

UK Gas Reserves, Contingent Resources and Estimated Ultimate Recovery 2015

The gas reserves quoted comprise all the gas reserves expected to be available for sale from dry gas fields, gas condensate fields, oil fields with associated gas and a small amount from coal bed methane projects. Gas reserves are summed in the Gas Table below at different probability levels to give a range of estimates from proven to the maximum level.

The gas 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 in the Gas Table.] This year you will find resources for these future fields stated as zero but included in the new Table for Gas 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 gas reserves is outside the indicated range than when considering probability levels for an individual field.

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

Contingent Resources, Reserves and Estimated Ultimate Recovery in the Gas Tables below are presented in units of billion standard cubic metres (bcm). Note that billion means thousand million [10^9]. The UK Gas Reserves figures are also available in "field units" in Appendix 1 where we have used the conversion factor of 1 bcm = 35.31 billion cubic feet (bcf).

Estimates of UK Gas Reserves and Ultimate Recovery at 31st December 2015⁽¹⁾⁽²⁾

[figures in brackets are for end 2014]

Gas Reserves units - billion cubic metres (bcm)	Proven	Probable	Proven & Probable	Possible	Maximum ⁽³⁾
Gas from Dry Gas Fields					
Fields in production or under development					
Southern basin	71 [80]	35 [40]	105 [119]	35 [41]	140 [160]
Other areas	15 [16]	6 [6]	21 [22]	6 [11]	27 [33]
Subtotal	85 [96]	41 [46]	126 [141]	40 [52]	167 [193]
Other significant discoveries where development plans are under discussion					
Southern basin	0 [0]	0 [8]	0 [8]	0 [5]	0 [13]
Other areas	0 [0]	0 [1]	0 [1]	0 [0]	0 [1]
Subtotal	0 [0]	0 [9]	0 [9]	0 [5]	0 [14]
Total Dry Gas	85 [96]	41 [54]	126 [150]	40 [57]	167 [207]
Gas From Condensate Fields					
Fields in production or under development	96 [83]	69 [59]	165 [142]	60 [59]	225 [201]
Other significant discoveries where development plans are under discussion	0 [0]	0 [66]	0 [66]	0 [24]	0 [89]
Total Condensate Field Gas	96 [83]	69 [124]	165 [208]	60 [83]	225 [291]
Associated Gas from Oil Fields					
Fields in production or under development	26 [27]	16 [15]	42 [41]	12 [42]	54 [84]
Other significant discoveries where development plans are under discussion	0 [0]	0 [8]	0 [8]	0 [5]	0 [13]
Total Associated Gas	26 [27]	16 [23]	42 [50]	12 [47]	54 [97]
Total Gas Reserves in bcm⁽⁴⁾	207 [206]	126 [202]	333 [407]	113 [187]	446 [594]
Cumulative dry gas production	1,618 [1,601]				
Cumulative condensate gas & associated gas production	906 [885]				
Cumulative Gas Production to end 2015⁽⁵⁾	2,523 [2,486]				
Estimated Ultimate Recovery in bcm	2,731 [2,692]	126 [202]	2,856 [2,893]	113 [187]	2,969 [3,080]

[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 Gas Contingent Resources at 31 December 2015⁽¹⁾⁽²⁾

[figures in brackets for end 2014]

Gas Reserves units - billion cubic metres (bcm)	Lower	Best	High
Gas from Dry Gas Fields			
Other significant discoveries where development plans are under discussion			
Southern basin	3 [0]	8 [0]	13 [0]
Other areas	0 [0]	1 [0]	1 [0]
Subtotal Dry Gas	3 [0]	9 [0]	14 [0]
Gas From Condensate Fields			
Other significant discoveries where development plans are under discussion	5 [0]	19 [0]	28 [0]
Associated Gas from Oil Fields			
Other significant discoveries where development plans are under discussion	18 [0]	34 [0]	47 [0]
Total Gas Contingent Resources in bcm⁽⁴⁾	26 [0]	62 [0]	89 [0]

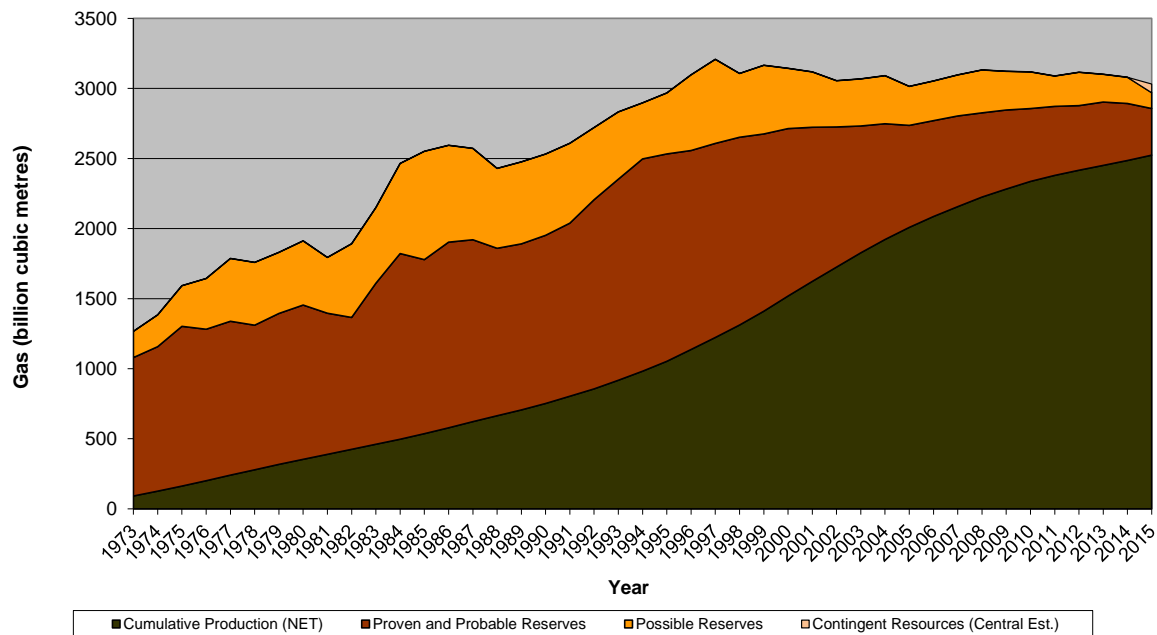
[Please note "Other significant discoveries where development plans are under discussion" are shown as Contingent Resources this year and shown as zero for end 2014 because they were counted as Reserves last year.]

Notes on Gas Tables

- (1) Includes onshore as well as offshore discoveries but excludes flared gas and gas consumed in production operations.
- (2) All entries are rounded to the nearest one billion cubic metres.
- (3) Maximum (i.e. 3P reserves) is the sum of proven, probable and possible reserves.
- (4) The gas reserves include 56 (27) proven, 49 (31) probable and 38 (34) possible billion cubic metres in approved fields under development but not yet producing.
- (5) Cumulative gas production includes 373 (210) bcm from decommissioned gas fields.

Stacked Graph to Show Gas Reserves and Production from 1973 to 2015

Gas Reserves/Resources v Time



The chart shows how reserves, cumulative production and estimated ultimate recovery of gas have changed over time. There has been a steady decline in proven plus probable reserves since 1994, initially associated with a higher rate of production. 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 Gas Reserves and Contingent Resources

The change in UK gas 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 net gas production was 38 bcm in 2015.

From the Gas Table it can be seen that the central estimate of gas reserves (i.e. 2P reserves) based on proven plus probable reserves now stand at 333 bcm which is a decrease of 74 bcm compared to last year. Taking annual gas production of 38 bcm into account this gives an apparent proven plus probable

reserves loss of 36 bcm. However this is mainly due to changing the category of significant discoveries to contingent resources where the best estimate now stands at 62 bcm.

Proven gas reserves at the end of 2015 now stand at 207 bcm which is 1 bcm more than at the end of 2014. After accounting for annual production, there has been a net transfer 39 bcm from probable to proven reserves. Amongst the gains to proven reserves were the development approval during 2015 of the Edradour, Glenlivet and Culzean gas condensate fields.

Probable gas reserves now stand at 126 bcm and possible gas reserves at 113 bcm. These apparent losses are again mainly due to changing the category of significant discoveries to contingent resources.

Maximum gas reserves (i.e. 3P reserves) based on proven plus probable plus possible reserves figures appear at first sight to have decreased by 148 bcm to 446 bcm. This is again mainly due to changing the category of significant discoveries to contingent resources where the high estimate now stands at 89 bcm. After taking this change and annual gas production of 38 bcm into account this gives the maximum reserves loss due to other factors such as reserves revisions and low gas price as 21 bcm.

Review of UK Estimated Ultimate Recovery of Gas (i.e. Gas Reserves plus Cumulative Production)

After accounting for cumulative gas production, the estimated ultimate recovery (EUR) of gas has increased at the proven level but decreased at the proven plus probable level and maximum level this year.

At the proven level, the EUR of gas has increased by 39 bcm to 2,731 bcm.

At the proven plus probable (2P) level, the EUR appears to have decreased by 37 bcm and now stands at 2,856 bcm. However, the best estimate of Contingent Resources stands at 62 bcm.

Maximum (3P) EUR of gas, combining proven plus probable plus possible reserves figures, appears to have decreased by 111 bcm to 2,969 bcm. However, the high estimate of Contingent Resources is 89 bcm.

Cumulative gas production to the end of 2015 stood at 2,523 bcm.