

# SKYE REINFORCEMENT PROJECT

## Appendix V2-6.1: Methodology for Assessing Significance of Effect

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Networks Transmission (SSEN Transmission)

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## 1.0 Introduction

An assessment has been undertaken on hydrology and hydrogeology (the water environment) during the construction and operational phases of the Proposed Development. The assessment has also considered the potential effects of dismantling the existing 132 kV overhead line on hydrology and hydrogeology.

The significance of effects of the Proposed Development has been assessed by considering two factors: the sensitivity of the receiving environment and the potential magnitude of impact, should that effect occur.

This approach provides a mechanism for identifying the areas where mitigation measures are required and for identifying mitigation measures appropriate to the significance of likely effects presented by the Proposed Development.

Criteria for determining the significance of effect are provided in the following paragraphs.

## 2.0 Methodology for Assessing Significance of Effect

### 2.1 Sensitivity of Receptor

The sensitivity of the receiving environment (i.e. the baseline quality of the receiving environment) is defined as its ability to absorb an effect without a detectable change and can be considered through a combination of professional judgement and a set of pre-defined criteria which is set out in **Table 2-1**. Receptors in the receiving environment only need to meet one of the defined criteria to be categorised at the associated level of sensitivity.

**Table 2-1: Criteria for Assessing Sensitivity of Receptor**

Sensitivity	Definition
High	<ul style="list-style-type: none"> <li>SEPA Water Framework Directive Water Body Classification: High-Good or is close to the boundary of a classification: Moderate to Good or Good to High;</li> <li>receptor is of high ecological importance or National or International value (e.g. Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), habitat for protected species) which may be dependent upon the hydrology of the area of the Proposed Development;</li> <li>receptor is at high risk from flooding above 0.5% Annual Exceedance Probability (AEP) and/or water body acts as an active floodplain or flood defence;</li> <li>receptor is used for public and/or private water supply (including Drinking Water Protected Areas);</li> <li>groundwater vulnerability is classified as High; and</li> <li>if a Groundwater Dependent Terrestrial Ecosystem (GWDTE) is present and identified as being of high sensitivity.</li> </ul>
Medium	<ul style="list-style-type: none"> <li>SEPA Water Framework Directive Water Body Classification: Moderate or is close to the boundary of a classification: Low to Moderate;</li> <li>receptor is at moderate risk from flooding (0.1% AEP to 0.5% AEP) but does not act as an active floodplain or flood defence; and</li> <li>moderate classification of groundwater aquifer vulnerability.</li> </ul>
Low	<ul style="list-style-type: none"> <li>SEPA Water Framework Directive Water Body Classification: Poor or Bad;</li> <li>receptor is at low risk from flooding (less than 0.1% AEP); and</li> <li>receptor not used for water supplies (public or private).</li> </ul>

Sensitivity	Definition
Not Sensitive	<ul style="list-style-type: none"> <li>receptor would not be affected by the Proposed Development e.g. lies within a different and unconnected hydrological / hydrogeological catchments.</li> </ul>

## 2.2 Magnitude of Impact

The potential magnitude of impact would depend upon whether the potential effect would cause a fundamental, material or detectable change. In addition, the timing, scale, size and duration of the potential effect resulting from the Proposed Development are also determining factors. The criteria that have been used to assess the magnitude of impact are defined in **Table 2-2**.

**Table 2-2: Criteria for Assessing Magnitude of Impact**

Magnitude of Impact	Criteria	Definition
High	Results in a loss of attribute	Fundamental (long term or permanent) changes to the baseline hydrology and hydrogeology, such as: <ul style="list-style-type: none"> <li>wholesale changes to watercourse channel, route, hydrology or hydrodynamics;</li> <li>changes resulting in an increase in runoff with flood potential and also significant changes to erosion and sedimentation patterns;</li> <li>major changes to the water chemistry; and</li> <li>major changes to groundwater levels, flow regime and risk of groundwater flooding.</li> </ul>
Moderate	Results in impact on integrity of attribute or loss of part of attribute	Material but non-fundamental and short to medium term changes to the baseline hydrology and hydrogeology, such as: <ul style="list-style-type: none"> <li>some fundamental changes to watercourses, hydrology or hydrodynamics;</li> <li>changes to site resulting in an increase in runoff within system capacity;</li> <li>moderate changes to erosion and sedimentation patterns;</li> <li>moderate changes to the water chemistry; and</li> <li>moderate changes to groundwater levels, flow regime and risk of groundwater flooding.</li> </ul>
Minor	Results in minor impact on attribute	Detectable but non-material and transitory changes to the baseline hydrology and hydrogeology, such as: <ul style="list-style-type: none"> <li>minor or slight changes to the watercourse, hydrology or hydrodynamics;</li> <li>changes to site resulting in slight increase in runoff well within the drainage system capacity;</li> <li>minor changes to erosion and sedimentation patterns;</li> <li>minor changes to the water chemistry of surface runoff and groundwater; and</li> </ul>

Magnitude of Impact	Criteria	Definition
		<ul style="list-style-type: none"> <li>minor changes to groundwater levels, flow regime and risk of groundwater flooding.</li> </ul>
Negligible	Results in an impact on attribute but of insufficient magnitude to affect the use / integrity	No perceptible change to the baseline hydrology and hydrogeology, such as: <ul style="list-style-type: none"> <li>no alteration or very minor changes with no impact to watercourses, hydrology, hydrodynamics, erosion and sedimentation patterns;</li> <li>no pollution or change in water chemistry to either groundwater or surface water; and</li> <li>no alteration to groundwater recharge or flow mechanisms.</li> </ul>

### 2.3 Significance of Effect

The sensitivity of the receiving environment together with the magnitude of the impact determines the significance of the effect, which can be categorised into level of significance as identified in **Table 2-3**. This also considers good practice measures implemented and embedded as part of the design and construction of the Proposed Development and use of professional judgement where appropriate.

The table provides a guide to assist in decision making. However, it should not be considered as a substitute for professional judgment and interpretation. In some cases, the potential sensitivity of the receiving environment or the magnitude of potential impact cannot be quantified with certainty and, therefore, professional judgement remains the most robust method for identifying the predicted significance of a potential effect.

**Table 2-3: Significance of Effect**

Magnitude of Impact	Sensitivity of Receptor			
	High	Medium	Low	Not Sensitive
High	<b>Major</b>	<b>Major</b>	<b>Moderate</b>	Negligible
Moderate	<b>Major</b>	<b>Moderate</b>	Minor	Negligible
Minor	<b>Moderate</b>	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Effects of ‘**major**’ and ‘**moderate**’ significance are considered to be ‘significant’ in terms of the EIA Regulations. Minor and negligible effects are not considered significant.

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