

14 CLIMATE

14.1 Introduction

This section describes the meteorological conditions and potential emissions associated with the Srahmore Peat Deposition site activities that have the potential to affect on the climate, through the release of 'greenhouse' gases (GHGs).

There will be no direct impacts on climate as a result of the deposition on peat. Examination for potential emissions from the deposited peat has been assessed.

No other releases are anticipated that can lead to other regional or global climatic impact issues such as ozone depletion.

14.2 Meteorological Conditions

The landscape in the environs of the Srahmore Peat Deposition site is flat lying. The prevailing wind is from the southwest.

The nearest meteorological station in the area is the Met Eireann Synoptic Station in Béal an Mhuirthead (Belmullet) which is 16.6km northwest of the Srahmore site.

The 30 year average (1961-1990) for the Belmullet Synoptic Station are presented below:

- Mean Temperature: 9.6⁰C;
- Mean Relative Humidity (@ 0900UTC %): 83
- Mean Daily Sunshine Duration (Hours): 3.5
- Mean Annual Rainfall (mm): 1142.7
- Mean Evapotranspiration (mm): 527.1
- Mean Wind Speed (knots): 13.1 (24.3km/hr)

14.3 Global Warming

The main compounds considered to contribute to global warming are carbon dioxide (CO₂) and methane (CH₄). Other compounds have the potential to contribute to global warming but are generally released in much smaller quantities.

Global warming and the management of emissions with the potential to contribute to global warming are an increasingly important issue for Ireland. An international agreement was drawn up (the Kyoto Protocol) in response to rising emissions of the principal contributing compounds which has subsequently been ratified by the European Union.

Under the burden sharing agreement within the European Union to implement the Protocol, Ireland agreed to a limit of 13% above 1990 emission levels to be achieved between 2008

and 2012. By 2001, the level of global warming releases (CO₂ and CH₄) however had risen by 31% above the 1990 levels following a period of rapid economic growth. In quantitative terms, Ireland's total allowable emissions in the period 2008-2012, known as the assigned amount, is 314.18 million tonnes (Mt) CO₂ equivalent, which corresponds to an average of 62.8 Mt annually for the five years. The latest data from the EPA shows that National greenhouse gas emissions were 7% over target in 2008 (i.e. 23% above 1990 levels). The EU has adopted a much more challenging reduction target for 2020. The European Union has committed itself to reducing its greenhouse gas emissions to 20% below 1990 levels by 2020.

Numerous initiatives are in place to reduce emission levels under the Government's National Climate Change Strategy and EU initiatives including the Emissions Trading Scheme.

Global warming has numerous potential implications for Ireland's environment including:

- greater risk of seasonal flooding with an increased rainfall in winter and decrease in summer;
- changes to habitats and ecosystems including the drying of peatlands; and
- effects on sea and river levels and influence on water resources.

14.4 Influence of Peat Deposition on Releases with Global Warming Potential

Using the methodology issued by the Scottish Government 'Calculating Carbon Savings from Wind Farms on Scottish Peatlands – A New Approach' (University of Aberdeen, 2008), it is possible to assess the influence of the deposition of the peat on GHG emissions. The detailed calculations of the gas emissions are outlined in Chapter 8 of the onshore pipeline development (Volume 1 & 2 of the EIS) and summarised herein.

The loss of Carbon from the Removed Peat (L_{removed}) from the pipeline route is calculated using the following equation:

$$L_{\text{removed}} = 3.667/100 \times pC_{\text{dry peat}} \times Bd_{\text{dry soil}} \times V_{\text{direct}}$$

Where

$pC_{\text{dry peat}}$ is the carbon content of dry peat (%) given the default value of 55%.

$Bd_{\text{dry soil}}$ is the dry soil bulk density (g/cm³) given the default value of 0.1g/cm³.

V_{direct} is the total volume of peat removed during construction (m³). Up to 75,000m³ of peat will be removed from the onshore pipeline development.

Based on the above formula, the carbon loss from the removed peat equates to 13,881 tCO₂(eq) if 100% of the carbon in the peat was lost to the atmosphere. However it is proposed to transport the peat to the Srahmore Peat Deposition site and to deposit the

material in a manner to minimise carbon loss through peatland rehabilitation and ultimately bog regeneration (following the stabilisation period). As such, the removal of peat from the proposed onshore pipeline and subsequent deposition at the Srahmore site is predicted to cause negligible carbon losses (0 tCO₂eq).

14.5 Do Nothing Scenario

In the event the development does not proceed the Srahmore Peat Deposition site will be rehabilitated in accordance with its current Waste Licence (Ref, EPA, W0-199-01) and Existing planning permission. This will result in the Srahmore Peat Deposition site reverting to a carbon neutral during and following the stabilisation, rehabilitation and bog regeneration programme.

14.6 Predicted Impact of the Proposed Development

The only predicted impacts will be associated with emissions from HCV and from onsite vehicles at the peat deposition site. This is addressed in Section 11 of this Volume of the EIS.

The deposition of up to 75,000m³ of peat at Srahmore from the onshore pipeline would produce significantly lower GHG emissions than the exportation of this peat to the next nearest permitted facility, quantified as 10,720 tCO₂eq.

14.7 Mitigation Measures

Vehicle emissions will be minimised through effective vehicle maintenance. Releases from HCV movements between the Pipeline development and the peat deposition site will additionally be minimised through appropriate route selection to and from the peat deposition site.

14.8 Monitoring and Reporting

It is proposed to implement a programme to monitor Carbon Dioxide and Methane emission levels, which will include the accurate recording of disposed peat volumes and the regular servicing and maintenance of vehicles. Details of this programme will be agreed in advance with the relevant authorities.