Dunmanway to Clashavoon 110kV Overhead Line Environmental Reports

Assessment of Corridors Report – Soils and Geology

Submission to: ESB International

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September 2010

1. Introduction

This section provides an assessment of the potential route corridors within the study area for the proposed 110kV line from Clashavoon 220/110kV station to the Dunmanway 110kV station, Co. Cork. The purpose of this assessment is to recommend the route corridor that causes the least environmental impacts in terms of soils and geology.

A previous *Constraints Report* identified the most significant constraints within the study area. The key constraints in relation to soils and geology are the following:

- Soft ground including blanket peat
- Areas of made ground
- Registered operational quarries
- Landfills and contaminated sites
- Areas where rock is close to the surface
- Geological heritage areas

The potential route corridors have been designed having regard to the identified constraints.

2. Assessment of Route Corridors

The magnitude of potential impacts is defined in accordance with the criteria provided in the EPA publication "Guidelines on the Information to be contained in Environmental Impact Statements" (2002), outlined in *Tables 2.1* and *2.2:*

Quality of Impacts	Description
Positive Impact	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or removing nuisances or improving amenities).
Neutral Impact	A change which does not affect the quality of the environment.
Negative Impact	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).

Table 2.1 Impact Assessment Criteria (Quality)

Magnitude of Impact	Description
Imperceptible	An impact capable of measurement but without noticeable consequences
Slight	An impact that alters the character of the environment without affecting its sensitivities
Moderate	An impact that alters the character of the environment in a manner that is consistent with existing or emerging trends
Significant	An impact, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Profound	An impact which obliterates all previous sensitive characteristics

Table 2.2 Impact Assessment Criteria (Magnitude)

Western Corridor

Attribute	Attribute Importance	Impact	Level of Impact
Excess excavated soil and rock generated during the construction stage.	Low	Excess soil and rock is expected to be minimal due to the nature of the structures; however it will require off-site disposal or recovery at a nearby licensed waste facility.	Slight Negative
Soil and subsoil quality	Low	Irreversible loss of small proportion of local high fertility soils and/or low fertility soils. Disruption of soil is expected to be minimal due to the nature of the structures.	Slight Negative
Degree or extent of soil contamination.	Low	The extent of the soil contamination would need to be determined, soil would need to be sampled and tested before being transported to an appropriately licensed facility by permitted contractors.	Slight Negative
The presence of peat and/or soft organic soil underlying route corridor. Blanket peat was found to be present in the townland of Haremount, 2km southwest of Kilmichael and the southern section of the route, north of Dunmanway.	Low	On site machinery and any dewatering activities during the construction phase has the potential to contribute to localised peat slope failure. There are also contributing factors e.g. slope angle, accumulation of water following a high intensity rainfall event and the presence of drains in the vicinity of the construction area.	Slight Negative

Table 2.3 Estimation of Magnitude of Impact on Soils & Geology (Western Corridor)

Central Corridor

Attribute	Attribute Importance	Impact	Level of Impact
Excess excavated soil and rock generated during the construction stage.	Low	Excess soil and rock is expected to be minimal due to the nature of the structures; however it will require off-site disposal or recovery at a nearby licensed waste facility.	Slight Negative
Soil and subsoil quality	Low	Irreversible loss of small proportion of local high fertility soils and/or low fertility soils. Disruption of soil is expected to be minimal due to the nature of the structures.	Slight Negative
Degree or extent of soil contamination.	Low	The extent of the soil contamination would need to be determined, soil would need to be sampled and tested before being transported to an appropriately licensed facility by permitted contractors.	Slight Negative
The presence of peat and/or soft organic soil underlying the route corridor in localised areas.	Low	On site machinery and any dewatering activities during the construction phase has the potential to contribute to localised peat slope failure. There are also contributing factors e.g. slope angle, accumulation of water following a high intensity rainfall event and the presence of drains in the vicinity of the construction area.	Slight Negative

Table 2.4 Estimation of Magnitude of Impact on Soils & Geology (Central Corridor)

Eastern Corridor

Attribute	Attribute Importance	Impact	Level of Impact
Excess excavated soil and rock generated during the construction stage.	Low	Excess soil and rock is expected to be minimal due to the nature of the structures; however it will require off-site disposal or recovery at a nearby licensed waste facility.	Slight Negative
Soil and subsoil quality	Low	Irreversible loss of small proportion of local high fertility soils and/or low fertility soils. Disruption of soil is expected to be minimal due to the nature of the structures.	Slight Negative
Degree or extent of soil contamination.	Low	The extent of the soil contamination would need to be determined, soil would need to be sampled and tested before being transported to an appropriately licensed facility by permitted contractors.	Slight Negative
The presence of peat and/or soft organic soil underlying the route corridor in localised areas.	Low	On site machinery and any dewatering activities during the construction phase has the potential to contribute to localised peat slope failure. There are also contributing factors e.g. slope angle, accumulation of water following a high intensity rainfall event and the presence of drains in the vicinity of the construction area.	Slight Negative

Table 2.5 Estimation of Magnitude of Impact on Soils & Geology (Eastern Corridor)

3. Preferred Route Corridor Option

The potential impacts relating to the soils and geology are generally related to the construction phase and the management of machinery on site. The application of mitigation measures highlighted will help ensure that the residual potential impacts at all route options are imperceptible during the construction phase and the operational phase.

In terms of the route corridor selection the level of impact identified was slight negative for all route corridors. The least preferred option would be the Western Corridor due to the presence of blanket peat at a larger scale than the other route corridor options.