

## Calculating the Level of the Renewables Obligation 2012/13

The Renewables Obligation Order (ROO) 2009 introduced changes that require 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 2012/13 period today, 30 September 2011. 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 0.124 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).

Following further evidence of expected generation from industry, analysis suggests that Calculation B will determine the number of ROCs to be supplied for the 2012/13 period. **Calculation A sets the total obligation at 38.8m ROCs** using DECC forward electricity demand figures Central scenario, compared with **Calculation B which sets it at 49.6m ROCs**.

This means that the number of Renewable Obligation Certificates (ROCs) that would be needed for suppliers to meet their targets will be 0.158 ROCs per MWh in England, Scotland and Wales, and 0.081 ROCs per MWh in Northern Ireland.

Further information is provided in the Annex.

## ANNEX

### Calculation A

For 2012/13 DECC central UEP predictions<sup>1</sup> are that 317.2TWh of electricity will be supplied by Licensed Supplier Electricity. At 0.124 ROCs per MWh for England and Wales and Scotland; and 0.063 ROCs per MWh for Northern Ireland, this gives a total of 38.83 million ROCs for Calculation A.

### Calculation B

Calculation B works by taking the potential amount of ROCs to be generated by stations accredited as of 27 July 2011<sup>2</sup> – multiplying together the MW capacity set out below, the number of hours in a year, the banding level of that technology and the load factors set out below. This is then added to the potential new build (calculated as above) and our assumptions for co-firing.

The list of potential new build expected before 1 April 2013 was sourced from the Renewable Energy Planning Database (REPD)<sup>3</sup>, the National Grid's Transmission Entry Capacity (TEC) Report<sup>4</sup>, Ofgem's preliminary ROC Register<sup>5</sup>, and, where appropriate, the UK Wind Energy Database<sup>6</sup>. We have also been in contact with a range of developers to confirm the capacity and timescales for completion of these projects.

	<b>ROCs (Millions)</b>
Potential ROCs from existing stations	27.9
Potential ROCs from new build	17.2
Co-firing assumed	1.0
Sub Total	45.1
<b>Total (with 10% headroom)</b>	<b>49.6</b>

### Total

DECC calculations give a total of 45.1 million ROCs before headroom. With headroom this amounts to 49.6 million ROCs. According to legislation, this means that Calculation B sets the obligation.

### Capacity and Generation for existing and new stations

	<b>GW</b>	<b>TWh</b>
Biomass (including ACT, AD, conversion plants)	2.8	6.7

<sup>1</sup> Based on latest published DECC electricity consumption predictions (UEP 42) which informed the projections for the 4<sup>th</sup> Carbon Budget IA in May 2011.

<sup>2</sup> Sourced from Ofgem's accreditation list. These were then cross-checked against sites generating and claiming ROCs in the years 2009 and 2010

<sup>3</sup> <https://www.renewablesandchp.ofgem.gov.uk/Public/ReportManager.aspx?ReportVisibility=1&ReportCategory=0>

<sup>4</sup> Projects listed as under construction as at August 2011: <https://restats.decc.gov.uk/cms/planning-database-reports/>  
<sup>5</sup> <http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/tectrading/>

<sup>6</sup> <https://www.renewablesandchp.ofgem.gov.uk/Public/ReportManager.aspx?ReportVisibility=1&ReportCategory=0>

<sup>6</sup> <http://www.bwea.com/ukwed/>

Hydro	0.7	2.0
Landfill and Sewage Gas	1.1	5.8
Offshore Wind	3.6	7.6
Onshore Wind	6.3	12.4
Co-firing	n/a	2.1
<b>Total</b>	<b>14.6</b>	<b>37.4</b>

### Co-firing Assumptions

In 2008/09 and 2009/10 we had assumed that co-firing would use up the whole of the co-firing cap<sup>7</sup> (12.5%), but have since agreed with industry's view that this over-estimated the contribution from co-firing. We therefore believe we should review the co-firing cap assumption annually, and in setting the 2011/12 Obligation we therefore assumed that co-firing would generate 3TWh and 1.5m ROCs.

We have taken a similar approach in setting the 2012/13 Obligation, looking at the amount of co-firing currently being seen in the RO in the current financial year, as well as that from 2008/09 to 2010/11. We have included a provision of 1.04m ROCs for co-firing.

### Dedicated biomass CHP

According to the Ofgem ROC register, some dedicated biomass plants have received ROCs for CHP production (banded at 2 ROCs) in some months of 2010/11 and ROCs for electricity-only production (banded at 1.5 ROCs) in others. To account properly for these generators when setting the obligation for 2012/13, DECC has identified all relevant installations in the ROCs register and classified the number of months in which these installations generated CHP, electricity-only or a ratio of both. Using these annual shares, DECC then calculated the resulting annual generation of both CHP and electricity-only generation, based on the 2010/11 ROC data. These generation estimates were then multiplied by 2 ROCs for CHP and 1.5 ROCs for electricity only to get an estimate of total ROCs received by these plants. The same was done for plants that alternate between using biomass and energy crops.

### Load Factors

For all load factors DECC has considered generation and capacity actuals (Digest of UK Energy Statistics<sup>8</sup> (DUKES) and ROC register). If historic load factors showed a clear trend this trend was continued for 2012/13. If, on the other hand, there was not a clear trend in the observed actuals, appropriate averages for 2012/13 were considered (either an average over 14 years (the DUKES published series), or an average over the last three observed years).

Type	Load Factor
Onshore	26.6%
Offshore	30.8%
Hydro	33.9%
Landfill Gas	59.7%

<sup>7</sup> The RO includes a co-firing cap – this means that licensed suppliers are restricted to producing only 12.5% of their overall obligation from co-firing of regular biomass ROCs

<sup>8</sup> <http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx>

Sewage Gas	44.0%
Anaerobic Digestion (existing)	39.8%
Anaerobic Digestion (new)	56.0%
Energy from Waste CHP	41.7%
Fuelled (Dedicated Biomass and Advanced Conversion Technologies (ACTs))	53.3%
Solar PV	9.7%
Wave	1.1%
Tidal	16.9%
Biomass conversion plants (plants converting from coal to dedicated biomass)	Plant specific