Carbon Calculator Inputs category	Input
No. of Turbines	22
Duration of consent	30
Power rating of 1 turbine (MW)	4.8
Capacity factor	33
Backup - Fraction of output to back up %	5.28
Additional emissions due to reduced thermal efficiency of the reserve generation (%)	10
average annual air temp (°C)	6.1
Type of peatland	Acid
average depth of peat at site (m)	0.3
Content of dried peat (% by weight)	49
average water table depth (m)	0.5
Drainage around drainage	0.5
Dry soil bulk density of peat gcm^{-3}	0.2
Time required for regeneration of bog plants after restoration (years)	2
Carbon accumulation due to C fixation by bog plants in undrained peats (tC ha-1 yr-1)	0.1
area of forestry to be felled (ha)	62.8
Average rate of carbon sequestration in timber (tC ha-1 yr-1)	3.6
Counterfactual emission factors: Fossil fuel mix emission factor (t CO2 MWh-1)	0.45
no. of borrow pits	3
average length of borrow pits (m)	80

average width of borrow pits (m)	80
average depth of peat removed from pit (m)	0
Method used to calculate CO2 loss from foundations and hard-standing	Rectangular with verticle walls
average length of turbine foundation (m)	22
average width of turbine foundation (m)	22
average depth of peat removed from turbine foundations (m)	0.05
average length of hard standing (m)	75
average width of hard standing (m)	40
average depth of peat removed from hard-standing (m)	0.05
Volume of concrete (m3) used in construction of wind farm	12000
Existing access track	1252
length of access track that is floating road (m)	0
Floating road width (m)	0
floating road depth (m)	0
Length of floating road that is drained (m)	0
Average depth of drains associated with floating roads (m)	0
Existing access track	1252
Length of access track that is excavated road (m)	200
Excavated road width (m)	5
Average depth of peat excavated for road (m)	0.3
Length of access track that is rock filled road (m)	24,654
Rock filled road width (m)	5
Rock filled road depth (m)	1
Length of rock filled road that is drained (m)	26106
Average depth of drains associated with rock filled roads (m)	0.75
Total length of access track (m) (existing+to be upgraded +ex	26106
Length of any cable trench on peat that does not follow access tracks and is lined awith a permeable medium eg. sand (m)	0
Volume of additional peat excavated (m3)	0
Area of additional peat excavated (m2)	0
Peat landslide hazard	0

Improvement of degraded bog - Time required for hydrology and habitat of bog to return to its previous state on improvement (years)	2
Period of time when effectiveness of the improvement in degraded bog can be guaranteed (years)	2
Improvement of felled plantation land - Time required for hydrology and habitat of felled plantation to return to its previous state on improvement (years)	2
Improvement of felled plantation land - Period of time when effectiveness of the improvement in felled plantation can be guaranteed (years)	2
Restoration of peat removed from borrow pits - Time required for hydrology and habitat of borrow pit to return to its previous state on restoration (years)	1
Restoration of peat removed from borrow pits - Period of time when effectiveness of the restoration of peat removed from borrow pits can be guaranteed (years)	2
Early removal of drainage from foundations and hardstanding - Time to completion of backfilling, removal of any surface drains, and full restoration of the hydrology (years)	0.1
Restoration of site after decomissioning	N/A

Notes:
30 year lifespan.
Carbon calculator note advises that '*If 20% of national electricity is generated by wind energy, the extra capacity required for backup is 5% of the rated capacity of the wind plant (Dale et al 2004)*'. 5% of capacity (105.6) = 1.65%
Carbon calculator note advises that: '*Extra emissions due to reduced thermal efficiency of the reserve power generation ≈ 10% (Dale et al 2004)*'.
Taken from Table 6-6 from Chapter 5 Air and Climate Chapter, Volume 2 of the EIAR.
Carbon calculator note advises that: '*An estimate of the range of %C in peat of between 49% and 62% is provided by Birnie et al. (1991)*'. Based on the thinness of peat on site, limited frequency and area and management (farming and forestry), peat is not intact and is therfore likely to have a lower level of carbon content.
The carbon calculator only allows a figure of -0.1-1m, as the this is likely to be less due to land management a depth of 0.5m is provided.
Worst case
Carbon calculator note advises that: '*A value for bulk density for peat as derived from the National Soil Inventory of Scotland (Lilly et al., 2010), is 0.2 g cm-3.. Dryburgh (1978) report a range of typical bulk density of sod peat slightly higher, as being between 0.25 and 0.45 g/cm-3*'.
While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 2 years.
While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 0.1 tC ha-1 yr-1.
This is dependent on the yield class of the forestry. Carbon sequestered for yield class 16 m3 ha-1 y-1 = 3.6 tC ha-1 yr-1
Fixed value

0.3m at 4 No. turbine locations. As model only except peat depth per turbine, the depth at four turbines was devided by the number of total turbines to get total average.
0.3m at 4 No. turbine locations. As model only except peat depth per turbine, the depth at four turbines was devided by the number of total turbines to get total average.
total of 10,000m existing but 8,748m requires upgrading
0m expected.
n/a
n/a
n/a
n/a
total of 10,000m existing but 8,748m requires upgrading
Approximately 200m of access track are to be located in peat. Excavated road only includes road excavation on peat.
Whilst 4.5m is the width of the new and upgraded access track. The model takes ≥5m.
0.3
Constructing approx 14867m (minus 200m on peat) of new access track and upgrading approx 8748m, minus 200m which is excavated on peat (taken into account in excavated road).
Whilst 4.5m is the width of the new and upgraded access track. The model takes ≥5m.
12km of new drains which will service the 12km of new access track.
Includes the total for interceptor drains and swales.
Total existing (1252)+ length of new access on peat/excavated (200)+rock filled road (24654) = 26106
None outside access track/hardstandings.

While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 2 years.
While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 2 years.
While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 2 years.
While no restoration/regeneration is envisaged, the lowest figure the carbon calculator accepts is 2 years.
No peat. The lowest figure the carbon calculator accepts is 1 years.
No peat. The lowest figure the carbon calculator accepts is 2 years.
No envisaged. The lowest value the carbon calculator accepts is 0.1 years.
Not applicable