DEPARTMENT OF ENERGY & CLIMATE CHANGE

Carbon values used in DECC's energy modelling

October 2011

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The following estimates for EU Emission Allowances (EUAs) have been used in DECC's emission projections model and other models of electricity generation and investment across Government. These are shown graphically in Annex A.

All prices in 2011 values						
	€			£		
	Low	Central	High	Low	Central	High
2011	7.5	15.7	20.3	6.4	13.5	17.4
2012	8.3	16.9	21.5	7.2	14.5	18.5
2013	10.2	18.5	23.3	8.8	15.9	20.0
2014	11.6	19.9	24.8	10.0	17.1	21.3
2015	13.4	22.0	27.4	11.5	18.9	23.5
2016	16.1	23.9	30.9	13.8	20.5	26.5
2017	17.6	25.5	32.4	15.1	21.9	27.8
2018	18.5	27.4	35.9	15.9	23.5	30.8
2019	20.0	29.9	38.1	17.2	25.7	32.7
2020	22.3	33.2	41.3	19.1	28.5	35.5
2021	22.6	33.7	42.0	19.4	29.0	36.0
2022	23.0	34.2	42.6	19.7	29.4	36.6
2023	23.3	34.8	43.2	20.0	29.8	37.1
2024	23.7	35.3	43.9	20.3	30.3	37.7
2025	24.0	35.8	44.5	20.6	30.7	38.2
2026	24.4	36.3	45.2	20.9	31.2	38.8
2027	24.8	36.9	45.9	21.3	31.7	39.4
2028	25.1	37.4	46.6	21.6	32.1	40.0
2029	25.5	38.0	47.3	21.9	32.6	40.6
2030	25.9	38.6	48.0	22.2	33.1	41.2

Note that these values are identical to those used for appraisal purposes up to 2020.[1]

After 2020, the appraisal values converge to a price consistent with a global carbon market and limiting climate change to less than 2°C above pre-industrial level temperatures. However for modelling purposes, a price relatively consistent with the current legislative framework is required, as the modelling work is partly used to determine the extent to which current legislation is sufficient to drive the required level of decarbonisation. Therefore the values after 2020 rise at the cost of carry (estimated at 1.5% p.a.). This is justified in the absence of a clear understanding of the likely policy mix post-2020. Key uncertainties are around the quantity of access to international offsets that will be available in the system and the extent to which abatement will be brought on by wider EU policies.

[1] http://www.decc.gov.uk/en/content/cms/emissions/valuation/valuation.aspx

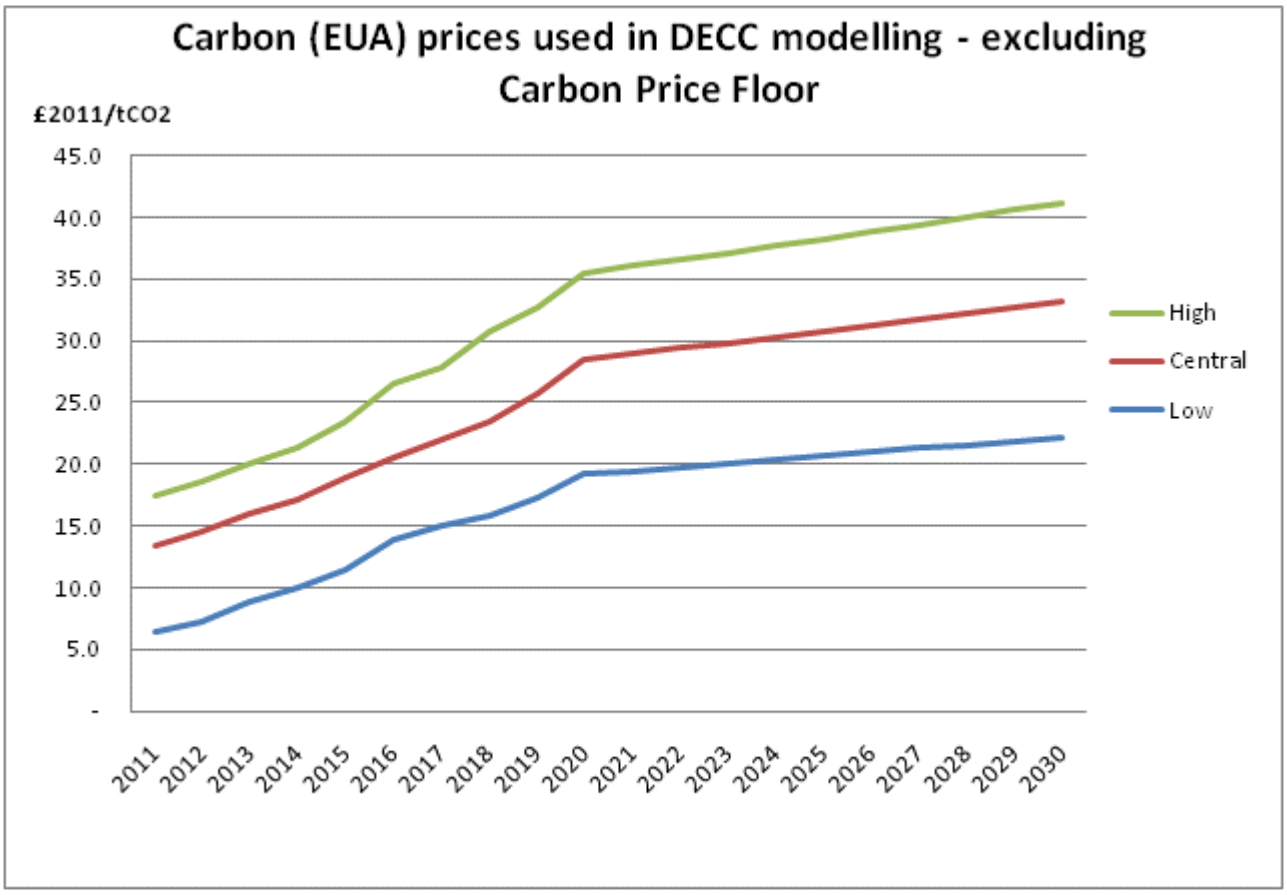
Please note that these values should not be considered as “forecasts” of future prices and DECC accepts no responsibility for any liability arising from the use of these figures.

Most electricity generation and investment models will need to consider not just the price of EUAs but also the impact of the Carbon Price Floor (CPF). Government has announced a trajectory out to 2030 for the total carbon price (EUA price + CPS Rate) that electricity generators will face, while the level of the Carbon Price Support Rates has been set for the 2013/14 financial year. The following table shows the total carbon price (including the carbon price support rates) which has been used in electricity investment and generation models. This has been calculated as follows;

- For years 2011 & 2012, the carbon price is in line with the EUA price
- For 2013, the announced level of CPS (£4.71/tCO_2 in 2011 prices) has been added to the EUA price for 2013.
- For 2014 onwards, the price level is the higher of either the trajectory of the carbon price floor or the EUA price.

All prices in £2011 values			
	Low	Central	High
2011	6.4	13.5	17.4
2012	7.2	14.5	18.5
2013	13.5	20.6	24.7
2014	18.8	18.8	21.3
2015	21.0	21.0	23.5
2016	23.1	23.1	26.5
2017	25.3	25.3	27.8
2018	27.5	27.5	30.8
2019	29.6	29.6	32.7
2020	31.8	31.8	35.5
2021	36.0	36.0	36.0
2022	40.3	40.3	40.3
2023	44.5	44.5	44.5
2024	48.8	48.8	48.8
2025	53.0	53.0	53.0
2026	57.3	57.3	57.3
2027	61.5	61.5	61.5
2028	65.7	65.7	65.7
2029	70.0	70.0	70.0
2030	74.2	74.2	74.2

Annex A


Carbon (EUA) prices used in DECC modelling - excluding Carbon Price Floor
£2011/tCO2
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
-
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
High
Central
Low

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URN 11D/878