



ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION



**KNOCKHARLEY LANDFILL LTD.**

**ENVIRONMENTAL IMPACT ASSESSMENT REPORT  
(EIAR) FOR THE PROPOSED DEVELOPMENT AT  
KNOCKHARLEY LANDFILL**

**VOLUME 2 – MAIN EIAR**

**CHAPTER 15 – MATERIAL ASSETS**

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Knockharley Landfill Ltd.  
Kentstown, Navan, Co. Meath





# TABLE OF CONTENTS

## Page

<b>15 MATERIAL ASSETS</b> .....	<b>1</b>
15.1 INTRODUCTION.....	1
15.2 STUDY AREA.....	1
15.3 METHODOLOGY.....	1
15.4 EXISTING ENVIRONMENT.....	1
15.4.1 <i>Utilities Infrastructure</i> .....	2
15.4.2 <i>Buildings and Other Structures</i> .....	2
15.4.3 <i>Non- Renewable Resources</i> .....	2
15.4.4 <i>Renewable Resources</i> .....	3
15.5 SUMMARY OF KEY POSSIBLE IMPACTS .....	3
15.5.1 <i>Utilities Infrastructure: Direct &amp; Indirect</i> .....	3
15.5.2 <i>Buildings and Other Structures: Direct &amp; Indirect</i> .....	4
15.5.3 <i>Non-renewable Resources: Direct &amp; Indirect</i> .....	5
15.5.4 <i>Renewable Resources: Direct &amp; Indirect</i> .....	5
15.6 MITIGATION MEASURES.....	6
15.6.1 <i>Construction Phase Mitigation Measures</i> .....	6
15.6.2 <i>Operational Phase Mitigation Measures</i> .....	6
15.7 RESIDUAL IMPACTS AFTER MITIGATION.....	6
15.8 MONITORING .....	6
15.9 CONCLUSION & SUMMARY.....	6
15.10 REFERENCES.....	7

## LIST OF TABLES

Page

TABLE 15-1: RELEVANT MATERIAL ASSETS .....	1
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## 15 MATERIAL ASSETS

### 15.1 Introduction

This section examines existing material assets in the area of the proposed development. It predicts the impacts that may occur on these assets and the measures proposed to mitigate these effects. Consideration is given to both the construction and operational phases of the development.

### 15.2 Study Area

This assessment is based on material assets which have the potential to be directly impacted by the proposed development and therefore are those that occur within the immediate vicinity of the proposed development location.

### 15.3 Methodology

A desk-top study was undertaken to outline the material assets in the existing environment. In order to assess the impacts of the proposed development on material assets, a review of the proposed development to identify potential impacts on material assets was undertaken and the significance of these impacts assessed.

### 15.4 Existing Environment

The EPA in their *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, Draft* (2017) and as per Directive 2014/52/EU states that "Material assets can now be taken to mean built services and infrastructure".

Together with the EC document, *Guidance Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report* (2018), the following are determined to be material assets, see Table 15.1.

**Table 15-1: Relevant Material Assets**

Material Assets in this chapter	Material Assets in other chapters
<ul style="list-style-type: none"> <li>Utilities (water supplies, sewage, power systems etc.)</li> <li>Non-renewable resources (e.g. minerals, soils)</li> <li>Renewable resources (hydraulic head, wind exposure)</li> <li>Buildings and Other Structures</li> </ul>	<ul style="list-style-type: none"> <li>Roads (Refer Chapters 6 and 8 of this EIAR)</li> <li>Traffic (Refer to Chapter 8 of this EIAR)</li> </ul>

Buildings and other structures within the planning boundary are addressed in Chapter 2 - Description of the Development of Volume 2 of this EIAR. Land use is discussed in Chapter 6 – Population and Human Health in Volume 2 of this EIAR. Vibration is addressed in Chapter 9 – Noise and Vibration in Volume 2 of this EIAR.

This chapter will therefore focus on remaining material assets not addressed elsewhere in this EIAR, i.e. utilities, buildings and other structures outside the planning boundary, non-renewable resources and renewable resources.

### 15.4.1 Utilities Infrastructure

Utilities infrastructure is necessary to ensure that power (electricity / gas), water and amenity services, such as telecommunications and sewer collection, are provided to communities in a reliable consistent manner. Due to a community's dependency on such sources, any disruption to a utility supply can have a negative impact.

A number of utility services are located within the site area. Existing overhead power lines (see Drawing No, LW14-821-01-P-0000-002 Existing Site Layout in Volume 4 of this EIAR), are present at the following locations:

- 220 kVA running north south and adjacent to the western boundary of the landfill footprint
- 20 kVA running north south on the eastern boundary parallel to the existing local road with spurs to:
  - An ESB substation exporting power from the landfill gas compound to a 20kVA line
  - An ESB substation importing power to the administration building

The 20 kV line provides electricity to the local community as well as supplying the existing landfill site.

There is an existing Bord Gais gas pipeline running west to east through the south of the site just south of the existing landfill footprint and north of the existing surface water attenuation pond.

The existing gas and power lines are shown in Drawing No.'s LW14-821-01-P-0000-002 Existing Site Layout in Volume 4 of this EIAR.

Telecommunications are provided to the local community and also service the main administration buildings onsite. A source of potable water for use in the canteen, welfare facilities and for general site cleaning is sourced from the mains supply. This water source also provides water to a fire hydrant onsite.

There is no foul sewer service in the area. All foul effluent generated from administration welfare facilities is collected onsite and passed through a Bio-Cycle treatment unit. Any effluent from this unit is discharged to the leachate lagoon and is tankered offsite for further treatment in a wastewater treatment plant.

The Meath County Development Plan 2013-2019 states that *"Kentstown Village is currently served by Kentstown waste water treatment plant. This plant has been designed to cater for a design capacity of 600 population equivalent (PE) and there is currently limited capacity available. There are no immediate plans to upgrade the waste water treatment plant. The public water supply in Kentstown is served by the East Meath Water Supply Scheme. There is a total capacity to cater for 500 PE. There is currently limited capacity available"*.

### 15.4.2 Buildings and Other Structures

The entire development site and a number of immediate surrounding agricultural fields are owned by the applicant; Knockharley Landfill Ltd. Access is via a dedicated entrance off the N2 national primary route. Buildings and other structures within the planning boundary are discussed in Chapter 2 -Description of the Development in Volume 2 of this EIAR.

A number of dwellings adjacent to the development site boundary are also owned by the applicant, Knockharley Landfill Ltd. All dwellings owned by the applicant are shown within the blue ownership boundary on Drawing No. LW14-821-01-P-0000-002 Existing Site Layout in Volume 4 of this EIAR and all other dwellings and structures near the boundary of the facility are shown.

### 15.4.3 Non- Renewable Resources

While there are a number of sources of quarries and pits in the wider surrounding area, the site itself is not a source of minerals or aggregates. The geology of the site consists of gley topsoil derived from shale and sandstone parent material and the topsoil is underlain by glacial till commonly referred to as boulder clay.

Excavated material has been reused onsite to form the landfill liner or construct internal berms and access roads. As described in Chapter 2 – Description of the Development in Volume 2 of this EIAR, excavated soils won from the construction of the IBA<sup>1</sup> facility, as well as future cells constructed in the currently permitted landfill area, will be used in the construction of the screening berms installed along the western, northern and eastern flanks of the site.

Fossil fuel use at the site in 2017 was 426 m<sup>3</sup> of light fuel oil, while 4,180 m<sup>3</sup> of water and 170 MWh of electricity was used.

#### 15.4.4 Renewable Resources

The existing site itself is a renewable energy source. There is a landfill gas utilisation plant on site, which has been operational since the mid 2000's. Landfill gas engines in the utilisation plant allow the landfill gas produced onsite to be utilised in the production of renewable electricity for export to the national grid. In 2017, renewable electricity output from the gas engines was 18,872 MWh.

There is 37.7 ha of existing commercial forestry on site. The extent of the existing forestry is shown on Drawing No. LW14-821-01-P0050-003 Existing Forestation, Proposed Felling and Compensatory Planting in Volume 4 of this EIAR.

There is planning permission for a solar farm development on the capped area of the landfill but there is no infrastructure in place currently.

## **15.5 Summary of Key Possible Impacts**

### 15.5.1 Utilities Infrastructure: Direct & Indirect

#### **Construction Phase Impacts (Direct & Indirect)**

There are no potential direct or indirect impacts on wastewater during the construction phase as chemical toilet systems will be provided within the construction compound, thus not requiring sewer connection. Mobile telecoms shall be also utilised.

There are potential slight, direct impacts in the absence of mitigation measures on power lines during construction on site. There is a 220 kV ESB line running across the site along the western flank of the landfill. Construction activities will take place near the power lines and in the absence of appropriate controls, could directly damage a power line, potentially creating a temporary power cut to the site and the local community.

There will be a direct, slight impact on power supply to the landfill administration buildings and potentially within the wider locality for a short period of time resulting from the relocation of the existing 20 kV ESB lines that run along the eastern boundary of the site, to facilitate berm construction directly to the east of the IBA facility and during connection of the two proposed ESB sub-stations. The key energy resource on site during construction will be diesel and the use of electricity will only increase marginally.

Similarly, unmitigated excavation activity near the Bord Gais pipeline onsite has the potential to interrupt gas transmission through the pipeline.

#### **Operational Phase Impacts (Direct & Indirect)**

Direct impacts on utilities resulting from the operational phase of the proposed development will be slight. Power supply will be provided through the dedicated ESB sub-stations onsite.

Electricity consumption associated with the proposed development activities will increase compared to the current consumption. Based on other similar composting plants, it is estimated that the electricity usage will be approximately 1,000 MWh. There will also be an increased demand for electricity for the management of leachate from the proposed development. This is estimated at 450 MWh based on the current electricity usage at the site.

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<sup>1</sup> IBA Incinerator Bottom Ash

The total electricity consumption will be slightly greater than the average large business requirement and approximately half of an industrial facility's annual requirement. The impact on non-renewable resources will be slight.

An indirect impact is envisaged at wastewater treatment plants in the wider region, resulting from the increased volumes of leachate produced onsite and tankered offsite.

However, with onsite pre-treatment the contaminant loading will be reduced, thus increasing the range of potential facilities that may accept this leachate and reducing the 'loading' at facilities where it is currently accepted and may be accepted in the future.

### 15.5.2 Buildings and Other Structures: Direct & Indirect

#### **Construction Phase Impacts (Direct and/or Indirect)**

There will be no direct or indirect impacts on buildings and other structures that are not owned by the applicant, nor will there be any direct or indirect impacts on ownership and access to lands during the construction phase of the proposed development as the applicant has full ownership of the site area.

#### **Operational Phase Impacts (Direct and/or Indirect)**

For the same reason as outlined above, there will be no direct or indirect impacts on buildings and other structures not owned by the applicant or to ownership and access to lands during the operational phase of the proposed development.

However, there is a perception that values of properties owned by others will be depressed by the proximity to a landfill.

The view expressed in the ABP Inspector's Report (planning permission reference 01/5006, An Bord Pleanála reference PL17.125891) with regard to the potential for property devaluation at Knockharley was that it was:

*"likely that with strict environmental controls in place and the visual integration of the site within the surrounding landscape that perceived disamenities and corresponding property devaluation would be of a short-term nature only".*

This is reiterated in the ABP Inspectors Report for the 2006 planning application (planning permission reference NA/ 60336, An Bord Pleanála Reference PL 17.220331) where the inspector repeats the previous reports conclusion that:

*"perceived disamenities and corresponding property devaluation would be of a short-term nature only" and that "In the context of the permitted landfill and the location of the proposed extension, it is considered that the inclusion of the triangular shaped area to the north west will have no significant impact on the value of the properties owned by Faulkner & Doonan to the east of the site."*

It was accepted in the An Bord Pleanála report for the original planning application that tonnage-based community levy would have a positive effect on property values (planning report July 2002, An Bord Pleanála reference PL17.125891).

There is no evidence that property prices in this part of County Meath are underperforming compared with other similar parts of the country.

The proposed development is located within the existing landfill site boundary, which is predominantly set back from the local road network. There will be no additional land loss by the proposed development. As the proposed development is located on an existing landfill site, impacts on property values are not predicted.



### 15.5.3 Non-renewable Resources: Direct & Indirect

#### **Construction Phase Impacts (Direct and/or Indirect)**

The construction of the proposed development will directly utilise non-renewable resources in the form of concrete, aggregates and other construction materials. However, resources will be minimised as far as possible and used efficiently onsite. As far as possible, sustainable resources will also be sourced from local sources. The proposed screening berms will be constructed from site won material.

The structural elements of the proposed development can be considered moderate sized development and therefore the use of virgin resources will not be significant. Water as a non-renewable resource will be used during the construction phase but the impact on supply from the construction phase will be negligible.

As identified, excavated soils will be utilised onsite in capping, temporary cover and particularly berm construction, thus maximising resource use.

Diesel fuel consumption during the construction phase is estimated at 212,000 litres. Diesel usage during construction, in the context of regional or national diesel consumption, will be negligible (0.009% of national diesel use for road transport<sup>2</sup>).

#### **Operational Phase Impacts (Direct and/or Indirect)**

The rationale in relation to the development of the IBA cells is outlined in Chapter 2 – Description of the Development in Volume 2 of the EIAR, which identifies the scope for potential future winning of the IBA material placed within the cells. In the event of markets for the re-use of IBA material developing in the future, this would constitute a sustainable use of resources and minimise the use of virgin materials in projects to which this re-use may be applied e.g. road construction projects. This would realise an indirect, positive impact on non-renewable resources.

Diesel consumption per year assuming the average plant consumes on average 50 l/day average 275 days will be 151,250 l annually. In the context of regional or national diesel consumption, the impact is negligible (0.006% of national diesel use for road transport).

### 15.5.4 Renewable Resources: Direct & Indirect

#### **Construction Phase Impacts (Direct and/or Indirect)**

There will be a short term direct loss of renewable resources on site from the proposed felling of 12.5 ha of commercial forestry in order to facilitate construction of the screening berms and some other infrastructure on site. The felling will be carried out in phases over a 5 year period. The berms will be replanted in commercial forestry, and where it is not possible to replant due to infrastructure development, compensatory planting is proposed. The areas of replanting and compensatory planting are shown on Drawing No. LW14-821-01-P0050-003 Existing Forestation, Proposed Felling and Compensatory Planting in Volume 4 of this EIAR. As the forestry is commercial, the felling and replanting cycle would take place regardless of the proposed development.

#### **Operational Phase Impacts (Direct and/or Indirect)**

The proposed development seeks to increase the volume of waste for landfilling, but a significant portion of waste to be placed within the currently permitted cells will not display a high landfill gas generation potential. There will be no landfill gas generation potential associated with IBA material, given its nature.

However, it is expected that landfill gas generation will increase slightly in the short term, resulting in its capture within the existing landfill gas collection network, directly and positively resulting in increased generation of renewable electricity at the Knockharley Landfill site.

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<sup>2</sup> CSO 2016 – 2,385 ktoe diesel used in road transport

## 15.6 Mitigation Measures

### 15.6.1 Construction Phase Mitigation Measures

Given that the impacts arising from the relocation of the power lines on site during the construction phase will be temporary and slight, no specific mitigation measures are proposed, other than those typically undertaken by ESB Networks in such an event, which will include prior notification of impacts to end users, as well as all health and safety precautions.

The contractor will be required to take measures in accordance with the ESB Code of Practice on Avoiding Danger from Overhead Electricity Lines.

Mitigation measures to be applied to prevent potential for impact on the Bord Gais pipeline centre on appropriate method statements by Contractors and clear delineation of the route on site.

Insofar as possible, non-renewable resources associated with construction will be sourced locally in order to minimise transportation distances and impacts on climate change.

It is not expected that there will be an interruption to public utilities. The proposed re-routing of the 20 kv overhead line will be undertaken in consultation with the relevant utility infrastructure supplier and will comply with their requirements and all relevant codes of practice.

No mitigation measures are required in relation to buildings, other structures, ownership and access.

The total area of commercial forestry replanting and compensation planting proposed is 41 ha. The existing area is 37.7 ha. The compensatory planting will mitigate the loss of commercial forestry in areas of the site which will not be suitable for replanting.

### 15.6.2 Operational Phase Mitigation Measures

Following the completion of the construction phase and associated mitigation measures, there will be no further mitigation measures required with respect to the operational phase.

## 15.7 Residual Impacts after Mitigation

There will be no residual impacts on the infrastructural material assets of the study area.

While non-renewable resources, fossil fuels and water are required onsite during the construction and operational phases and will have a negligible residual depletion impact, it is not considered that there will be any further residual impacts associated with the infrastructural material assets of the location assessed in this section.

## 15.8 Monitoring

During the construction phase, all utility services will be marked and monitored to ensure there is no disturbance or disruption to the services.

No monitoring is required for the material assets assessed in this section during the operational phase.

## 15.9 Conclusion & Summary

The proposed development is located on an existing landfill site, therefore impacts on property values are not predicted. Perceived disamenities and corresponding property devaluation, if any, would be of a short-term nature only.

A number of utility services are identified onsite. The contractor will be required to take measures in accordance with the ESB Code of Practice on Avoiding Danger from Overhead Electricity Lines.

Where electrical utilities are required to be connected with, and re-routed, this will be undertaken in consultation with the relevant utility infrastructure supplier and will comply with their requirements.

The applicant has full ownership of the site area and access road in which the proposed development is located. Therefore, there will be no impacts on buildings and structures outside the ownership boundary or on ownership and access to lands from this proposed development.

The use of non-renewable resources as part the proposed development will be minimised as far as possible through efficient use of resources and the use of sustainable resources, where possible. In fact, the proposed development can benefit from the use of non-renewable resources through maximising the re-use of excavated material, particularly in berm construction, as well as in the potential future use of IBA material accepted at the facility, in off-site application, should a market for these applications develop.

## 15.10 References

EPA, Guidelines on Information to be Contained in Environmental Impact Assessment Reports (2018), EC, Guidance Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (2018).