day over the previous three years (and being almost the only non-OPEC country to grow over that period). Since April 2015, total US oil production has started to decline and most recent data shows production in August 2015 of 9.32m b/day – a decline of just under 70,000 b/day per month for the four months between April and August 2015. With four months of data behind us, it is clear that total US oil production is in a decline phase. Moreover, the rate of annual production growth has fallen to 0.49m b/day in August 2015 (versus August 2014), having been 1.55m b/day in December 2014 (versus December 2013).

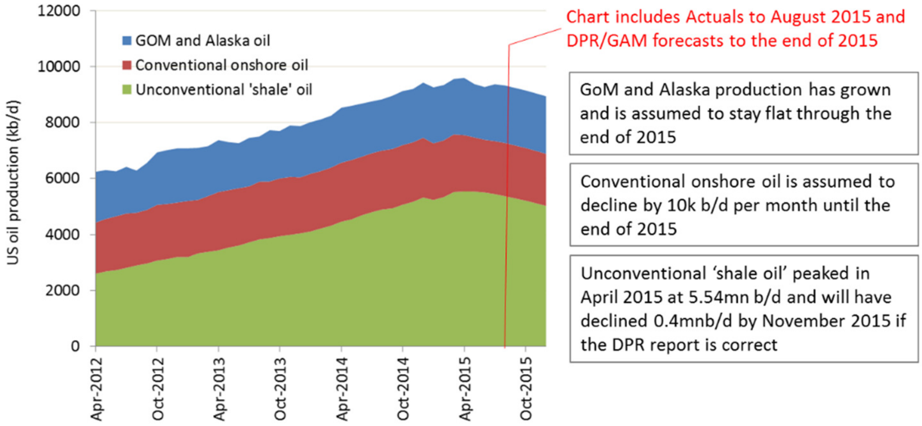
Total US oil production includes the Gulf of Mexico and Alaska, onshore conventional and onshore unconventional. Each area has a different dynamic and is worthy of individual consideration.

Dealing with the Gulf of Mexico and Alaska, we find it interesting that production from these two areas has actually been growing over the last 12 months, totalling 2.05m b/day in August 2015 (up from 1.88m b/day in August 2014). The reason for the increase (despite the declining oil price over the period) has been a steady supply of new fields starting production in the Gulf of Mexico and the fact that 'conventional' oil production is often stubbornly robust for a period of time after dramatic oil price collapses.

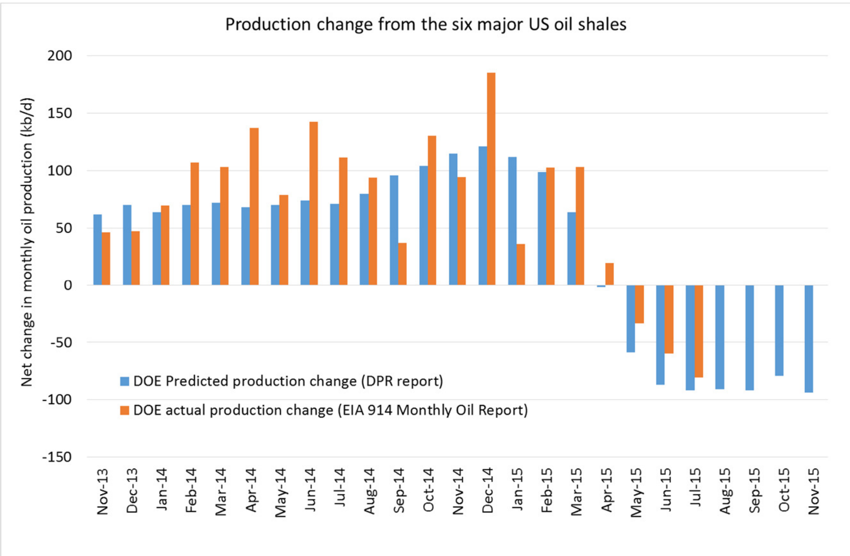
US onshore production, our area of greatest interest, was around 7.27m b/day in August 2015, down around 0.31m b/day since its peak of 7.58m b/day in March 2015. This implies a decline of around 62,000 b/day per month over that period. The annual rate of production growth has fallen very sharply indeed. Having peaked at 1.41m b/day per year in December 2014 (versus December 2013), it has now fallen to only 0.27m b/day for August 2015 (versus August 2014), as the dotted grey line on the chart here shows. It is clear that US onshore production is witnessing the greatest declines and we believe that the decline is likely to persist.




US onshore production, in turn, is made up of conventional and unconventional (predominantly shale) production. To allow us to analyse the production of these individual components, the EIA separately reports oil production from the six major US 'shale' plays, and also provides short-term production forecasts for them. The six shale plays are the Permian, Bakken, Eagle Ford, Niobrara, Utica and Marcellus, and their total production was 5.37m b/day in August 2015, having peaked at 5.54m b/day in April 2015. The decline of 0.17m b/day over the last four months equals a rate of 45,000 b/day per month. In addition, the annual rate of growth has fallen sharply, now at 0.47m b/day for August 2015 (versus August 2014) having been at 1.28m b/day in December 2014 (versus December 2013).




We must acknowledge that recent EIA data series (which runs to August 2015) is already out-of-date, and much has changed since summer 2015 when Brent oil prices were falling from $65/bl and the US oil-directed rig count was around 650. As a result, we also pay reasonable attention to the 'Drilling Productivity Report' that the EIA produces, which currently provides forecasted production for the six shale plays out to the end of November 2015. The DPR forecasts that production from the six shales will decline by an average of 83k barrels per day for the next three months (September, October and November 2015) bringing the total decline for the six shale plays from the April 2015 peak to 0.42m b/day.




While the DPR has only been in existence for a couple of years, we have found that its forecasting capability has been improving. Importantly, the DPR report correctly predicted three months in advance that US shale oil production was peaking in March/April 2015 and we attach reasonable credence to its forecasts to the end of 2015.

Pulling all this together, we have made the following three key assumptions…

- Alaska and Gulf of Mexico production stays flat at the August 2015 level
- The DPR forecast is correct to the end of November and there is another 100,000 b/day decline from the six shale plays in December
- Other 'conventional' onshore oil production continues to fall at 10,000 b/day per month

… and conclude that October 2015 will be the first month where annual total US oil production growth turns negative, and by the end of 2015 the annual production decline for total US oil production will be around 0.5m b/day. Within a few short months from now, we believe that the data will show that the only region that had been growing in non-OPEC over the last three years has now fallen into decline.

We believe that this change in US oil production is very important within the context of a global oil market which is oversupplied by somewhere between 0.5m and 1.0m b/day. With OPEC seemingly producing as much as possible, and with the lingering threat of Iran and Libya increasing production at some stage in the future, a forced reduction in US production will rapidly help to rebalance the market. We think that the supply/demand balance point will probably be achieved in the second half of 2016, but many variables could still affect this.

Thereafter, we will need an oil price which incentivises US producers to deliver enough new oil to keep the world oil market in balance. The question is: what is this price? $50 is not enough and we think $70/bl looks much more likely.

**The Guinness Global Energy team**
**1st October 2015**

**Guinness Global Energy Fund** is an equity fund. Investors should be willing and able to assume the risks of equity investing. The Fund invests only in companies involved in the energy sector; it is therefore susceptible to the performance of that one sector, and can be volatile. Details on the risk factors are included in the Fund's documentation, available on our website.

The value of an investment and the income from it can fall as well as rise as a result of market and currency movement; you may not get back the amount originally invested. Past performance is not a guide to future performance.

**Issued by Guinness Asset Management Limited**, authorised and regulated by the Financial Conduct Authority. This document is provided for information only. All the information contained in it is believed to be reliable but may be inaccurate or incomplete; it should not be relied upon. It is not an invitation to make an investment nor does it constitute an offer for sale. Telephone calls maybe recorded.

**Documentation** The documentation needed to make an investment, including the Prospectus, the Key Investor Information Document (KIID) and the Application Form, is available from the website www.guinnessfunds.com , or free of charge from:-

- the Manager: Capita Financial Managers (Ireland) Limited, 2 Grand Canal Square, Grand Canal Harbour, Dublin 2, Ireland; or,
- the Promoter and Investment Manager: Guinness Asset Management Ltd, 14 Queen Anne's Gate, London SW1H 9AA.

**Residency** In countries where the Fund is not registered for sale or in any other circumstances where its distribution is not authorised or is unlawful, the Fund should not be distributed to resident Retail Clients. **NOTE: THIS INVESTMENT IS NOT FOR SALE TO U.S. PERSONS.**

**Structure & regulation** The Fund is a sub-fund of Guinness Asset Management Funds PLC (the "Company"), an open-ended umbrella-type investment company, incorporated in Ireland and authorised and supervised by the Central Bank of Ireland, which operates under EU legislation. If you are in any doubt about the suitability of investing in this Fund, please consult your investment or other professional adviser.

**Switzerland** The prospectus and KIID for Switzerland, the articles of association, and the annual and semi-annual reports can be obtained free of charge from the representative in Switzerland, Carnegie Fund Services S.A., 11, rue du Général-Dufour, 1204 Geneva, Switzerland, Tel. +41 22 705 11 77, www.carnegie-fund-services.ch. The paying agent is Banque Cantonale de Genève, 17 Quai de l'Ile, 1204 Geneva, Switzerland.


## Guinness Asset Management Ltd

Authorised and regulated by the Financial Conduct Authority

14 Queen Anne's Gate, London SW1H 9AA
+44 (0)20 7222 5703 / info@guinnessfunds.com / guinnessfunds.com

GUINNESS
ASSET MANAGEMENT LTD