17. MATERIAL ASSETS

17.1 INTRODUCTION

This chapter evaluates the impacts, if any, which the development will have on Material Assets as defined in the Environmental Protection Agency (EPA) 'Advice Notes on Current Practice (in the preparation of Environmental Impact Statements'), 2003.

This chapter has been prepared based on a review of previous assessments of the site, the most recent of which was completed as part of an EIS and planning application submitted in 2009. This chapter will assess the impact of proposed amendments to the existing planning permission as described in Chapter 1, on the material assets of the site and environs.

As the primary facility has now been constructed, a number of mitigation measures recommended in previous EIS's have now been implemented. This chapter therefore represents an update of the 2009 assessment to include the results of mitigation measures as implemented and any further mitigation measures now required.

Material assets are defined in the Environmental Protection Agency (EPA) advice notes on current practice in the preparation of Environmental Impact Assessments, 2003 as '*resources that are valued and that are intrinsic to specific places, they may be either human or natural origin and the value may arise for either economic or cultural reasons*'. The assessment of cultural heritage is discussed under Chapter16; therefore, this Chapter will evaluate the economic assets only.

Economic assets will be discussed under the following areas including:

- Ownership and access
- Local settlement
- Electricity supply
- Traffic
- Water Supply and Usage
- Waste Management
- Agriculture
- Tourism
- Natural Resources

17.2 OWNERSHIP AND ACCESS

Indaver Ireland is the Irish Branch of Indaver NV and was granted full planning permission in 2007 for the development of a 70 MW Waste to Energy Plant in Carranstown, Duleek, Co Meath. Following a grant of permission for detailed design changes in 2009, the plant has transferred into the ownership of Indaver Ireland Limited, the trading company in Ireland owned by Indaver NV. Indaver Ireland Limited is now applying for planning permission for a number of further amendments to the development as described in Chapter 1.

The recently constructed facility is located on an area of approximately 10 hectares (25 acres) which had been previously used for agricultural purposes. The developed portion of the site is approximately 2 hectares (5 acres), with the remaining undeveloped areas of the site landscaped to minimise the visual impact of the facility. This environmental impact assessment evaluates the 10 hectare (25 acres) site in its entirety.

17.3 LOCAL SETTLEMENT

The nearest local settlements adjacent to the development are the town of Duleek and the village of Donore in County Meath. Duleek is located approximately 2.7 km to the south west of the facility and Donore is approximately 2.6km northwest of the proposed site. These local settlements are evaluated in detail in Chapter 6 Human Beings. Drogheda town is located about 4km to the north east of the site. The local settlements within a 3km radius of the proposed facility are discussed in Chapter 6 Human Beings.

17.3.1 Property Prices

In developments of all sizes, types and scales there are often short-term impacts on adjoining assets and properties. This is due to the precautionary nature of people to purchase at a time of construction. Since the facility was granted planning permission, Ireland has experienced a major economic recession and property prices have fallen nationwide. At present it is difficult to assess whether the construction of the facility has had an impact on local property prices as very few transactions are taking place. Overall it is considered unlikely that the proposed amendments will impact on property prices now primary construction is complete. It is likely that the perceived belief that there will be long-term negative impact due to the location of the incinerator was based on mis-information regarding the facility's impact on public health or the environment.

It is now proposed to accept some additional waste streams at the facility which carry a hazardous EWC codes and hence are classified as "hazardous waste". There may be a further perceived risk of negative

impacts by members of the public associated with the acceptance of these waste streams, but as explained in Chapter 2, these waste streams are mainly commonplace materials (such as empty paint tins, rags, etc).

There are over 350 municipal waste incinerators operating in Europe. In line with the proximity principle, many are located in cities, suburbs and other areas close to the main source of waste generation. To date, it appears that the findings of research to determine whether a waste-to-energy facility will have a significant long-term effect on property prices within the area of the facility have been insignificant or inconclusive. As the proposed amendments are small alterations to the existing plant and remain within the property are not considered to have any negative or positive impact on property values.

17.4 ELECTRICITY SUPPLY

As noted in earlier Chapters of the EIS, the 70 MW Waste to Energy Plant generates approximately 16.56MW of electrical output of which c.2MW is used to meet the electrical demands of the facility itself leaving 14.49MW to be exported to the National Grid.

The waste to energy plant exports electricity to the local electrical distribution system via a 38 kV line to Rathmullan Substation about 2.5km north of the site. The line was installed as an underground cable and has not resulted in any visual impact. The proposed amendments will not have any impact on energy generation or energy usage within the plant.

Please refer to Chapter 5 for more information on the site and scheme description.

17.5 TRANSPORT

Details regarding the road network are discussed under Chapter 13, Traffic.

17.6 WATER SUPPLY AND USAGE

17.6.1 Process Water

The plant uses an effluent free flue gas cleaning process and an air cooled condenser rather than cooling towers and as a result it has a significantly lower water requirement than would otherwise be the case. The water requirement for the process has been reduced from 11.6m^3 per hour to 8.5m^3 per hour. The biggest water requirement is for flue gas cleaning. Process water (for the steam cycle), drinking water, domestic potable water and water for cleaning account for the rest of the demand.

Current water requirements are listed in Table 17.1. Approximately 300 litres per hour of additional water demand is anticipated based on the proposed amendments.

Table 17.1 Water requirement

Use	Quality	Quantity (m^3/hr)
Flue gas cleaning	Well water	3.3
Process (steam cycle)	Well water	1.0
Drinking Water	Potable water	1.0
Cleaning & Domestic Supplies	Well water	1.0
Fire fighting	Well water	0.2
Total		**8.5**

The raw water requirement will be supplied by groundwater abstraction and a small supply of potable water from the local water main. Approximately 1m^3/hr will be required from Meath County Council's water main on the R152 for potable supplies.

Since the installation of the site water supply wells the aquifer has been found to have more than adequate capacity to supply the required quantity of water without any significant impact on groundwater levels. This is further detailed in Chapter 10, Groundwater.

The water used in lime milk preparation and in the cooling process is evaporated and only solid waste is produced. This eliminates any process water discharge from the facility as no aqueous effluent is generated. This is further explained in Chapter 5, Description of Proposed Development.

During shutdowns (once or twice per year), the boiler water system will be drained down. This is clean de-mineralised water and the boiler can hold up to 130m^3. This clean water will be discharged to the stormwater system on site.

17.6.2 Potable Water

The mains water supply piped along the R152 road supplies many of the residential dwellings in the area. The Limestone aquifer in the area is also used by a number of groundwater abstractors (See Chapter 10, Ground Water).

The development uses a small quantity of mains water as a potable supply. This is currently supplied to the site via a 1" connection from the mains water on the R152.

17.6.3 Fire Water/ Water Storage Tank

In the event of a fire breaking out in the bunker, the area of waste on fire can be controlled by placing it into the furnace and covering with a layer of waste. However in the unlikely event of the fire not being detected in time, a number of water cannons located in the bunker will be activated to put it out.

All firewater will be contained in the bunker eliminating the need for a firewater retention pond. There is no additional modification required due to the proposed amendments.

17.6.4 Foul Water

Domestic wastewater from toilets, changing and kitchen areas discharges via the foul drainage system into an on site effluent treatment system which passes through a percolation area to ground. The percolation areas, have been constructed in accordance with the guidelines in the various EPA's Wastewater Treatment Manuals and publications.

A separate foul water management system will be installed to service the new office block (previously a temporary building). This system will also comprise an on site effluent treatment system and percolation area. Details on this system are provided in Chapter 5 Scheme Description.

No trade effluent will be discharged from the site to the local surface water or foul drainage system.

17.6.5 Surface Water

Details of the proposed surface water management system are described in Chapter 11, Surface Water.

17.7 WASTE MANAGEMENT

17.7.1 Construction Phase

Disposal of waste during the construction phase is described in Chapter 18, Construction Activities.

17.7.2 Operational Phase

Provisions for recycling collection bins have been made on site where necessary. Domestic waste generated on site from canteen areas etc will be recycled where appropriate and where disposal is required this will be conducted by Indaver. Hazardous wastes generated on site including cleaning agents, oils, batteries, paints etc will be sent to an Environmental Protection Agency approved waste

disposal company for appropriate disposal/ recovery. The operational waste residues produced in the facility are described in detail in Section 5.6.12

17.7.2.1 Bottom Ash Re-Use Options

This ash residue is deemed to be non-hazardous in accordance with the testing regime agreed with the EPA as part of Indaver's Waste Licence W00167-02. If a market for recycled bottom ash comes available in the future, then an ash recycling plant may be built in Ireland. If such an option were available in Ireland then the bottom ash would be sent there. In the absence of such a facility, the bottom ash will be sent to a licensed non-hazardous waste landfill. EPA licensed landfills located in counties Meath, Louth, Cavan and Monaghan would be suitable for the disposal of this material and the Whiteriver Landfill is currently accepting the bottom ash from the site.

Elsewhere in the EU including Belgium, bottom ash from waste incineration is recovered and used in road construction, as railway ballast or as a substitute covering material on landfill, following treatment in an ash recycling plant. Bottom ash has also been trialed in Taiwan as an aggregate for use in concrete production, asphalt concrete production and bricks. Studies in the UK have found that the fine fraction of MSW bottom ash from the incineration of non-hazardous waste can be processed to form new ceramic materials using conventional ceramic processing technology (Bethanis, et al. 2004).

If the ash is to be used for road construction it must generally be of a different grade (higher quality) than if it were to be disposed of in landfill. At present there is no Irish or European legislation or standard in place to govern the quality of ash for use in roads. This improvement in quality can be achieved by treating the ash in an ash recovery plant. In Germany the quality standard of ash for use in road construction is defined by the Federal Working Group on Waste (LAGA) and is based on leachate tests.

The volume of ash produced by a Waste-to-Energy plant is only 10% of the volume of waste and therefore requires less landfill capacity to dispose of it than sending MSW directly to landfill. In addition, due to the inert nature of the ash it will have less adverse impacts than untreated waste which is currently being landfilled.

For further information regarding ash outputs and handling see Chapter 5, Description of Proposed Development.

17.8 AGRICULTURE

Though the site is located in agricultural surroundings and was a former agricultural site itself, it is not considered that the existing facility or the proposed amendments will have any impact on agriculture in the area. The facility is operated under strictest emissions controls and with full regulatory compliance will ensure no significant negative impacts. The potential impacts of this development to agriculture is addressed in relation to soils and discussed in greater detail in Chapter 10 (Soils and Geology). Likewise the assimilative capacity of air and water and their respective potential impacts are discussed in Sections 7 and 10 respectively. See Chapter 6 for potential impact to human health.

As part of the EPA licence for operation of the facility, the Agency is carrying out a programme of monitoring in the areas around the waste-to-energy facility. The programme includes monitoring of food produce in the vicinity in conjunction with the Food Safety Authority of Ireland.

17.9 TOURISM

Tourism is discussed under Chapter 6, Human Beings.

17.10 THE USE OF NATURAL RESOURCES

In so far as possible, any construction materials required for the proposed amendments will be sourced locally and all imported material used on site will be from approved sources. Further details regarding the construction of the development are outlined in Chapter 18.

Raw materials used during the operation of the facility are being and will be sourced in Ireland where possible with others being imported from mainland Europe or the UK. See Section 5.7 for details of the quantities and types of raw materials used. The usage of raw materials will be minimised, but certain margins of safety with respect to emissions will restrict this initiative somewhat.

17.11 MITIGATION MEASURES

As the facility has now been constructed and the proposed construction amendments relate only to the lands within the site boundary, the proposed development will not result in any significant environmental impacts relating to property prices, land severance, land access or disruption to current agricultural land use.

Impacts and specified mitigation measures regarding agriculture, site utilities, groundwater/ hydrogeology, surface water, road network, local settlement and tourism are discussed and evaluated in Sections 17, 10, 11, 13 and 6 respectively.

Waste management on site will be conducted in accordance with best practice to encourage as much segregation and recycling on site. Any waste removed from site will be by carriers in receipt of valid waste permits and to disposal facilities approved by the EPA.

17.12 RESIDUAL IMPACTS

With the above mitigation measures in place, it is anticipated that neither the limited construction required for the proposed amendments nor the subsequent operation of the amended development will result in any significant negative impacts on the existing economic assets.