



Calculating the Level of the Renewables Obligation for 2014/15

The Renewables Obligation Order (ROO) 2009 requires the Secretary of State to announce the level of the Obligation six months preceding an Obligation period. The Secretary of State is therefore announcing the size of the Obligation for the 2014/15 period today, 30 September 2013. This paper sets out the methodology used in calculating the size of the Obligation.

Setting the size of the Obligation requires two calculations:

- A) The number of Renewable Obligation Certificates (ROCs) that would be needed for suppliers to meet a **fixed target** of 0.144 ROCs per MWh from eligible renewable sources in England, Scotland and Wales and 0.063 ROCs per MWh in Northern Ireland
- B) The amount of renewable electricity we expect to be generated, and based on this the number of ROCs that we expect will be issued, uplifted by 10% (**headroom**)

The Obligation level is set as one of these calculations, determined as:

- **Fixed targets:** If fixed targets (A) is greater than headroom (B).
- **Headroom:** If headroom (B) is greater than the fixed target (A).

Calculation A sets the total obligation at 42.6 million ROCs using DECC forward electricity demand figures Central scenario, compared with **Calculation B which sets it at 72.3 million ROCs**. Calculation B is the higher of the two and must therefore be used.

This means that the number of ROCs that would be needed for suppliers to meet their targets will be 0.244 ROCs per MWh in England, Scotland and Wales, and 0.107 ROCs per MWh in Northern Ireland.

Further information is provided in the Annex.

Calculation A

For 2014/15 DECC central UEP predictions¹ are that 300.46 TWh of electricity will be supplied by Licensed Supplier Electricity. At 0.144 ROCs per MWh for England and Wales and Scotland; and 0.063 ROCs per MWh for Northern Ireland, this gives a total of 42.6 million ROCs for Calculation A.

Calculation B

Calculation B estimates the potential amount of ROCs to be generated by stations accredited as of 14 August 2012 – multiplying together the MW capacity, the number of hours in the year, the banding level of that technology and the load factors set out below. This is then added to potential new build which will be generating during the period.

The list of potential new build expected to generate in 2014/15 was sourced from the Renewable Energy Planning Database (REPD)², the National Grid's Transmission Entry Capacity (TEC) Report³, Distribution Network Operator (DNO) Companies, the CHP Quality Assurance (CHPQA) programme register and Ofgem's preliminary ROC Register⁴. We have also contacted a range of developers and planning authorities to confirm the capacity and timescales for completion of these projects.

DECC's calculations gives a total of 65.7 million ROCs before headroom. With headroom, this gives a total of 72.3 million ROCs. The split between existing stations and new build stations is as follows:

	ROCs (millions)
Potential ROCs from existing stations	53.3
Potential ROCs for new build	12.3
Total (with 10% headroom)	72.3

Calculation B is therefore higher than Calculation A. In accordance with the Renewables Obligation Order 2009, Calculation B must be used to set the level of the Obligation in 2014/15.

¹ Based on latest published DECC electricity consumption predictions (UEP 48, Published in September 2013, <https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2013>).

² <https://restats.decc.gov.uk/cms/planning-database-reports/>

³ <http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/tectrading/>

⁴ <https://www.renewablesandchp.ofgem.gov.uk/Public/ReportManager.aspx?ReportVisibility=1&ReportCategory=0>

Assumptions used for Calculation B

Biomass co-firing and conversions

We have based our assumptions on the likely level of generation under the enhanced co-firing and biomass conversion bands from information provided by generators as part of the voluntary cost control notification process announced on 5 October 2012⁵, the FID enabling process and discussions within individual operators. Because of the relatively small number of plants involved, and the commercially sensitive nature of some of the information given to us, we are not publishing the amount of generation we are assuming for these categories.

Choice of scheme between the RO and Contracts for Difference and FID Investment Contracts

At the present time developers are unable to make a firm choice between the RO and CfD or Investment Contracts. We have therefore taken a cautious approach to the calculation of the RO for 2014/15 and assumed that all projects likely to commission during the next Obligation period will seek support under the RO.

Load Factors

For all load factors, DECC has considered actual generation and capacity (from the Digest of UK Energy Statistics⁶ (DUKES) and the ROC register). Where historic load factors showed a clear trend, this trend was continued for 2014/15. If there was not a clear trend, averages were considered as described below, ranging from averages over the last one to 14 years. The following load factors were used in the calculation:

<u>Technology</u>	<u>Category</u>	<u>Load Factor</u>	<u>Source and rationale</u>
<u>Onshore wind</u>	England and Wales	25.5%	Average load factor between 1998-2011 (14 years) on an unchanged configuration basis. The 14-year average UK load factor is 27.6%, the 15-year average including 2012 is 27.5%.
	Scotland	28.6%	
	Northern Ireland	33.0%	

⁵ <https://www.gov.uk/government/news/hayes-gives-investors-in-biomass-a-boost>

⁶ <http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx>

<u>Offshore wind</u>		33.1%	Average load factor between 2008 and 2012 (5 years), on an unchanged configuration basis. ⁷
<u>Hydro</u>	< 5MW	36.4%	Average load factor between 2009 and 2012 (4 years), on an unchanged configuration basis.
	> 5MW	35.3%	Average load factor between 2009 and 2012 (4 years), on an unchanged configuration basis.
<u>Landfill gas</u>		57.5%	The load factor for landfill gas exhibits a downward trend. End of year load factors between 1997 and 2012 (16 years) have been extrapolated to 2014. Load factors on an unchanged configuration basis were not used as there is evidence of site decline which is better captured by the end of year load factor.
<u>Sewage gas</u>		51.1%	Average load factor between 2009 and 2012 (4 years), on an unchanged configuration basis.
<u>Anaerobic Digestion</u>		65.4%	2012 unchanged configuration load factor. The AD load factor has been increasing since 2009 due to technological advances. As such, using an average over the last four years is likely to understate the outturn load factors. ⁸
<u>Energy from Waste CHP</u>		66.6%	Average load factor between 2009-2012 (four years), on an unchanged configuration basis. ⁹
<u>Fuelled</u>		64.0%	Average plant biomass load factor between 2009 and 2012 (4 years) on an unchanged configuration basis. ¹⁰
<u>Photovoltaics (Solar PV)</u>		11.1%	Solar PV consultation - IA

⁷ This load factor is similar to the load factor used for new build RO projects in the Draft Delivery Plan.

⁸ The load factor used in the Draft Delivery Plan for CfD supported plants is a maximum annual load factor for new plants. The load factor used for the RO Calculation is based on historic actuals.

⁹ See fn 8

¹⁰ See fn 8

Wave		31%	Assumed load factor the same as the load factor in the EMR Consultation.
Tidal Stream		18.9%	Load factor based on performance of plants receiving ROCs in 2012/13 Obligation Period, averaging the load factor between 2010/11 and 2012/13 ¹¹ .

Sources:

Solar PV: <https://www.gov.uk/government/consultations/levels-of-banded-support-for-solar-pv-under-the-renewables-obligation-for-the-period-1-april-2013-to-31-march-2017>

Onshore wind: https://restats.decc.gov.uk/cms/historic-regional-statistics/#load_factors

Other technologies: Table 6.5 DUKES, <https://www.gov.uk/government/publications/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes>

¹¹ The load factor used in the Draft Delivery Plan for CfD supported plants is a maximum annual load factor for new plants. The load factor used for the RO Calculation is based on historic actuals for the tidal test plants currently in operation under the RO.