

## UK Oil Reserves, Contingent Resources and Estimated Ultimate Recovery 2015

Oil reserves include both oil and the liquids obtained from gas fields. Oil reserves are summed in the Oil Table below at different probability levels to give a range of estimates from proven to the maximum level.

The oil reserves presented below are in sanctioned fields only (i.e. fields in production or approved fields under development but not yet producing). [Last year we included probable and possible reserves for other significant discoveries where field development plans were under discussion and included possible reserves for Extended Oil Recovery (EOR) potential in the Oil Table.] This year you will find reserves for these future fields stated as zero but included in the new Table for Oil Contingent Resources.

*Note that there are also "Potential Additional Resources" (PARs) in other fields and discoveries for which there are no current plans for development. These are listed in a separate section on the website.*

Proven, probable and possible reserves for a large number of individual fields have simply been summed to give the totals shown. There is, thus, a much smaller likelihood that the true figure for total oil reserves is outside the range of estimates than when considering probabilities for an individual field.

Cumulative oil production to the end of 2015 has been added to (remaining) oil reserves to give the estimated ultimate recovery figures.

Contingent Resources, Reserves and Estimated Ultimate Recovery in the Oil Tables below are presented in metric units (million tonnes) to facilitate comparison with other energy resources and the inclusion of natural gas liquids. The UK Oil Reserves figures are also available in "field units" in Appendix 1 where we have used the approximate conversion factor of 1 tonne of crude oil = 7.5 barrels.

### Estimates of UK Oil Reserves and Ultimate Recovery at 31 December 2015<sup>(1)(2)</sup>

[figures in brackets for end 2014]

Oil Reserves units - million tonnes	Proven	Probable	Proven & Probable	Possible	Maximum <sup>(3)</sup>
Fields in production or under development <sup>(4)</sup>	349 [374]	217 [255]	566 [630]	161 [312]	727 [942]
Other significant discoveries where development plans are under discussion	0 [0]	0 [86]	0 [86]	0 [32]	0 [118]
<b>Total Oil Reserves in million tonnes<sup>(4)</sup></b>	<b>349 [374]</b>	<b>217 [342]</b>	<b>566 [716]</b>	<b>161 [344]</b>	<b>727 [1,060]</b>
<b>Cumulative Oil Production to end 2015<sup>(5)</sup></b>	<b>3,668 [3,623]</b>				
<b>Estimated Ultimate Recovery in million tonnes</b>	<b>4,016 [3,997]</b>	<b>217 [342]</b>	<b>4,234 [4,339]</b>	<b>161 [344]</b>	<b>4,395 [4,683]</b>

[Please note "Other significant discoveries where development plans are under discussion" were counted as Reserves for end 2014 but are shown as zero this year.]

## Estimates of UK Oil Contingent Resources at 31 December 2015<sup>(1)(2)</sup>

Oil Resources units - million tonnes	Lower	Best	High
Other significant discoveries where development plans are under discussion	62 [0]	134 [0]	268 [0]

[figures in brackets for end 2014]

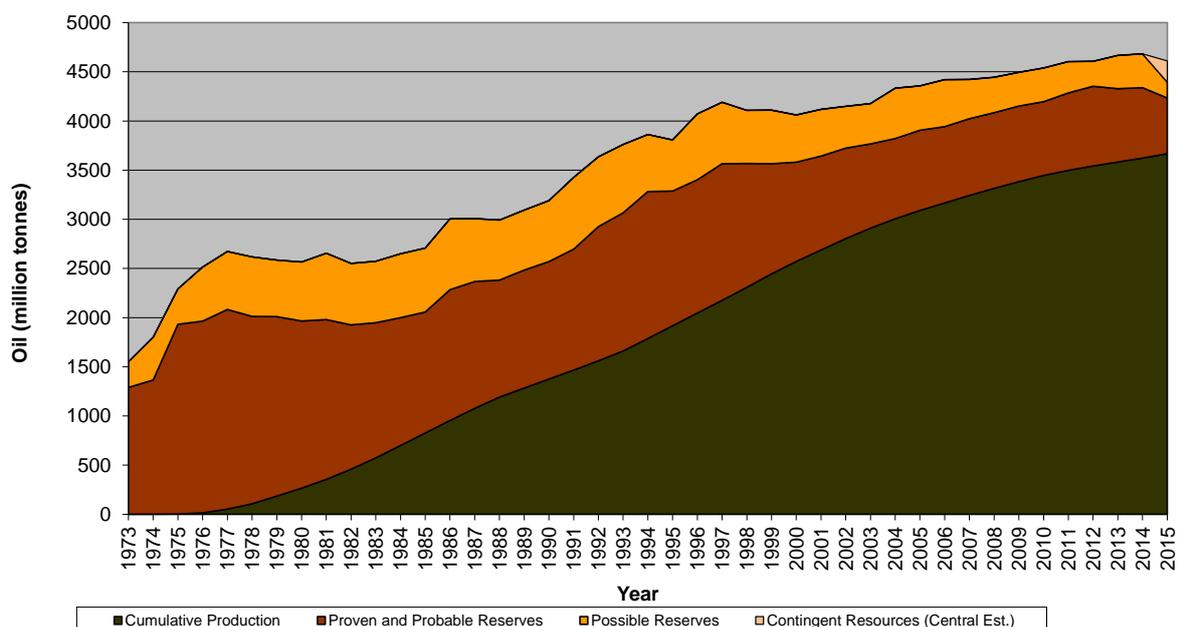
[Please note "Other significant discoveries where development plans are under discussion" are shown as Contingent Resources this year and shown as zero for end 2014 because they were counted as Reserves last year.]

### Notes on Oil Tables

- (1) Includes onshore as well as offshore fields. All figures include condensate, gas liquids and liquefied products.
- (2) All entries are rounded to the nearest one million tonnes.
- (3) Maximum (i.e. 3P reserves) is the sum of proven, probable and possible reserves.
- (4) The oil reserves include 156 (104) proven, 91 (65) probable and 48 (42) possible million tonnes in approved fields under development but not yet producing.
- (5) Cumulative oil production includes 334 (145) million tonnes from decommissioned oil fields.

## Stacked Graph to Show Oil Reserves, Contingent Resources and Production from 1973 to 2015

Oil Reserves/Resources v Time



The chart shows how cumulative production and estimated ultimate recovery of oil have both grown over time. Proven plus probable reserves have tended to decline since 1994. This year we have added the Central Estimate of Contingent Resources to the graph. You will see in 2015 that some former probable and possible reserves from last year have changed category and therefore now appear in this new Contingent Resources area instead.

## **Review of UK Oil Reserves and Contingent Resources**

The change in UK oil reserves during 2015 arises from a combination of:

- changing the category of other significant discoveries from probable and possible reserves to contingent resources only;
- production during the year;
- reserves additions from new field developments including those resulting from recent exploration success;
- reserves revisions in established fields.

Annual oil production was 45 million tonnes in 2015.

From the Oil Table it can be seen that the central estimate of oil reserves (i.e. 2P reserves) based on proven plus probable reserves now stands at 566 million tonnes which is a decrease of 150 million tonnes compared to last year. Taking annual oil production of 45 million tonnes into account this gives an apparent proven plus probable reserves loss of 105 million tonnes. However this is mainly due to changing the category of significant discoveries to contingent resources where the best estimate now stands at 134 million tonnes.

Proven oil reserves at the end of 2015 stand at 349 million tonnes, which is 25 million tonnes less than at the end of 2014. After accounting for annual production, there has been a net transfer of 20 million tonnes from probable to proven reserves. The main contributing factor to this was the reallocation of probable reserves into the proven category resulting from the development approval during 2015 of five new oil and condensate fields including Crathes, Scolty, Edradour, Glenlivet and Culzean.

Probable oil reserves now stand at 217 million tonnes and possible oil reserves at 161 million tonnes. These apparent losses are again mainly due to changing the category of significant discoveries and EOR potential to contingent resources.

Maximum oil reserves (i.e 3P reserves), combining proven plus probable plus possible reserves figures, appear at first sight to have decreased by 333 million tonnes to 727 million tonnes. This is again mainly due to changing the category of significant discoveries and EOR potential to contingent resources where the high estimate now stands at 268 million tonnes including 82 million tonnes for EOR potential. After taking this change and annual oil production of 45 million tonnes into account this gives the maximum reserves loss due to other factors such as reserves revisions and low oil price as 20 million tonnes.

## **Review of UK Estimated Ultimate Recovery of Oil (i.e. Oil Reserves plus Cumulative Production)**

After accounting for cumulative oil production, the estimated ultimate recovery (EUR) of oil has increased at the proven level but decreased at the proven plus probable (2P) and maximum (3P) levels. However, these apparent losses are largely due to changing the category of significant discoveries and EOR potential to contingent resources.

At the proven level, the EUR of oil has increased by 19 million tonnes to 4,016 million tonnes.

At the proven plus probable (2P) level, EUR appears to have decreased by 105 million tonnes and now stands at 4,234 million tonnes. However, the best estimate of Contingent Resources stands at 134 million tonnes.

Maximum (3P) EUR of oil, combining proven plus probable plus possible reserves figures, appears to have decreased by 288 million tonnes to 4,395 million tonnes. However, the high estimate of Contingent Resources stands at 268 million tonnes.

Cumulative oil production to the end of 2015 is now 3,668 million tonnes.