

*John Gormley, TD,
Minister for the Environment,
Customs House,
Dublin,
26 November 2009*

minister@environ.ie

Re: Ireland has not taken into account the lose of carbon from afforestation of peat soil

Dear Minister;

We read with great interest your presentation to the Joint Committee on Climate Change and Energy Security on Wednesday, 11 November 2009 and commend you on your command and clarity across the range of difficult issues you addressed.

We write to draw your attention to your response to a question by Deputy McManus, who sought to understand the basis of carbon calculations in relation to forestry.

In particular, you pointed out that

“we need to be careful in how we calculate that and exactly what the emission reduction is. Where does one plant? On what sort of soil does one plant? If one plants on bogs, one could cause a net emission.”

We would suggest that you are indeed correct and that Ireland has not taken into account the loss of carbon from afforestation of peat soils into its calculations of post- Kyoto carbon emissions.

This is because Ireland provides figures only for four of the five carbon pools – above-ground biomass, below-ground biomass, deadwood and litter – and omits the fifth – the impact on carbon stores in the soil.

The calculations for the value of Irish forestry to our Kyoto accounting the Government currently relies on are prepared by COFORD and are based on their CAREBWARE modelling which does not take account of changes in soil carbon:

“Since 2002 CARBWARE has undergone extensive refinement and improvement: at first only biomass could be estimated; now the model estimates changes in four of the five carbon pools needed for international reporting: above-ground biomass, below-ground biomass, deadwood and litter. Changes in carbon stocks in the fifth pool - soil carbon - are the hardest to detect. It is the largest pool in forest ecosystems in Ireland, but also has the slowest rate of change. Work is underway in COFORD-funded projects to estimate carbon stock changes in the soil pool of the Kyoto forest.”
[COFORD, Environment 9, 2008]

Carbon stock studies on afforested peatlands should include all five carbon pools, including soil organic carbon, as distinguished by the IPCC 2006 guidelines.

Peatlands are significant carbon stores. Drainage ditches lower the water table leading to oxidation and consequent loss of carbon stocks. Afforestation depletes the carbon store through the enhanced decomposition of organic soils [Cannell 1993, Holden 2007].

International studies suggest that planting broadleaf trees will have little effect on soil carbon stocks, whereas conifer planting, especially in high rainfall areas, may lead to depletion of soil carbon stocks [Guo and Gifford 2002]. A study conducted by Byrne (1999) indicated that soil CO₂ emissions on Sitka spruce forest on blanket peat can be over twice that in undisturbed blanket bog.

Extensive planting has been carried out in Ireland on upland blanket bog and wet heaths. Figures for the area of Irish post-1990 Kyoto afforestation on peat soils and peaty podsols depend on the definition of soils. The definition for peat used under the 'Nitrates Directive' is the percentage of organic matter (the suitable indicator for possible cultivation) while the definition used by the Forest Service to assess suitability for forestry is depth (the appropriate measurement for industrial extraction) [Hammond, 1979]. Peaty podsols have not been categorised.

Although the rate of planting and the percentage on peat soils has slowed there is still no prohibition against planting, even on deep peat. The main species planted are Sitka spruce (*Picea sitchensis*) and Lodgepole pine (*Pinus contorta*). The estimates of forestry on peat soils planted post-1990 range from 84% CORINE [EEA 2004] to the recently completed National Forestry Inventory which reported new forestry planting on peat soils ranging from 54% in 1990 to 39% in 2003 [NFI 2007]. It gives the overall percentage of Irish forestry on peat soils as 60%.

National forestry policy, current forestry management, and reforestation of felled plantations will continue to degrade these peatlands. **The complete cessation of afforestation of all peatlands and other high carbon soils must be put in place without delay to ensure this practise is ended solely as part of our national commitment to lower Ireland's emissions of greenhouse gases.**

The failure of Ireland to include the calculation of net loss of carbon through drainage of peat soils is also a major cause of our inability to bring about change in the current location and species choice of new forestry plantations. **The figures provided by COFORD encourage continued planting on these soils to gain carbon credits.**

The EU LIFE funded project undertaken by Coillte Teo. has returned felled plantation sites to peat forming bog habitat by raising the water levels sufficiently to encourage the (peat forming) Sphagnum mosses to grow

again. It is now demonstrated that management on these sites maximises carbon protection and storage and must be further supported.

The impact of addressing this issue could be significant, given that 60% of the forest estate equates to more than 200,000 hectares of land and the planting target set in the 1996 National Strategic Forestry Plan is 20,000 hectares a year until 2030, although current planting levels are very much less than this target.

We have made a number of unsuccessful representations to other Government Departments, particularly the Treasury Management Agency and the Departments of Finance and Agriculture.

We would be grateful if you would support our representations to ensure Ireland's compliance with the Kyoto reporting mechanisms in order that forestry policy may be firmly based on its true value to the environment and the economy.

Respectfully yours,

Tony Lowes