



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

3

**Appendix 14-D: Materials and
Waste Impact Assessment
Methodology**

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Prepared for:

Fosse Green Energy Limited

Prepared by:

AECOM Limited

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1. Materials and Waste Impact Assessment Methodology

1.1 Introduction

- 1.1.1 This appendix presents the methodology for the assessment of minerals and waste (Section 14.5 in **PEI Report Volume 1, Chapter 14: Other Environmental Topics**). It presents the criteria and thresholds for determining receptor sensitivity, magnitude of predicted impacts, and the significance of effects.

1.2 Sensitivity

Materials

- 1.2.1 The sensitivity of materials relates to the availability and type of construction material to be consumed by the Proposed Development. The IEMA Guidance (Ref 1) criteria described within **Table 1** is used to determine the sensitivity of materials.

Table 1: Proposed Development Materials Receptor Sensitivity

Effects	Criteria for Materials Receptor Sensitivity
Negligible	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock. <i>And/or</i> are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials. *
Low	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock. <i>And/or</i> are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials.
Medium	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock.

Effects	Criteria for Materials Receptor Sensitivity
	<i>And/or</i> are available comprising some sustainable features and benefits compared to industry-standard materials.
High	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to suffer from known issues regarding supply and stock. <i>And/or</i> comprise little or no sustainable features and benefits compared to industry-standard materials.
Very High	On balance, the key materials required for the construction of the Proposed Development are forecast are known to be insufficient in terms of production, supply and/or stock. <i>And/or</i> comprise no sustainable features and benefits compared to industry-standard materials.
<i>* Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise reused, secondary or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.</i>	

Waste

- 1.2.2 The sensitivity of waste relates to availability of landfill capacity in the absence of the Proposed Development as outlined in the IEMA Guidance (IEMA, 2020) “landfill capacity is recognised as an unsustainable and increasingly scarce option for managing waste”. The sensitivity of landfill capacity is assessed based on a review of historic landfill void capacity trends where available and information from relevant policy documents.
- 1.2.3 The criteria described within **Table 2** and **Table 3** is used to determine the sensitivity of landfill capacity.

Table 2: Inert and Non-hazardous Landfill Capacity Sensitivity

Effects	Criteria for inert and non-hazardous landfill capacity sensitivity
Negligible	Across construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to remain unchanged or is expected to increase through a committed change in capacity.

Effects	Criteria for inert and non-hazardous landfill capacity sensitivity
Low	Across construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce minimally by <1% as a result of wastes forecast.
Medium	Across construction and/or operation phases, the baseline/future baseline (i.e., without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce noticeably by 1-5% as a result of wastes forecast.
High	Across construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to reduce considerably by 6-10% as a result of wastes forecast.
Very High	Across construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional inert and non-hazardous landfill capacity is: • expected to reduce very considerably (by >10%); • end during construction or operation; • is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.

Table 3: Criteria for hazardous landfill capacity sensitivity

Effects	Criteria for Materials Receptor Sensitivity
Negligible	Across the construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is expected to remain unchanged or is expected to increase through a committed change in capacity.
Low	Across the construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is expected to reduce minimally by <0.1% as a result of wastes forecast.
Medium	Across the construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is expected to reduce noticeably by 0.1-0.5% as a result of wastes forecast.

Effects Criteria for Materials Receptor Sensitivity

High	Across the construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is expected to reduce considerably by 0.5-1% as a result of wastes forecast.
Very High	Across the construction and/or operation phases, the baseline/future baseline (i.e. without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is: • expected to reduce very considerably (by >1%); • end during construction or operation: • is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand.

1.3 Magnitude of Impact

- 1.3.1 The magnitude of impact describes the degree of variation from the baseline conditions as a result of the Proposed Development. The IEMA guidance (Ref 1) for assessing the magnitude of impact from materials comprises a percentage-based approach that determines the influence of construction materials use on the baseline national demand from the construction of the Proposed Development. The criteria used to assess the magnitude of impact for materials are provided in **Table 4**.

Table 4: Materials Magnitude of Impacts

Effects	Criteria for Materials Magnitude of Impacts
No change	Consumption of no materials is required.
Negligible	Consumption of no individual material type is equal to or greater than 1% by volume of the national* baseline availability.
Minor	Consumption of one or more materials is between 1-5% by volume of the national* baseline availability; and The development has the potential to adversely and substantially** impact access to one or more allocated mineral site (in their entirety), placing their future use at risk.
Moderate	Consumption of one or more materials is between 6-10% by volume of the national* baseline availability; and One allocated mineral site is substantially** sterilised by the development rendering it inaccessible for future use.
Major	Consumption of one or more materials is >10% by volume of the national* baseline availability; and

More than one allocated mineral site is substantially**
sterilised by the development rendering it inaccessible
for future use.

*a national baseline is used in the absence of regional construction material consumption data.

**justified using professional judgement, based on the scale and nature of the allocated mineral site being assessed.

1.3.2 The IEMA Guidance (Ref 1) methodology for assessing the magnitude of impact for waste comprises a percentage-based approach that determines the influence of waste generation from the construction of the Proposed Development on the baseline landfill capacity. The criteria used to assess the magnitude of impact for resources and waste are provided within **Table 5** and **Table 6**.

Table 5: Inert and Non-hazardous Waste – Magnitude of Impact

Effects	Criteria for Waste Magnitude of Impacts
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by <1%.
Minor	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by 1-5%.
Moderate	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by 6-10%.
Major	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by >10%.

- forecast as the worst-case scenario, during a defined construction and/or operational phase.

Table 6: Hazardous waste – magnitude of impact

Effects	Criteria for Waste Magnitude of Impacts
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by <0.1%.
Minor	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by <0.1-0.5%.
Moderate	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by <0.5-1%.
Major	Waste generated by the development will reduce Expansive Study Area landfill capacity baseline [#] by >1%.

forecast as the worst-case scenario, during a defined construction and/or operational phase.

1.4 Significance of Effects

1.4.1 **Table 7** describes the effect thresholds used in determining the significance of potential effects, whilst **Table 8** indicates which effects are deemed to be significant. Materials and waste have specific IEMA Guidance (Ref 1 and does not use the thresholds outlined in **PEI Report Volume 1, Chapter 5: EIA Assessment Methodology and Consultation**.

Table 7: Effect Thresholds

		Magnitude of Impact				
Sensitivity of receptor		No Change	Negligible	Minor	Moderate	Major
	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

Table 8: Significance of Effects

Effect	Materials	Waste
Neutral	Not Significant	Not Significant
Slight		
Moderate	Significant	Significant
Large		
Very Large		

2. References

- Ref 1 IEMA (2020). IEMA Guide to: Materials and Waste in Environment Assessment, Guidance for a Proportionate Approach.