

Technical Appendix 16.2: Carbon Calculator Output

Ref: 275Y-QVSG-CD62 (v6)			
Output Data	Expected Value	Minimum Value	Maximum Value
1. Windfarm CO2 Emission Saving Over...			
...coal-fired electricity generation (t CO2 / yr)	277,282	267,012	287,552
...grid-mix of electricity generation (t CO2 / yr)	53,514	51,532	55,496
...fossil fuel-mix of electricity generation (t CO2 / yr)	119,547	115,119	123,974
Energy output from windfarm over lifetime (MWh)	9,685,494	9,326,772	10,044,216
2. Losses due to turbine life (eg. manufacture, construction, decommissioning)			
3. Losses due to backup	51,656	46,490	56,822
4. Losses due to reduced carbon fixing potential	462	343	738
5. Losses from soil organic matter	-4,170	-6,762	13,206
6. Losses due to DOC & POC leaching	22	0	11
7. Losses due to felling forestry	37,866	22,718	50,911
Total losses of carbon dioxide	155,486	132,155	191,622
8a. Change in emissions due to improvement of degraded bogs			
8a. Change in emissions due to improvement of degraded bogs	0	0	0
8b. Change in emissions due to improvement of felled forestry			
8b. Change in emissions due to improvement of felled forestry	-2,138	0	-17,232
8c. Change in emissions due to restoration of peat from borrow pits			
8c. Change in emissions due to restoration of peat from borrow pits	427	0	-897
8d. Change in emissions due to removal of drainage from foundations & hardstanding			
8d. Change in emissions due to removal of drainage from foundations & hardstanding	-19	0	-119
Total change in emissions due to improvements	-1,731	0	-18,248
Net emissions of carbon dioxide (t CO2 eq.)			
Net emissions of carbon dioxide (t CO2 eq.)	153,756	113,907	191,622
...coal-fired electricity generation (years)			
...coal-fired electricity generation (years)	06	0.4	0.7
...grid-mix of electricity generation (years)			
...grid-mix of electricity generation (years)	2.9	2.1	3.7
...fossil fuel-mix of electricity generation (years)			
...fossil fuel-mix of electricity generation (years)	1.3	0.9	1.7
Ratio of soil carbon loss to gain by restoration (not used in Scottish applications)			
Ratio of soil carbon loss to gain by restoration (not used in Scottish applications)	-2.40	-0.37	No Gains!
Ratio of CO2 eq. emissions to power generation (g/kWh) (for info. only)			
Ratio of CO2 eq. emissions to power generation (g/kWh) (for info. only)	15.87	11.34	20.55