EXISTING SITE PLAN SCALE 1:500

NOTES

1. FOR STANDARD NOTES REFER TO DRAWING No. CD\001.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, SERVICES & M.E.A. DRAWINGS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED. LEVELS ARE STRUCTURAL LEVELS IN METRES TO ORDNANCE DATUM. THIS DRAWING MUST NOT BE SCALED.

DRAWING LEGEND :

- SWMH — EXISTING SURFACE WATER SEWER/MANHOLE
- GY — EXISTING ROAD GULLY
- EXISTING WATERMAIN
- EXISTING OVERHEAD HT CABLES (ELEC)
- EXISTING UNDERGROUND LT CABLES (ELEC)
- EXISTING GAS MAIN
- BM — EXISTING BYPASS WATER METER AND CHAMBER
- SV — EXISTING SLUICE VALVE AND CHAMBER
- LANDS WITHIN THE OWNERSHIP OF THE APPLICANT (SITE BOUNDARY)

REV.	DESCRIPTION.	BY.	APPR.	DATE.
B	ISSUED FOR PLANNING	GM	NK	26.04.12
A	ISSUED FOR COMMENT	MC	NK	24.02.12

McElroy Associates
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72 Haddington Road, Ballsbridge, D4.
Tel: 660 9000 Fax: 660 9099
E Mail: info@mea.ie Web: www.mea.ie

CLIENT. INDAVER

PROJECT. WASTE MANAGEMENT FACILITY : CARRANSTOWN CO. MEATH, IRELAND

TITLE. EXISTING SITE PLAN AS PER CURRENT PLANNING PERMISSION

DESIGNED:	CHECKED:	APPR'D:	
NK	NK	NK	
DRAWN:	DATE:	SCALE:	1:500 @ A0 1:1000 @ A2
GM	OCT 2011		
ORG.No.	21098\CD\002	REV.	B

POSSIBLE FUTURE TANK LOCATIONS BEHIND EX. TANKS FOR FUEL OIL AND AMMONIA

ATTENUATION POND

UNDER GROUND TANK

AIR CONDENSER BUILDING

38 KV SUB STATION

TANK

PUMP HOUSE

ASH HANDLING BUILDING

HARDCORED LAYDOWN AREA FOR MAINTENANCE SHUTDOWN

FOR ADDITIONAL INFORMATION ON THE CENTRALISED MAINTENANCE BUILDING REFER TO DWG 21098\CD\011

MAINTENANCE BUILDING

TIPPING HALL

TURBINE AND AUXILIARIES

FLUE GAS TREATMENT

TIPPING HALL ACCESS

110KV OVERHEAD LINES

FOR ADDITIONAL INFORMATION ON THE ELECTRICAL SWITCHGEAR BUILDING ASSOCIATED WITH THE CENTRALISED MAINTENANCE DEPOT REFER TO DWG 21098\CD\011

EXISTING HARDCORED AREA TO BE REMOVED AND LANDSCAPED

FOR ADDITIONAL INFORMATION ON THE OFFICE BUILDING REFER TO DWG 21098\CD\010

INDAVER OFFICES

SEPTIC TANK

PURAFLOW MODULES

PURAFLOW PUMPING CHAMBER

NEW PERCOLATION AREA

FIRE ENGINE TURNING CIRCLE

NEW 4500mm WIDE PAVED ACCESS ROAD TO OFFICES.

PROPOSED PERMANENT HARDCORED AREAS

FOR ADDITIONAL INFORMATION ON THE ELECTRICAL SWITCHGEAR BUILDING ASSOCIATED WITH THE MODULAR OFFICE REFER TO DWG 21098\CD\010

BY-PASS

WEIGH BRIDGE

WEIGH BRIDGE

BY-PASS

Security Building

Carpark

WORKS BUS

1 2 3 4 5 6 7 8

VISITOR COACH

9 10 11 12 13 14 15 16 17 18 19 20 21 22

HARDCORED ACCESS RAMP

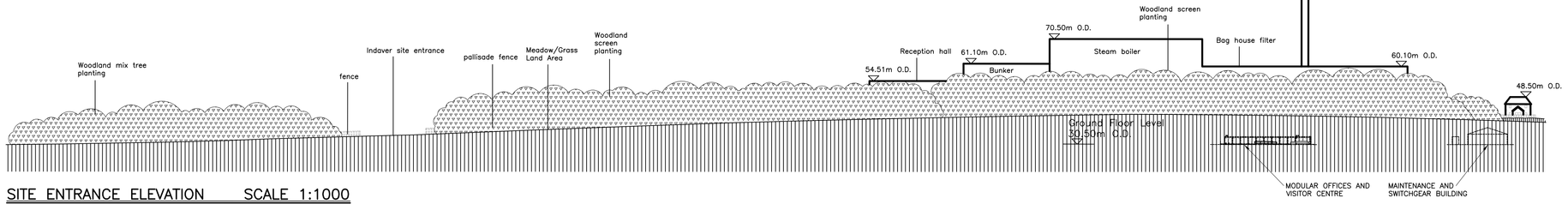
HARDCORED TEMPORARY CARPARKING AREA FOR MAINTENANCE SHUTDOWN

CARPARK EXTENSION (22 NEW SPACES)

LOCATION OF SITE NOTICE

EXISTING HOUSE

PROPOSED SITE PLAN SCALE 1:500



SITE ENTRANCE ELEVATION SCALE 1:1000

NOTES

1. FOR STANDARD NOTES REFER TO DRAWING No. CD\001.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, SERVICES & M.E.A. DRAWINGS.
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DRAWING LEGEND :

- EX. S1.0 — EXISTING SURFACE WATER SEWER/MANHOLE
- DC — PROPOSED DRAINAGE CHANNEL
- EX. RG — EXISTING ROAD GULLY
- EXISTING WATERMAIN
- EXISTING GAS MAIN
- WM — EXISTING BYPASS WATER METER AND CHAMBER
- SV — EXISTING SLUICE VALVE AND CHAMBER
- LANDS WITHIN THE OWNERSHIP OF THE APPLICANT – SITE BOUNDARY
- EXISTING BUILDINGS
- EXISTING HARDSTANDING AREAS
- PROPOSED PERMANENT HARDCORED AREAS
- PROPOSED PERMANENT BUILDINGS AREAS
- NEW PAVED ACCESS ROAD AREAS

BASED ON AS BUILT DRAWING RECEIVED FROM JOHN SISK AND SON ON THE 13/12/2011

REV.	DESCRIPTION.	BY.	APPR.	DATE.
D	ISSUED FOR PLANNING	GM	NK	26.04.12
C	ISSUED FOR COMMENT	MC	NK	24.02.12
B	ISSUED FOR COMMENT	GM	MC	21.12.11
A	ISSUED FOR COMMENT	GM	NK	16.12.11

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CLIENT.
INDAVER

PROJECT.
WASTE MANAGEMENT FACILITY
CARRANSTOWN CO. MEATH, IRELAND

TITLE.
PROPOSED SITE PLAN

DESIGNED:	CHECKED:	APPR'D:
NK	NK	NK

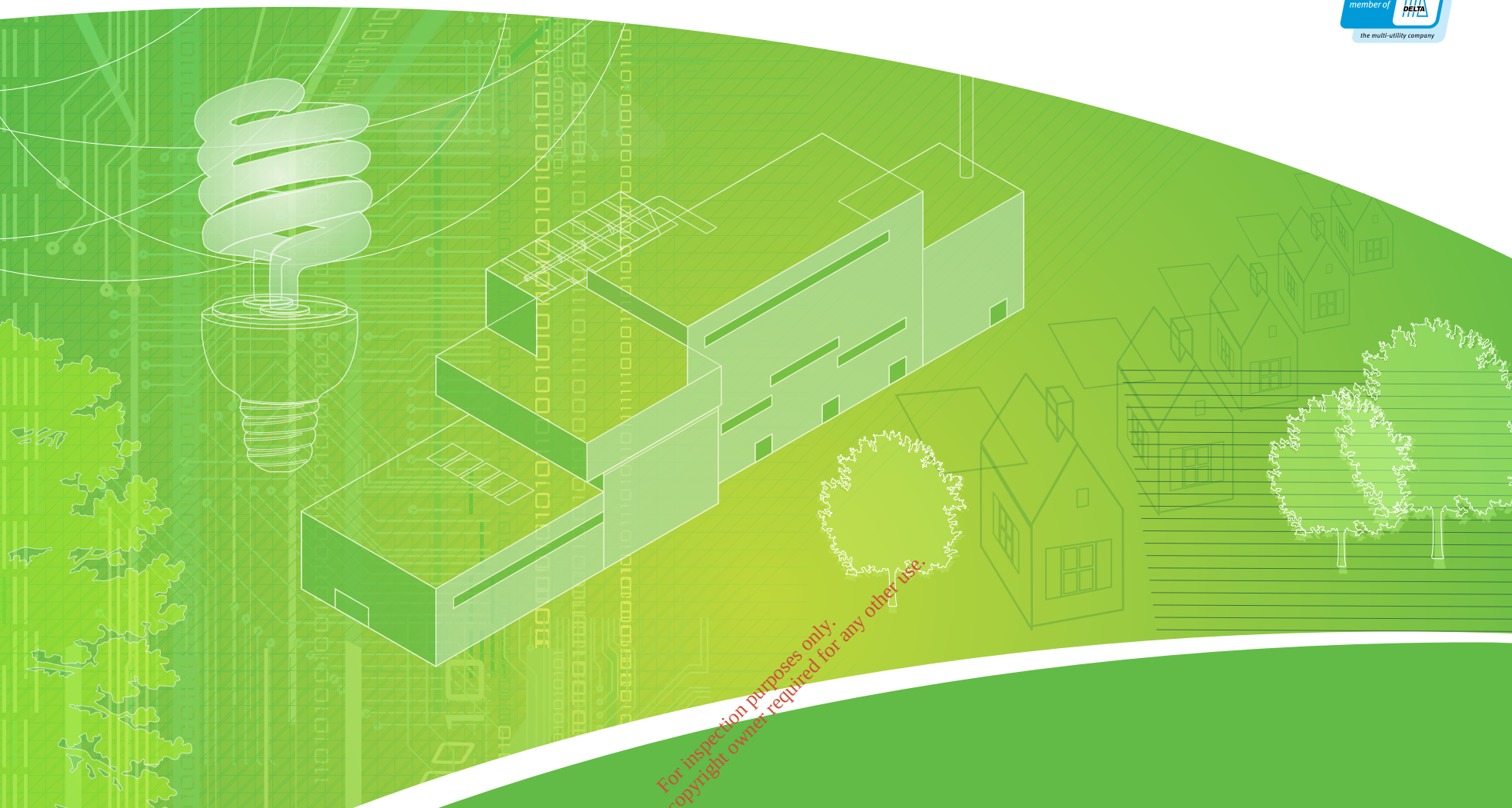
DRAWN:	DATE:	SCALE:
GM	OCT 2011	1:500 @ A0 1:1000 @ A2

DRG.No. 21098\CD\003 REV. D

APPENDIX G

Environmental Impact Statement (2012) submitted

with 17.PA0026 (ring binder)



Meath Waste-to-Energy
Amendment to existing planning permission
Environmental Impact Assessment 2012

TABLE OF CONTENTS

1. INTRODUCTION

This is the Non Technical Summary of an Environmental Impact Statement for a number of proposed amendments to the Indaver Ireland (referred to as Indaver henceforth) waste-to-energy facility at Carranstown, Duleek, Co. Meath. Planning permission (File Reference Number SA/600050, & PL 17.219721) was granted to Indaver Ireland in 2006 for the development of the facility. An amended permission (SA901467) relating to detailed design changes and a reduction in scale of the building was also granted in December 2009. The facility began the commissioning phase in August 2011, and has been fully operational since October 2011. The facility operates under EPA Licence W0167-02 which is also to be reviewed. The site location is shown on Figure 1.1.

The facility was designed and built to accept 200,000 tpa of waste. This was based on an expectation of the average calorific value of Irish residual municipal waste being 9.35MJ/kg. However, since commencing operations it has become apparent that the actual calorific value of Irish waste is much lower than 9.35 MJ/kg and is closer to 8 MJ/kg. This implies that the waste possibly has a higher biodegradable waste content than anticipated.

Similar to other conventional solid fuel power plants, the tonnage throughput of waste-to-energy facilities is defined by the size of the boiler (thermal capacity), the average expected CV of the waste and the number of operating hours per annum. In the Meath WTE facility, the boiler has a design capacity of 70MW. If the waste has a low calorific value, then more waste needs to be processed to achieve the same thermal output. Conversely, if waste has a higher calorific value then less waste is processed to achieve the same thermal output.

As Irish waste currently has a lower calorific value, more waste can be processed at the facility than previously expected to meet the thermal capacity of the boiler. As a result, it is now proposed to accept an additional 20,000 tpa at the Meath WTE facility bringing the total capacity to 220,000tpa.

In addition it is proposed to accept a number of suitable hazardous waste types for treatment in the Meath WTE facility. Most of these are already present in the MSW waste being currently accepted on site, (e.g. paint tins, rags and wipes contaminated with paints or oils), and are treated without difficulty.

The proposed amendments sought by this application in terms of the additional waste types and additional capacity do not result in any significant changes to the nature of the process or waste handling procedures (with the exception of one waste types if granted). The other proposed changes (conversion to permanent status of structures, car parking) require only minor construction works.

Figure 1 Existing Facility (March 2012)

A synopsis of the amendments proposed is presented in Section 1.1 below. The footprint of the facility is approximately 10 hectares (25 acres), located in a general agricultural area between Duleek and Drogheda next to a cement factory and quarry north of the site.

Proposed Amendments

The amendments to the facility are summarised as follows:

- 20,000 tonnes (10%) increase in annual throughput
- Inclusion of additional EWC Codes (hazardous and non hazardous)
- Amendment of waste acceptance hours:

Current	**Proposed**	Period
08:00 – 18:30	**06:00 – 20:00**	Mon - Fri
08:00 – 14:00	**06:00 – 14:00**	Sat

- Unrestricted hours for the dispatch of residues from site
- Future additional capacity ammonia storage tank and fuel oil tank
- Convert hardcore area for contractor parking during construction to permanent status
- Conversion from temporary to permanent status of two structures:
    - Spare Parts Warehouse & associated electrical switchgear building with hard core surround.
    - Single storey modular office block & associated electrical switchgear building and to include:
        - Effluent treatment plant

- Paved roadway (with hard cored area to each side) leading to office block
- 22 additional paved car parking spaces added to existing car park

Company Profile

In 1999 Indaver NV acquired 60% of MinChem Environmental Services Limited, a hazardous waste management company operating in Ireland since 1977. In 2003 Indaver NV acquired the remaining 40% of MinChem and in 2004 changed the name of the company to Indaver Ireland Limited. Today, Indaver Ireland Limited, with offices in Carranstown, Dun Laoghaire, Dublin Port and Cork, employs approximately 125 people and is the company that operates the Meath WTE Facility.

Indaver Ireland Limited are a registered Waste Broker (IRE/AG040/12), and also operate an EPA Licenced (W36-02) Waste Transfer Station and Solvent Recovery facility in Dublin Port. In 2010, Indaver Ireland Limited managed approximately 65,000 tonnes of hazardous waste for its customer base, and exported the majority of this amount to other Indaver Group facilities or external treatment centers.

Indaver Ireland

Indaver Ireland, a wholly owned subsidiary of Indaver NV, was established in 1999 to develop waste infrastructure in Ireland. The branch developed and built the Meath WTE facility and then transferred this to Indaver Ireland Limited to operate. The branch is also trying to develop and build an Industrial waste facility, which includes a hazardous waste incinerator, in Ringaskiddy, County Cork. Information on Indaver's projects can be found on the website **www.indaver.ie**.

Indaver NV Company Profile

Indaver NV, is the Flemish parent company of Indaver Ireland and Indaver Ireland Limited. Indaver is a waste management company that specialises in integrated waste management for industries and households. Indaver recycles, treats and disposes of both domestic and industrial waste. Advice on the prevention of waste is an integral part of the Indaver service.

The Dutch multi utility company, Delta is the majority shareholder of Indaver NV with a 75% shareholding. Flemish Environmental Holding is the holding company of the Government of Flanders and it has a 16% stake in Indaver NV. The remaining shares are held by a number of leading private companies in Flanders. The Indaver group plays a leading role in the implementation of the Flemish Government Waste Policy. The company employs over 800 people and has operations in six European countries. In 2010, Indaver offered a solution for the management of around 4.3 million tonnes of waste in its own processing installations as well as in external centres.

Indaver's Activities

Indaver NV is involved in a comprehensive range of waste management activities at its various facilities in Flanders, and elsewhere in Europe. More detail can be obtained from the Indaver Group Sustainability Report 2010 on www.indaver.ie, (Sustainability)

All the company's facilities are licensed by the regulatory authorities in the region in which they operate. Indaver is striving to have all its facilities accredited to the ISO 9002 Quality Assurance System, the ISO 14001 Environmental Management System and the OHSAS 18001 Health and Safety Standard. Indaver NV was the first waste management company in Flanders (and among the first in Europe), to attain accreditation to the ISO 14001. These certifications are independently audited on a regular basis to ensure company compliance.

An integral part of the above certifications is clear and regular communications with members of the public, customers, suppliers and regulatory authorities. Indaver is committed to permanent and open dialogue regarding environmental matters.

Pre-Planning Communications Programme

Indaver Ireland believes in a policy of openness and dialogue between the company and the local community. Indaver has undertaken a consultation campaign on the proposed amendments to the existing facility.

Further details outlining the principle changes to the waste-to-energy facility are available on the Indaver website www.indaver.ie Indaver will make themselves available to meet up with any parties throughout the planning process.

On-going Communications Programme

Indaver Ireland believes in a policy of openness and dialogue between the company and the local community. This openness and dialogue has started and Indaver Ireland will maintain this policy of openness throughout the construction phase and the lifetime of the facility. Through Indaver Ireland's website (www.indaver.ie) interested parties can register with Indaver Ireland to obtain regular updates on further developments of the project.

2. BACKGROUND TO THE PROJECT

Need for the Scheme

The need for the existing facility with 200,000 tpa capacity was established in the planning permission PL17.219721 granted for the facility in October 2007 and again in planning permission SA/901467 granted in December 2009. The reasons and considerations given in the final permission referred to:

- the national waste management policy framework and strategy as set out in Government Policy Statement Taking Stock and Moving Forward (2004)
- the National Development Plan (2007-2013) provisions in regard to waste management
- the National Strategies on Biodegradable Waste (2006) and Climate Change (2007-2012)
- the Waste Management Strategy for the North-East region as set out in the current North-East Regional Waste Management Plan (2007).

There has been no change in policy. The only changes in legislation have reinforced the position of waste-to-energy in priority over disposal options, including landfill.

In the EIS submitted in 2009, the position of waste-to-energy in the waste hierarchy ahead of landfill disposal was due to be updated in the national policy framework. While national legislation has been adopted that cements this position in line with the Waste Framework Directive, an update in national waste policy is still pending. Overall, there have been some key legislative developments but no changes yet to waste and energy policies and plans since the 2009 planning decision.

Site Selection

An assessment of alternative locations for the proposed facility was undertaken as part of the EIS prepared in 2006. The assessment comprised the consideration of a number of site selection criteria, both environmental and technical to determine whether the application site or a number of alternative sites were suitable sites for the development of the proposed facility.

For the purposes of this application it is considered, given the existing planning permission for the proposed development, that the site location is established. In 2006 it was submitted that the subject site was a suitable location to operate a waste to energy facility and was the best available site to Indaver. In granting planning permission both Meath County Council (in 2006) and the Board (in 2007) obviously agreed with the concept of waste to energy and that the chosen site was a suitable location to operate such a facility.

The increase in tonnage throughput of 20,000 tpa would be too small for a standalone facility on a new site. Co-Location with the only available existing facility for thermal treatment is the most sensible choice. The other proposed changes are site or facility specific and cannot be carried out elsewhere. The alternatives are considered in more detail in Section 3.

3. ALTERNATIVES

As part of the Environmental Impact Assessment (EIA) process alternatives are typically considered on the following levels;

- Alternative Locations
- Alternative Thermal Treatment Technologies
- Alternative Waste Management Strategies
- Alternative Energy Recovery and Gas Cleaning Systems
- Alternative Designs

Alternative Locations

For the purposes of this application, given the existing planning permission for the development, the suitability of the site location for a WTE Facility is established and unchanged from the final permission granted in October 2007.

The suitability of the site for the additional 20,000 tonnes per annum proposed (including the additional traffic movements) has been assessed as has the location of the Proposed Centralised Maintenance Facility, Modular Office Block and ancillary services.

Alternative Thermal Treatment Technologies

The Facility now operates with a moving grate furnace with a two stage flue gas cleaning system and energy recovery. The extra capacity proposed will comprise MSW and hazardous waste, but the exact split between the two waste types over the 20,000 tonnes will be driven by market factors and the availability of certain waste types should planning permission be granted.

Alternative Waste Management Strategies

The Meath WTE Facility is still in line with current National, Regional and European Policies. Indeed its existence makes the North East Region the only region in Ireland with a complete integrated waste management system in place.

Alternative Designs

This application includes the conversion of two existing temporary structures on site to permanent structures. These are the proposed Modular Office Block and the Centralised Maintenance Depot. The main consideration given was to effect the conversion of these structures in the least intrusive manner possible. The structures are in situ as part of the construction of the facility, and it was felt that making no changes to the appearance or lay-out would allow for the very minimum of construction activities, raw material usage, and general disruption to the operations on site.

4. PLANNING & POLICY

Since the previous planning permission was granted in November 2009, there have been relatively few changes to the Irish waste and energy policy environment. Existing policy continues to favour landfill diversion, promote the waste hierarchy and support the development of waste-to-energy capacity.
The key European Strategies and Directives relating to municipal waste, the Waste Framework Directive (2008/98/EC) and the Landfill Directive (1999/31/EC), remain unchanged. On a domestic level, these Directives have recently been implemented as well as the Renewable Energy Directive 2009/28/EC and *European Communities (Renewable Energy) Regulations 2011*.

Overall, any recent changes in waste policy or legislation have served to strengthen the position of waste-to-energy as an alternative to landfill for residual waste. Therefore, the proposed additional 20,000tpa capacity aligns with current policy in terms of being a suitable preferred treatment type for residual waste.

5. SITE AND SCHEME DESCRIPTION

Indaver Ireland Ltd. intend to apply for amendments to the existing permission PL17.219721 and SA/901467 granted for the Meath WTE Facility which began operating on the site in October 2011, after the completion of a three year construction phase.

Proposed Amendments

The proposed amendments do not entail a significant change in the processes or activities currently in place. The proposed amendments primarily relate to a 10% increase in the volume of waste processed annually by the facility and acceptance of a number of additional suitable hazardous waste types. The amendments are as follows;

- 20,000 tonnes (10%) increase in annual throughput
- Inclusion of additional EWC Codes (hazardous and non hazardous)
- Amendment of waste acceptance hours:

Current	**Proposed**	Period
08:00 – 18:30	**06:00 – 20:00**	Mon - Fri
08:00 – 14:00	**06:00 – 14:00**	Sat

- Unrestricted hours for the dispatch of residues from site
- Future additional capacity ammonia storage tank and fuel oil tank
- Convert hardcore area for contractor parking during construction to permanent status
- Conversion from temporary to permanent status of two structures:
    - Spare Parts Warehouse & associated electrical switchgear building with hard core surround.

- Single storey modular office block & associated electrical switchgear building and to include:
  - Effluent treatment plant
  - Paved roadway (with hard cored area to each side) leading to office block
  - 22 additional paved car parking spaces added to existing car park

Waste Acceptance Procedures

In order to ensure wastes are suitable for acceptance to the facility all possible feed streams were assessed before it's suitability for the Meath WTE was determined. Liquid wastes (hazardous & non-hazardous) will be sampled and analysed to ensure that the composition is well known and is suitable for treatment.

A complete screening of any proposed waste streams will be completed, to ensure that the waste streams will;

- Have a known calorific value range
- Have a known flashpoint range > 55°C
- Not contain elevated levels of PCBs, Halogens, heavy metals or radioactive material.
- Comply with the requirements of IED (Industrial Emissions Directive 2010/75 EU); Art. 45.2 (a) and Art. 52.3

Indaver Irelands Technical Team (part of the Quality, Environmental, Safety & Health (QESH) Dept) is responsible for waste classification. All waste types will be classified by the Technical Team of Indaver Ireland Limited, to comply with the very strict transport regulations of ADR & IMDG, EC1013/2006, as well to ensure they meet the acceptance criteria of the Waste Outlet to which they are being sent. This is in accordance with Indaver Ireland Procedure Operations 4.2 "Classification and Identification of waste". A copy of this procedure is provided with the application.

It is foreseen that only minor adjustments will have to be made to the existing Waste Acceptance Procedure (Env 01.00) and Waste Handling Procedure (ENV 02.00) to reflect the proposed additional waste codes, as the wastes will still ultimately be tipped into the waste bunker and fed to the furnace using the grab cranes.

Wastes carrying a hazardous EWC code will be tipped into the bunker directly from the reception hall and hence no extra handling procedures are proposed for the acceptance of such solid wastes. Liquid wastes with non-hazardous EWC codes are currently permitted to discharge directly into the furnace. Extra precautions may also have to be taken for inspecting waste loads, but this will relate mainly to additional PPE requirements for the operators.

The only exception to this would be if infectious waste (EWC Code 180103*) was to be accepted at the plant and in this case a direct feeding method of this waste to the furnace would have to be provided. This is a requirement of the BAT Guidelines (Section 5.6) and the Industrial Emissions Directive (Article 50.6) which state that infectious clinical waste must be placed straight into the furnace without being mixed and without direct handling. Prior to acceptance of any infectious clinical waste, the Meath WTE will ensure full compliance with these criteria.

Process Changes

The incineration process and associated flue gas cleaning and energy recovery systems are unchanged from that outlined in the EIS of 2009. A schematic of the process is shown below in Figure 2

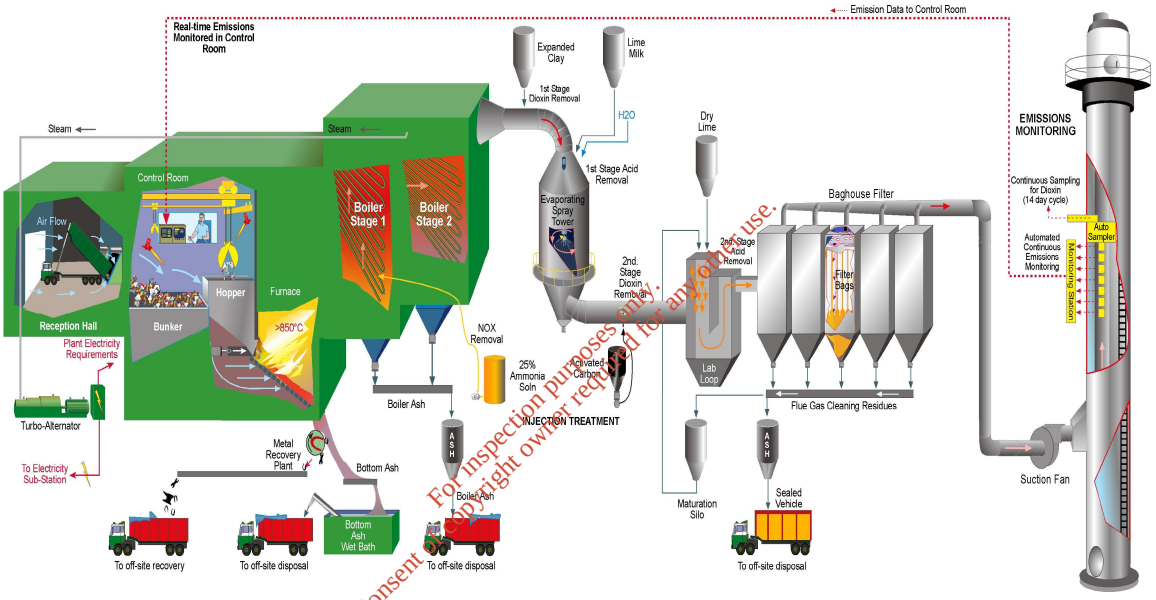


Figure 2 Process Schematic

As outlined previously the proposed amendments to the facility require no significant amendments to the process or plant used including moving grate incineration system, De NOx system, waste boiler, steam/turbine generator, flue gas cleaning or induced draft fan systems. Some additional raw materials will be required.

No changes are required at the ash handling stage. A conservative 10% increase in residue production is assumed in order to ensure that a robust assessment of changes to traffic flows to and from the site is done.

Description of Secondary Activities

- As outlined above there will be a small increase in traffic to take waste residues off site. The upgrade of the R152 road outside the plant has been completed to the satisfaction of Meath Co Co as required under permission PL.17.219721.

- The proposed amendments will involve no change to the manner in which on-site traffic is managed.
- 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 is installed as an underground cable and hence does not have any visual impact.
- The development uses a small quantity of mains water as a potable supply for the facility. On site water well(s) were installed at the site in June 2011. These are used to supply process water within the facility.
- Domestic sewage from toilets, changing and kitchen areas discharge via the foul drainage system into the on site effluent treatment system which pass through a percolation area to ground. There are currently two such percolation areas, one for the main process building facilities and one for the gatehouse. An additional effluent system is proposed for the modular office block building.
- A telecommunications network is in place to the main process building and to all areas of the site where telemetry or remote monitoring is required. All cables are underground and ducted. The proposed amendments do not entail any changes to the existing network.
- It is not anticipated that any additional environmental monitoring will be required as a result of the proposed changes. The review of the existing waste licence with the EPA will identify any such requirements.
- The proposed amendments do not entail any change to Site Security procedures. All traffic (both vehicular and pedestrian) to the main site must route through the Gatehouse. This is manned by Security Personnel who ensure the procedure for access to site are followed.

Stack Emissions

In the 2006 EIS and subsequently in the 2009 EIS Amendment application, the emissions from the plant were assessed based on the maximum allowable limits in the Waste Incineration Directive (which will be replaced by the Industrial Emissions Directive 2010/75/EU) and 110% of the estimated flue gas flow rate at the plant nominal capacity. Recent measurements of the short term average nominal flue gas flowrate and the fact that the actual emissions from the plant are well below the limits modeled, demonstrating that the existing assessment of the impact on air quality is robust. A summary of current measured emission values have been presented in the EIS.

Staffing

Currently, there are 20 shift workers who work in teams of 4 to run and control the plant on a 24 hour basis. There are another 22 employees split between the following functions:

- Management and Administration
- Operations
- Quality Control and Assessment
- Maintenance

Other persons who may be on site intermittently would include:

- Visiting Staff from other Indaver Sites (both in Ireland and Europe)
- Contractors employed for servicing or repairs
- Educational visits/Site Inspections from a broad range of companies and institutions.

The proposed establishment of a Centralised Maintenance Department in one of the structures will result in an increase of staffing levels by 2-3 persons.

Regulatory Control

In order to operate the waste management facility, Indaver require a licence from the EPA. Indaver currently have a waste licence (ref. W0167-02), and this EIS has also been prepared for a licence review application to the EPA to increase the annual tonnage and to add the new waste types proposed.

Description of Decommissioning

A detailed Closure, Residuals and Aftercare Management Plan (CRAMP) and Environmental Liabilities Risk Assessment (ELRA) have been prepared and submitted to the EPA as part of compliance with Condition 10 of the Waste Licence.

Health and Safety

The facility has been built in accordance with the Safety Health and Welfare at Work Act, 2005, Health, Safety and Welfare at Work (General Application) Regulations, S.I. No. 299 of 2007 and associated Regulations. No changes are proposed to the systems and general approach to operational safety.

Indaver operates a combined Quality, Environmental, Safety & Health (QESH) Management System. It is proposed to apply all of the internationally recognised quality, environmental and health and safety standards/assessment series of our existing hazardous waste business (which operates to ISO 9001:2000, ISO 14001 and OHSAS 18001) to the Meath Facility also.

The site is not a Seveso site. During the course of the previous applications, the HSA has assessed the site and formed the view that Regulations of SI No. 74 of 2006 do not apply.. The proposed amendments will not result in any change in status.

6. HUMAN BEINGS

The human beings assessment has been conducted by: reviewing world policy and research papers on the impact of waste-to-energy facilities on human health; baseline monitoring of dioxins and predicting any possible impact from the facility: completion of an odour assessment; and reviewing the current and future socio-economic status of the area.

Health

As part of the 2006 EIS, Dr. Martin Hogan AFOM, FFOMI, a Medical Doctor specialising in Occupational Medicine was asked to assess the potential effect on human health of the Municipal Waste Incinerator at Carranstown Co Meath. It is considered that the proposed amendments, which do not result in a change to the primary process or the nature or characteristics of the emissions, will not result in an impact on human health. This is demonstrated in the findings of the air quality study (as presented in Chapter 7). It was therefore not considered necessary to reassess the potential impacts of the facility on human health. The potential health impacts regarding the delivery, handling and processing of the proposed new types and additional waste tonnages has been assessed.

Social Activities

The current socio economic status in the areas close to the development was reviewed. In the case of Indaver Ireland this is the District Electoral Division (DED) of Duleek in Co. Meath.

Identification of principal potential receptors and an analysis of recent trends in population, employment economic performance and land use including local amenities was completed and the impact of the development was assessed against this background. Reference is made to the most recent census data available from the Central Statistics Office (CSO), 'Census of Population 2006, Small Area Population Statistics'. Although the 2011 census has been completed the Small Area Population Statistics will not be available from the CSO until later during 2012. The only statistics available at the time of publication of from the 2011 census is the population for the state and province.

Residential development in Carranstown is predominantly ribbon development along the main roads. These vary from one off housing to garages and two-storey farmhouses with associated sheds (see Figure 3). The closest population centres are Duleek village to the south west and Drogheda town to the north east.

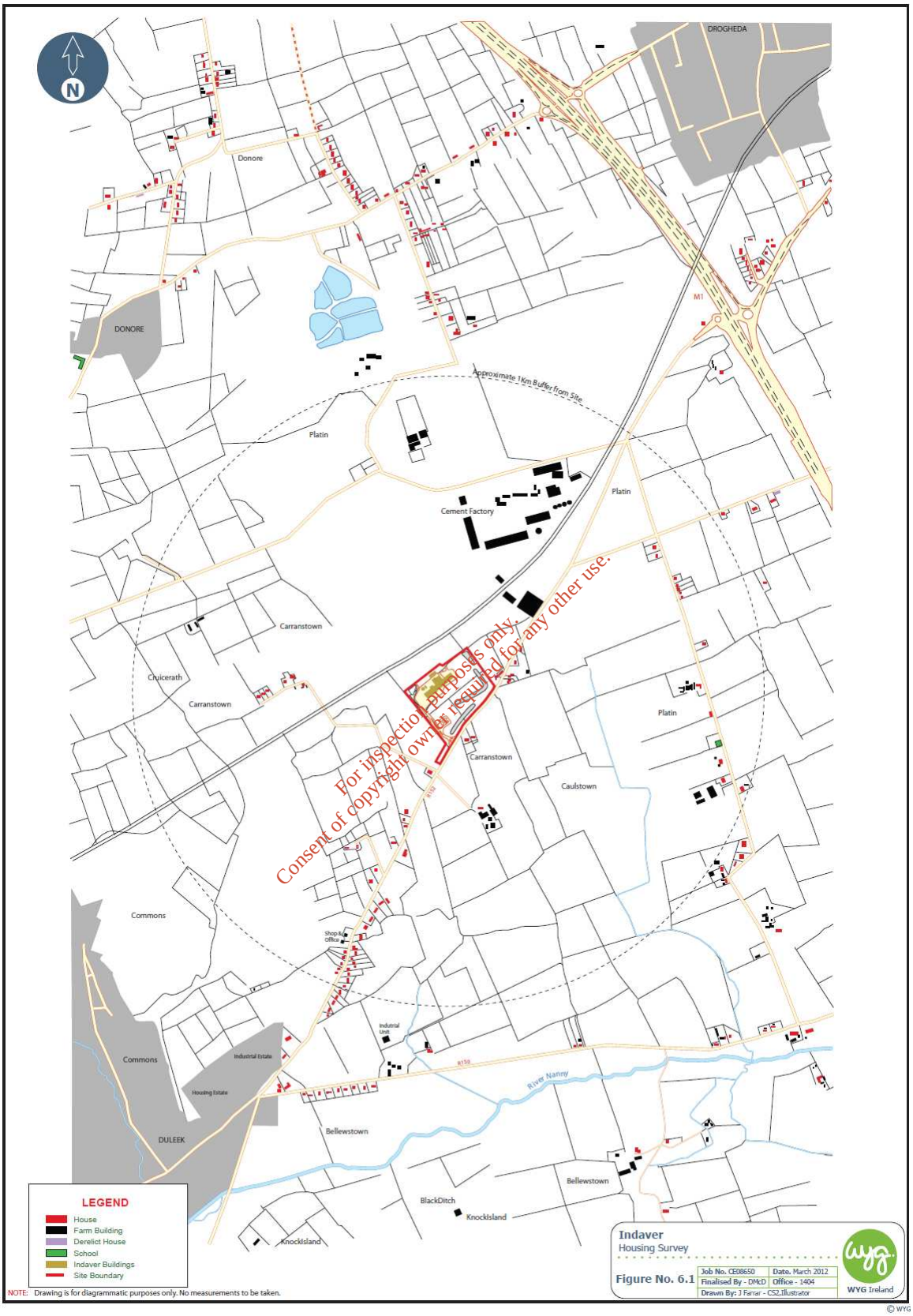


Figure 3. Housing Survey November 2011

Tourism

Many European municipal waste-to-energy facilities are located in the vicinity of major tourist attractions. Incinerators are currently operating in European cities such as Paris, Monaco, Vienna and Lisbon and on islands such as Madeira and Majorca, all popular holiday destinations and where tourism makes a significant contribution to the national economy. From research to date there is no evidence to suggest that a waste-to-energy plant has a significant impact on tourism in its vicinity.

Waste-to-energy facility on Island of Madeira

Economic Activity

It is expected that during construction works related to the proposed amendments a small number of additional staff will be required. The staff will comprise managerial, technical, skilled and unskilled workers.

Currently the facility employs 44 personnel in a full time capacity (the majority of whom are from the immediate area). Based on the proposed amendments the employment will increase to 46-47. It is considered that the revenue generated from the additional employment of 2-3 persons within the study area will result in additional money being spent in the locality. This will have effects on local service demand, accommodation etc over a long term basis resulting in continued expenditure within the locality.

Community Gain

As a condition of the original planning permission granted to Indaver Ireland an annual financial contribution of €200,000 is made to Meath County Council for the provision of environmental improvement and recreational/community facility projects in the vicinity of the facility. The identification of environmental/recreational/community facility projects are decided by Meath County Council and the Community Liaison Committee.

The additional tonnage proposed will provide an additional €25,000 per annum to the fund if granted.

Social Considerations

Ireland continues to have an urgent need of alternatives to Landfill due to pressures from the EU and Irish legislation. While waste to energy is not the *definitive* solution to the waste issue in this country, its necessity is paramount to the success of sustainable integrated waste management system in

Ireland. While the facility will be an end of cycle process for waste, the re-use of the waste as energy is in line with the principles of the waste hierarchy and sustainable development. Impacts upon society as a result of this development have been considered in detail in the individual subsections of the EIS.

Landuse

The proposed amendments entail no changes to the footprint of the facility. There will be no loss of rights of ways, amenities or rezoning of land required. The operation of the development is not predicted to have any significant impact on the land-use of the surrounding areas and is not predicted to have any significant impact on the housing in the surrounding areas.

7. AIR

The air quality assessment undertaken in 2009 comprehensively addressed the potential impacts of the emissions from the existing development on the air quality of the site and its environs. In order to account for the proposed amendments, the 2009 study has been updated to allow for an increase in traffic associated with the proposed increase in waste accepted from 200,000 tonnes to a maximum of 220,000 tonnes (including a possible maximum of between 10,000 – 15,000 TPA of suitable hazardous waste streams).

The 2009 assessment was modelled on the maximum emission concentrations outlined in the Waste Incineration Directive (2000/76/EC), and assumed 110% of the nominal flue gas flow rate and also assumed 100% availability of the plant of 8760 hours per year. This found that the impact on air quality would not be significant. As outlined in Chapter 5 of the EIS, the additional tonnage proposed and new waste types will not alter these conditions and as such this has been fully addressed by the 2009 assessment. In conclusion, the type of waste being incinerated is not wholly relevant as the emission limits in the Directive must be observed. Hence, this assessment is focused primarily on any impact associated with the additional truck movements to the site.

In 2009, Air dispersion modelling was carried out using the United States Environmental Protection Agency's (USEPA) regulatory model AERMOD. The aim of the study was to assess the impact in the ambient environment of emissions from the facility at the maximum emission limits outlined in Council Directive 2000/76/EC and also at a maximum stack emission flowrate. Modelling was also conducted under abnormal operating conditions to assess any short-term impact due to these infrequent events and also under expected or average operating conditions. The study demonstrates that all substances which will be emitted from the facility will be at levels that are well below even the most stringent ambient air quality standards and guidelines.

Methodology

The assessment methodology involved air dispersion modelling using the UK DMRB Screening Model[9] (Version 1.03c, July 2007) and the NO_x to NO_2 Conversion Spreadsheet[10] and following guidance issued by the NRA[11], UK DEFRA[6-9] and the EPA[12,13].

Construction

The construction activities associated with this development will be minor and temporary in nature. Dust emissions associated with the construction phase of the project will be negligible

Incineration

The effect of the changes to the process operation on air quality will not be significant.

Traffic Impact

Modelling results for PM_{10}, $PM_{2.5}$ and NO_2 based on typical speeds indicated that though pollutant levels associated with additional traffic movements are increased at worst-case traffic speeds, pollutant levels are still significantly below the relevant limit values for PM_{10}, NO_2, and $PM_{2.5}$.

There will be no significant impact on air quality due to construction operation or changes to raod traffic as a result of the proposed amendments.

8. NOISE

An assessment was conducted of the impact of the anticipated noise and vibration associated with the development at nearby sensitive locations on human health and the environment. The noise sources associated with the proposed amendments are identical to those originally assessed in the application of 2009. In terms of the current application the main potential for a change in the previously assessed noise impact relates to additional traffic on the local road network.

The methodology adopted for this noise and vibration assessment is as follows:

- Characterisation of the receiving environment;
- Characterisation of the proposed development;
- Prediction of the noise and vibration impact associated with the proposed development;
- Evaluation of noise and vibration impacts.

As part of on-going works, two continuous noise monitors have been maintained on the site for the duration of the construction phase. The data obtained from these units prior to the commencement of construction activities and during a period when the site was commissioned and through the testing process has been reviewed. It is considered that this data presents a robust picture of the actual noise impact of the operational facility.

During the construction phase of the project there will be some impact on nearby noise sensitive properties due to noise emissions from site traffic and other activities. However, given that the construction phase of the development is minor and temporary in nature and the distances between the main construction works and nearby noise sensitive properties, it is expected that the various noise sources will not be excessively intrusive.

Operationally, the increase in traffic noise levels along the adjoining road network will be less than 3dB(A) in all instances. It is expected that that activities on site will be controlled so as not to exceed typical EPA Waste Licence daytime and night-time criteria of 55dB and 45dB L_{Aeq} respectively at the façade of nearby residential properties.

The resultant noise impact from the proposed amendments to the development on the local community are therefore not deemed to be significant.

9. GEOLOGY AND SOILS

An assessment of the impact of the proposed development on soils and geology has been prepared based upon information from previous assessments of the site, the most recent of which was completed as part of an EIS and planning application submitted in 2009. A full assessment including intrusive investigations was undertaken at the site in 2005 which addressed the primary impacts potentially affecting the soils and geology aspect.

The soils beneath the site consist predominantly of brown silty clays generically known as boulder clays. These consist of medium dense brown silty clays with pebbles, cobbles and occasional boulders. The boulder clay varies in thickness across the site, ranging from four metres towards the west of the site, to greater than 10 metres towards the centre. The boulder clay is underlain by the Platin limestones. The Platin limestones display karst features in and around the nearby Platin quarry.

Baseline Assessment

As part of the site investigation completed prior to development, representative soil samples were collected from a number of trial pits across the site. Samples were analysed for priority pollutants including Volatile Organic Compounds, Polycyclic Aromatic Hydrocarbons (PAHs), Metals, Total phenols, Pesticides and Polychlorinated Biphenyls (PCBs). The results of this investigation showed that there is no significant soil contamination at the site. However some traces of metal contaminants were identified. The levels identified would commonly reflect agricultural activity within the area.

A test was conducted in December 2000 to assess the suitability of the site for the installation of a Puraflo™ system. In addition PM group in February 2009 conducted additional percolation tests. The

test results indicated that while the site percolation test results were unsuitable for a traditional percolation area an engineered percolation area could be constructed to comply with national guidelines. Two engineered percolation areas are in use for the security gatehouse and the main process building facilities. A third Puraflo system and percolation area is proposed for the modular office block. It will be designed and constructed in accordance with the recently published EPA guidance on the Authorisation of Discharges to Groundwater.

Construction Phase

Relative to the scale of the construction project completed at the site for the main facility in 2010/2011, the proposed amendments will entail minor construction work. Only very shallow and limited excavation works are required and as such any minor amounts of spoil or spoil found unsuitable for reuse on site will be transported off site to a licensed facility.

Potential impacts during the construction phase of the development would be associated with accidental spillage of potentially polluting substances including oils, paints and liquid wastes and other substances associated with the construction and operational activities.

Operational Phase

The potential impacts during the operational phase would be limited to accidental spillage of potentially polluting substances including oils, paints, liquid wastes, or raw materials such as lime or ammonia or impact from discharge of sewage to ground. With good management practices in place it is expected that the development will not cause any impact on the soils and geology of the site.

Potential vibration issues relating to blasting at Platin have been assessed. Upon consideration of vibration data it is concluded that blasting will not result in cosmetic or structural damage to any of the Indaver buildings.

Mitigation Measures

Construction works will be completed in accordance with the principles of CIRIA "Environmental good practice on site" (C692) and the Environmental Management Plan for the site.

All oils, chemicals, paints, fuels or other potentially polluting substances used during construction will be stored in designated storage areas which will be bunded to a volume of 110% capacity of the largest tank/container within the bunded area(s). It is anticipated that existing site storage infrastructure can be used to minimise risks during the construction period.

Filling and draw-off points will be fully located within the bunded area(s). Drainage for the bunded area(s) will be diverted for collection and safe disposal.

All domestic effluent generated on site during construction will be managed through the existing site foul water treatment infrastructure.

The implementation of good construction management practices will minimise the risk of pollution to geology and soils.

Therefore the facility, during construction and operation, will not have a negative impact on the soils or geology of the site.

10. GROUNDWATER AND HYDROGEOLOGY

An assessment of the hydrogeological environment of the site was completed based on assessments of the site in 2000 and 2001, geotechnical reports based on assessments completed in 2007 and 2008, borehole installation completed in 2011, a desk study and information from the Geological Survey of Ireland database.

The chapter assesses the impact of proposed amendments to the existing planning permission on the groundwater of the site and environs. The only significant changes with respect to potential impact on groundwater is the installation of an additional domestic effluent treatment system to serve the new office block. Minor construction works will also be required for hardstanding and parking associated with the new buildings. New legislative standards for groundwater quality (SI 9 of 2010) have been considered in determining the impact on the environment.

Baseline Assessment

The development site is underlain by a thick deposit of low permeability brown silty clays. The vulnerability of the site has been classified by the Geological Survey of Ireland (GSI) as Moderate. The Platin Formation which underlies the site has been classified by the GSI as; *regionally important, diffuse karst aquifer, with good development potential (Rkd)*. This classification was determined by the GSI in 2004. This regionally important aquifer displays both karst and fracture flow features.

The development site lies within the groundwater regime now established by the Platin dewatering programme. The quarry abstracts sufficient groundwater to maintain the water table just below the working quarry floor. This operation has resulted in a cone of depression in the water table therefore groundwater flow beneath the development site is now determined by the cone of depression centered on the Platin excavation.

Construction

Though only minor construction works are proposed, potential impacts during the construction phase would be associated with accidental spillage of potentially polluting substances including oils, paints and

liquid wastes and any additional substances associated with the construction activities.

Waste water generated during the construction phase will be managed through the existing foul water treatment systems.

Operation

The main potential impacts during the operational phase will include;

- Impact on Groundwater Levels
- Impact on Regional Groundwater quality

Groundwater flow beneath the site is determined by a cone of depression centred on Platin Excavation. Prior to the quarry development, the groundwater flow beneath the development site would have been towards the River Nanny and in a general South Easterly direction. Current water levels are well below the level of any excavations for the development.

Mitigation Measures Construction

All potentially polluting chemicals will be securely stored during the construction phase and refueling of earth moving machinery will be carried out in accordance with a method statement. All domestic effluent will be removed for appropriate disposal at an approved waste water treatment plant.

Mitigation Measures Operation

There are no additional mitigation measures/monitoring requirements as a result of the proposed amendments.

The storm water attenuation pond has been constructed with a sealing membrane of commonly used for forming secondary containment liners in effluent tanks. The pond will be tested in accordance with facility licence conditions. The tank is approximately 2.6m deep and surrounded by a 2.4m high chainlink fence. A minimum permanent water level of approximately 300mm will be maintained in the tank at all times. A minimum freeboard of 300mm will be maintained for any storm occurrence less than 1:100 years.

All domestic effluent will be treated by an appropriate system prior to its discharge to the percolation area.

All underground piping will be maintained and regularly inspected for integrity.

A petrol interceptor is in place on the surface water drainage outfall line from hardstanding areas to contain any leakages from vehicles on site. Full details of the proposed on site drainage network are presented in Section 11.

It was concluded that the amendments to the facility will not have a significant impact on the hydrogeology of the development site or beneath the surrounding lands.

11. SURFACE WATER

As part of the 2006 and 2009 EIS', assessments of the surface water environment of the site were completed and submitted with the planning application. A revised assessment has been completed for this EIS which supplements the previous assessment with updated information where available. The amendments entail some additional construction in the form of conversion of two temporary office and maintenance structures respectively to permanent structures, the installation of an additional foul water treatment plant system and associated hardstanding surfaces and parking.

Surface water on and in the vicinity of the site drains, through land drains and ditches, towards the local stream that flows to the River Nanny. The drainage ditches are mostly dry in the summer months.

Construction Phase

Storm water management during the required construction works will be controlled in accordance with the site Environmental Management Plan (currently being agreed with the Agency) and any planning conditions set down by the planning authority. The facility (ref W0167-02) licence provides for monitoring of such issues as dust generation, noise generation, traffic management and surface water run-off.

Run off generated during construction will be directed to the existing surface water drainage system (including interceptors, attenuation pond, monitoring stations etc) prior to its discharge to the local drainage network.

Operation Phase

The site storm water drainage system has been designed in general accordance with Sustainable Drainage Systems (SuDS) principles and will collect rainwater from all roofs, hardstands, roads and grassed areas which fall naturally towards these areas. This area will amount to approximately 6.8Ha. The proposed amendments will entail some alteration to the existing drainage system but in the main the existing infrastructure will remain. There will be no need for any additional stormwater attenuation capacity. The existing design has been agreed and is in accordance with the requirements of Meath County Council.

Attenuation for a 1 in 30 year storm has been provided by means of an attenuation pond which discharges via a pump to an external drainage ditch. Attenuation of 1 in 100 year storms will also be contained with the attenuation pond. In the event of a greater than 1:100 year storm occurrence, the paving at the facility has been designed to slope away from the building meaning any flooding that may occur will flow away from the building towards the drainage system and land drains. The design will

prevent downstream flooding due to "flash flooding" from the site and will serve to add water to the ditch system in a similar manner as currently exists under agricultural usage.

The drainage design allows for the monitoring of the storm water discharge at two locations in order to prevent any uncontrolled water discharges from oil leakages, spillages etc entering the watercourses.

Domestic effluent will be treated by a Puraflo treatment system and discharged to the percolation area. There are currently two such systems on site serving the main process building and gatehouse. It is proposed to install a new system for the modular office block.

Raw materials or other potentially polluting substances (with the exception of fuel and ammonia storage) will be stored in containers/silos within the main process/warehouse building. Residues will be stored in a hall or silos within the main process building.

Fire suppression is provided by an on site dual purpose water storage tank. This tank has an overall capacity of 2,185m^3 with an effective fire-fighting storage volume of 1855m^3 and a process water storage capacity of 330m^3. The fire fighting effort is supported by 2 diesel fire pumps connected to a fire main and hydrant system throughout both the site and buildings. This will be further augmented by Local Fire Service capabilities. In the event of a fire, the process water requirement will not be needed and potentially all 2,185m^3 will be available for fire fighting. All staff are trained in Emergency Response techniques in order to deal with emergencies including fire fighting.

The greatest potential for fire at the facility arises within the waste bunker where localised heating can occur due to decomposition of organic material. Localised fires within the waste bunker are lifted using the grab crane, into the hoppers which transfer the waste directly to the furnace. Up to the level of the tipping hall, the bunker has a capacity of 5,670m^3 approximately. If a 50% voidage ratio is assumed for the waste, then there would be a retention capacity of 2,835m^3 within the waste bunker. With 2,185m^3 of water available for fire fighting, this demonstrates that all of the water will be retained within the bunker even in the most extreme fire event.

If a fire occurred in the turbine area, the fire fighting water would be collected in the cellar beneath the turbine which has a capacity of circa 1,000 m^3. The waste bunker has been designed conservatively with 1.1m thick walls and 800mm base and secondary containment system. It will therefore retain any fire water generated within the bunker.

With respect to fire occurring elsewhere in the process building or other buildings on site, the design philosophy as outlined in the 2009 EIS remains unchanged.

The firewater retention tank volume of 300m^3 remains unchanged and has been calculated using the German LÖRÜRL Methodology for the calculation of retention volume.

A Fire Water Risk Management Programme was prepared in July 2011 to comply with Condition 3.7 of Indaver's Waste Licence W 0167-02.

A schematic of the effluent streams and their management is presented in Figure 4.

The existing surface water management system is adequately designed to prevent uncontrolled discharges to the outfall ditch by the provision of two layers of monitoring and a controlled discharge system. As a result of the proposed amendments there will be no significant negative impacts on the existing surface water environment.

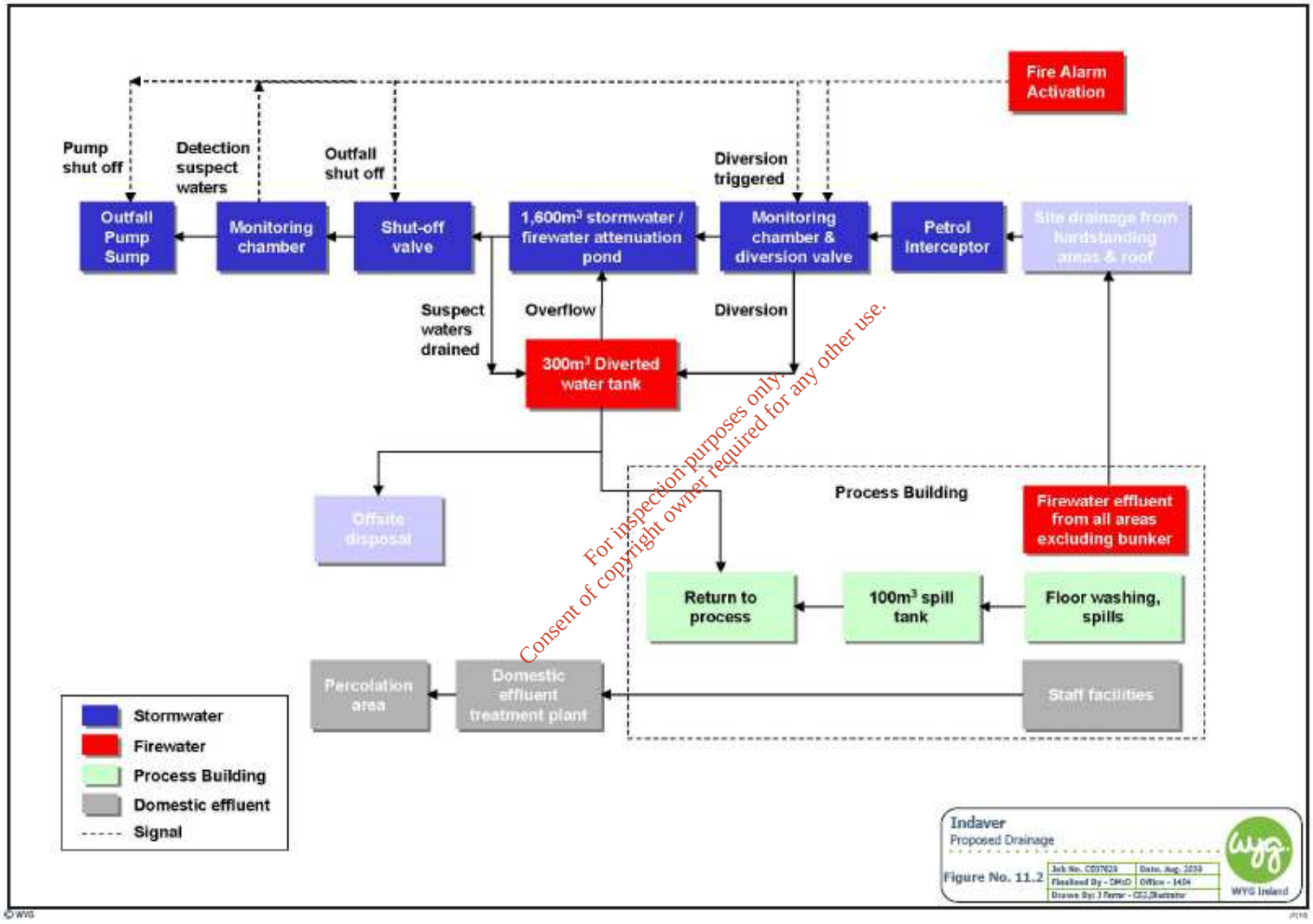


Figure 4 Proposed Drainage system for Waste to Energy Facility

12. ECOLOGY

As part of the 2006 and 2009 EIS', flora, mammal and bird surveys were conducted at the development site. No designated habitats of international or national value were recorded on or adjacent to the site. All the habitats recorded on site are widespread within the landscape and of moderate to low species-richness.

This chapter has been prepared based on a review of the previous ecological assessments of the site. The primary ecological assessment for the development was undertaken in 2005 and addressed the potential impacts of the proposed development on the flora and fauna of the site and its environs. As the primary facility has now been constructed and is operational, a number of ecological mitigation measures recommended in previous EIS's have now been implemented.

The proposed amendments to the development will have no significant impact on the ecology of the site. A number of mitigation measures have now been completed and should ensure that any potential impacts to flora, fauna and birds are minimised.

13. TRAFFIC

The existing Waste to Energy Facility at Carranstown, Co Meath consists of a 70 MW Waste to Energy Plant which has a capacity of 200,000 tonnes per annum for the treatment of Non Hazardous Waste. This proposal includes for a 10% increase in the capacity of the existing facility to 220,000 tonnes per annum and extending the opening hours on Monday to Fridays from between 08:00-18:30 (10.5 hours) to 06:00-20:00 (14 hours) and on Saturdays from between 08:00-14:00 (6 hours) to 06:00-14:00 (8 hours).

The subject site is located on the R152 Regional Road linking Drogheda and Duleek. Access to the subject site is via the existing R152 Drogheda to Duleek Road. The main routes that carry traffic to and from the development are the R152, the N2 and the M1 motorway. There are 5 main haul routes as follows:

(i) From Drogheda via the R152;
(ii) From Louth and Monaghan via the M1 Motorway and R152;
(iii) From Navan and surrounds via the R153 through Kentstown, across the N2 and then via the R150 through Duleek to join the R152;
(iv) From Ashbourne via the N2 and R152 from Kilmoon Cross;
(v) From east Meath via the R150 through Julianstown.

The traffic data used in this assessment is based on two separate traffic counts, one carried out on a Wednesday in May 2009, when the plant was under construction, at 8 locations on the haul routes, and

the second being three 7 day Automatic Traffic Count (ATC) surveys in December 2011 at different locations on the haul routes and one Manual Classified Count (MCC) survey at the site entrance.

In order to assess the worst case scenario of the expansion of the plant capacity, the likely benefits of the spread of traffic associated with the proposed extended operating times has been ignored. It is estimated that a maximum average of 8 additional truck movements would be anticipated in during the above peak hours as a result of the proposed increase in facility capacity.

The R152/R150 junction will continue operate well within capacity under the expected traffic conditions with no significant loss in spare capacity as a result of the traffic generated by the development.

The M1/R152 junction will continue to operate well within capacity under the expected traffic conditions with no significant loss in spare capacity as a result of the traffic generated by the expansion.

The traffic flow at the R150/R152 junction will reach capacity in the year 2013. The construction of the planned Duleek by-pass will improve the traffic flows in and around the village of Duleek, particularly the R150/ R152 junction.

Construction Traffic

Only very minor construction works are proposed and its maximum expected construction period for the proposed facility is 1 month. During this period, there will be a maximum of 10 people employed in the construction activities.

It is expected that construction traffic will not be generated during the peak morning and evening hours. As a result, the traffic impact of the proposed development will be negligible during peak morning and evening hours. As demonstrated previously, the surrounding road network is has sufficient spare capacity to cater for the operational phase traffic. There is therefore sufficient capacity to cater for the predicted construction traffic.

14. LANDSCAPE & VISUAL IMPACT

A full assessment of landscape and visual impacts of the Waste to Energy facility on the land and surrounding areas to the site was undertaken in 2005 and was included in the EIS submitted with the planning application in February 2006. The proposed amendments entail the conversion of two temporary buildings (a modular office building and a spare parts building) to permanent use and three temporary areas of hard standing as part of the existing Waste-to-Energy Facility at Carranstown, Duleek, County Meath. The subject application also seeks to increase the through-put of the facility from 200,000 tonnes per annum to 220,000 tonnes per annum (a 10% increase).

In order to assess the likely visibility and consequent visual impact of the proposed amendments, a visual survey of the site was conducted on Friday the 27th of January 2012. From ARC's on-site assessment, it is clear that neither of the two buildings and none of the three areas of hard-standing are readily visible from outside the site. Glimpses of one of the buildings and one of the areas of hard-standing may be possible from just inside the gate. Since these features will not be visible from outside the site, they can have no visual impact on the surroundings.

It is predicted that the proposed amendments to the development will not result in any visual impacts.

15. CLIMATE

The climate assessment undertaken in 2009 comprehensively addressed the potential impacts of the emissions from the existing development on the climate of the site and its environs. This 2009 study has been updated to allow for an increase in waste accepted from 200,000 tonnes to 220,000 tonnes (including a possible maximum of between 10,000 – 15,000 tpa of suitable hazardous waste).Attention was focused both on Ireland's obligations under the Kyoto Protocol and the effect of the facility on the total national emissions of carbon dioxide and other greenhouse gases and also in the context of overall climatic impact with and without the development.

The contribution of the Waste-to-Energy Facility to total greenhouse gas emissions in Ireland is equivalent to only 0.09% of the Kyoto Target for Ireland in 2012, when energy recovery in taken into account. Moreover, compared to the "Do Nothing" scenario, emissions will increase by only 0.05% of the Kyoto Target for Ireland in 2012, when energy recovery in taken into account. Thus, the overall annual impact of the existing plant on climate is to increase greenhouse gas emissions by approximately 0.04% of the total greenhouse gas emissions in Ireland in 2012 and thus will be imperceptible in terms of Ireland's obligations under the Kyoto Protocol.

16. CULTURAL HERITAGE

An Archaeological Impact Assessment of the site was conducted in 2005 which included field walking and desk-based research. The study addressed the potential archaeological impact of the industrial development. During 2008-2009, topsoil stripping associated with the construction of the development was carried out and further information has become available from archaeological monitoring. These features have been assessed, recorded and documented by ADS. Topsoil stripping is now largely complete. It is therefore unlikely that construction of the proposed amendments to the development will have any impact on any further archaeological features which may survive below ground at the development site.

Any further topsoil stripping works at the site will be monitored by a suitably qualified archaeologist as required by planning condition 10 of the existing planning permission.

The physical impact of the development due to its proximity to the World Heritage Site of Newgrange was considered in the 2006 EIS. The facility is a minimum of 3km from the river valley and approximately 5km from the boundary of the World Heritage Site, sufficiently distant so as to render any archaeological impacts not significant. The UNESCO-ICOMOS monitoring mission which reported on the site in 2004, also considered the direct impacts and found that *there were no grounds for believing that the construction of the proposed incinerator itself would have a direct impact on the outstanding universal value of the World heritage site. Any effect on possible archaeological sites of local interest within the application area would be mitigated by archaeological monitoring.*

A report entitled *Assessment Of Air Quality Impact Of Carranstown Waste Management Facility At Bru Na Boinne* was completed by AWN in March 2004. A USEPA approved air dispersion model was used to predict ground level concentrations at Bru na Boinne resulting from compounds emitted at the proposed facility at Carranstown. It was concluded that the impact of air emissions from the facility at Bru na Boinne will be insignificant. As is demonstrated in Chapter 7 Air Quality there is no significant change in the emissions from the development as modelled in 2006 and the proposed amended development. It has therefore not been necessary to reassess the impact on Bru na Boinne.

17. MATERIAL ASSETS

Material assets are defined 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*'.

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 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 already present in the MSW waste stream and are mainly commonplace materials (such as empty paint tins, rags, etc).

With mitigation measures specified in place, neither the construction nor operational phases of the development will result in any significant negative impacts on the existing economic assets.

Electricity and Water Supply

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.

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 already 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.

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.

Due to the strict emissions controls and regulatory compliance that the plant is and will be working under, no significant negative impacts to adjacent agricultural lands are expected.

18. CONSTRUCTION

The Construction chapter sets out the construction works required for the proposed amendments and indicates the mitigation measures to be implemented to ensure that potential environmental impacts are minimised. The proposed amendments will entail some very minor construction works.

From a construction perspective, the majority of the proposed physical amendments relate to the change of status of existing temporary structures to permanent status and will therefore only require connection to roadways, drainage systems, installation of footpaths, hardstanding, car parking spaces etc. A new domestic effluent treatment is required for the modular office block.

Construction Hours

The site construction working hours will be confined to between 0700 and 1900 hours Monday to Saturday, inclusive (excluding public holidays and Sundays). Working hours may vary slightly depending on weather conditions and daylight hours during winter months.

Construction Impacts and Mitigation

Construction works completed at the site are to be small scale and short in duration. All construction works will be completed in accordance with the environmental management plan for the site and the facility licence. The facility licence and the monitoring regime set out by it ensures that all potential nuisances (including traffic management, dust, noise, vibration, litter etc) are managed in accordance with best practice.

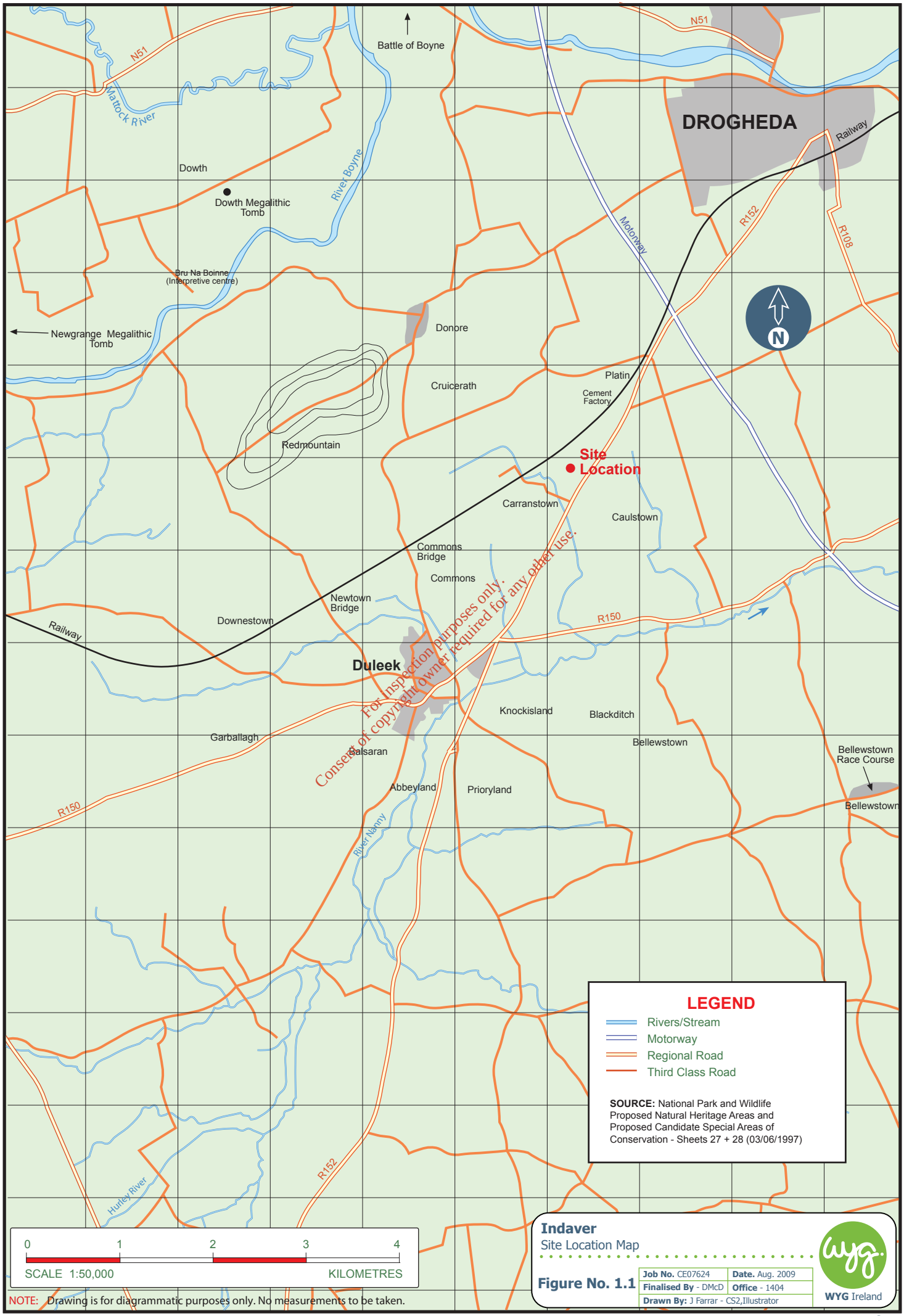
Good housekeeping and facility management during the construction period will ensure that there will be no negative environmental impacts from construction works.

19. INTERACTIONS

Interactions between various environmental factors were completed as part of the environmental impact assessment. The impacts and likely significant effects on the interaction between the following environmental media were assessed: human beings; flora and fauna; soils and groundwater; surface water; air; noise; climate; material assets; and the landscape. The interaction matrix (19.1 below) is based on the potential interrelationships of the environmental media as a result of the proposed amendments to the development.

Table 19.1 Interactions between Environmental Media

	Human Beings	Air	Noise	Landscape	Flora & Fauna	Surface Water	Soils & Groundwater	Climate	Material Assets
Human Beings									
Air									
Noise									
Landscape									
Flora & Fauna									
Surface Water									
Soils & Groundwater									
Climate									
Material Assets									



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APPENDICES

1 INTRODUCTION

This Environmental Impact Assessment (EIS) has been prepared to accompany an application to An Bord Pleanala (ABP) and the Environmental Protection Agency (EPA) for a number of proposed amendments to the Indaver Ireland (referred to as Indaver henceforth) waste-to-energy facility at Carranstown, Duleek, Co. Meath. Planning permission (File Reference Number SA/600050, & PL 17.219721) was granted to Indaver Ireland in 2006 for the development of the facility. An amended permission (SA901467) relating to detailed design changes and a reduction in scale of the building was also granted in December 2009. A copy of the 2009 EIS is included in the Planning Package so the Board will have access to all previous assessments. The facility began the commissioning phase in August 2011, and has been fully operational since October 2011. The facility operates under EPA Licence W0167-02.

This application is for an amendment to the existing planning permission required as a direct result of changes in the rapidly evolving waste market in Ireland. A more detailed synopsis of the amendments proposed is presented in Section 1.1 below. The primary amendments are as follows;

Summary of Proposed Amendments

- 20,000 tonnes (10%) increase in annual throughput
- Inclusion of additional EWC Codes (hazardous and non hazardous)
- Amendment of waste acceptance hours:

Current	**Proposed**	Period
08:00 – 18:30	**06:00 – 20:00**	Mon - Fri
08:00 – 14:00	**06:00 – 14:00**	Sat

- Unrestricted hours for the dispatch of residues from site
- Future additional capacity ammonia storage tank and fuel oil tank
- Convert hardcore area for contractor parking during construction to permanent status
- Conversion from temporary to permanent status of two structures:
  - Spare Parts Warehouse & associated electrical switchgear building with hard core surround.
  - Single storey modular office block & associated electrical switchgear building and to include:
    - Effluent treatment plant
    - Paved roadway (with hard cored area to each side) leading to office block
    - 22 additional paved car parking spaces added to existing car park

The proposed amendments are located within the existing site area of approximately 10 hectares (25 acres). The site location is shown on Figure 1.1. Existing developments within the vicinity of the facility include a cement factory and quarry located to the north of the property.

1.1 Proposed Amendments

1.1.1 Increase the Annual Quantity of Waste Accepted to 220,000TPA from 200,000TPA

The request to increase the annual throughput of the facility from 200,000tpa to 220,000 is to realise the full potential of the Waste To Energy facility. As discussed in more detail in Section 2.2, the incoming waste has proven to have a lower Calorific Value (CV) than expected, so more material needs to be processed to achieve the same electricity output.

1.1.2 Acceptance of Additional Waste Streams (Hazardous & Non Hazardous)

Part of this application includes the request to accept additional waste types at the Meath WTE facility, including some that have been designated as hazardous waste by the assignment of the most appropriate EWC (European Waste Catalogue) Code.

For clarity, this does not mean that these new waste types are dangerous wastes, most would be very similar in physical and chemical characteristics to what is accepted at the Meath WTE facility today as non hazardous waste, but due to them being collected directly from particular producers, or as segregated streams from existing waste collectors or Civic Amenity Sites, the classification process designates the material to be hazardous. Examples of the proposed types of new waste are:

- Empty paint cans
- Painter's overalls, aprons, rags and wipes contaminated with paints
- Out of date/off specification medicines and over- the- counter wastes e.g. eye drops, cosmetics, denture care products,
- Certain raw materials used in the manufacture of medicines e.g. sugars, starches, tablet coatings
- Certain liquid wastes that are mostly water, but contain some contamination e.g. Rinse waters from spill cleanups, water containing glucose and trace pharmaceutical ingredients
- Bandages, used wound dressings, gauze, sterile wipes.

Waste that would pose a danger to Indaver personnel, or indeed, Indaver's extensive investment in the Meath WTE will not be accepted at the facility.

Wastes that would not be suitable and will not be accepted are:

- Flammable liquids
- Chlorinated waste
- Explosive or spontaneously combustible material

- Radioactive Material
- Highly Corrosive wastes
- Wastes that react with water to form gases

The existing facility accepts and treats non hazardous waste currently under EPA Licence W0167-02. All the limits on emissions must be met, regardless of the material treated at the facility. So any new waste streams accepted must not compromise Indaver's ability to comply with these relevant licence conditions.

No waste streams that are captured under the scope of the Seveso Directive will be accepted at the facility.

The technology at the Meath Waste to Energy Facility is extremely robust and can deal with the variety material that comprises Municipal Solid Waste (MSW). It is now proposed to seek permission to handle those EWC codes that the plant is designed to treat thus providing realistic cost effective solutions to industry and Local Authorities in Ireland.

1.1.3 Creation of a Centralised Maintenance/Spare Parts Facility for Indaver Ireland

Indaver is committed to the ongoing development of the Meath Facility and to providing further employment opportunities in the region. It is intended to apply to establish a centralised maintenance and spare parts facility for the Irish Region on site by converting the spare parts warehouse used during the construction and guarantee period to permanent status. Further information on the nature of this facility is described in Chapter 5 Description of the Proposed Development.

1.1.4 Extended opening hours for waste acceptance at the plant

Since the construction and commencement of deliveries of waste to the facility, waste contractors have expressed a preference for wider opening hours for waste acceptance at the site. These wider opening hours would avoid congestion due to deliveries at key times. This application seeks to extend the opening hours from 6am to 10pm thereby permitting additional flexibility at key times in the morning and evening for waste collectors.

1.1.5 Conversion of temporary office block to permanent status

To accommodate visiting staff and contractors away from the main process building, it is requested to convert the modular office building used during the construction period to permanent status. Associated with this will be the installation of a Puraflo® effluent treatment system, additional parking spaces, as well as paving the approach road to the office block.

1.3 ENVIRONMENTAL IMPACT STATEMENT (EIS) METHODOLOGY

1.3.1 Requirement for an EIS

The requirement for Environmental Impact Assessment (EIA) for certain types and scales of development is set out in the EIA Directives (85/226/EEC, 97/11/EC and 2003/35/EC) and, for current purposes, given effect in Ireland by the Planning and Development Act, 2000 (as amended), the Planning and Development Regulations, 2001-2011 and the Planning and Development Act (Strategic Infrastructure Act) 2006. The existing Waste-to-Energy facility falls into the category defined as;

Schedule 5, Part 2, Category 10 "Waste disposal installations for the incineration, chemical treatment as defined in Annex IIA to Directive 75/442/EEC under heading D9, of ***non-hazardous waste*** *with a capacity exceeding 100 tonnes per day."*

As this proposed application entails a number of amendments including the acceptance of a number of suitable hazardous waste types, the development will fall into the following category;

Schedule 5, Part 2, Category 9 *"Waste disposal installations for the incineration, chemical treatment as defined in Annex IIA to Directive 75/442/EEC under heading D9, of* ***hazardous waste*** *with a capacity exceeding 100 tonnes per day."*

For clarity, it is important to note that the facility (both before and after the proposed changes) remains a recovery operation under and in accordance with domestic and European waste law. However, the phrase "disposal installation" has been interpreted by the European Courts to include both recovery and disposal operations for the purposes of environmental impact assessment. For this reason, it is considered prudent and appropriate for the project to be subject to EIA."

The remainder of the amendments proposed would not, fall within this category. There is a specific category for amendments and changes.

Schedule 5, Part 2, Section 13 of the Planning Regulations specifically addresses Changes, Extensions, Development and Testing. This specific section states that an EIS is required for:

(a) any Change or extension of development (not being a change or extension referred to in Part 1) which would –

(i) result in the development being of a class listed in part 1 or paragraphs 1 to 12 of part 2 of this schedule, ***and***

(ii) results in an increase in size greater than –

-25% or

-an amount equal to 50% of the appropriate threshold,

whichever is the greater

The proposed amendments will not result in an increase in size of greater than 25% nor will the proposed amendments increase the threshold by an amount equal to 50% of the appropriate threshold. It is proposed to only increase the volume of waste accepted per annum by 10% and accept a limited number of suitable hazardous waste types.

Further to pre application consultation with An Bord Pleanala it is considered, on the basis of the information above, that the facility constitutes a class of development that falls within the Seventh Schedule of the Planning and Development Act 2000, as amended and that it satisfies the requirements of section 37A(2)(a) of the Act i.e. the facility represents Strategic Infrastructure Development. An EIS is also required for the proposed amendments, primarily as a result of the proposed acceptance of hazardous wastes (though these wastes are mild forms of hazardous wastes.)

This EIS has been prepared in accordance with the following Environmental Protection Agency (EPA) documents "Guidelines on the Information to be contained in Environmental Impact Statements" and "Advice Notes on Current Practice in the Preparation of Environmental Impact Statements", published in 2002 and 2003 respectively.

The waste-to-energy facility is currently operated under a waste licence issued by the EPA under the Waste Management Acts, 1996 (as amended). An application for a revised waste licence will be made in tandem with this planning application to seek approval for the proposed changes.

1.3.2 EIS Methodology

The EIS is presented in the "Direct Format Structure" as set down in the "Guidelines on Information to be Contained in an EIS" produced by the Environmental Protection Agency (March 2002). In general, it follows the framework presented in the EPA Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (September 2003).

1.4 COMPANY BACKGROUND

Indaver Ireland Limited

In 1999 Indaver NV acquired 60% of MinChem Environmental Services Limited, a hazardous waste management company operating in Ireland since 1977. In 2003 Indaver NV acquired the remaining 40% of MinChem and in 2004 changed the name of the company to Indaver Ireland Limited. Today, Indaver Ireland Limited, with offices in Carranstown, Dun Laoghaire, Dublin Port and Cork, employs approximately 125 people and is the company that operates the Meath WTE Facility.

Indaver Ireland Limited are a registered Waste Broker (IRE/AG040/12), and also operate an EPA Licenced (W36-02) Waste Transfer Station and Solvent Recovery facility in Dublin Port. In 2010, Indaver Ireland Limited managed approximately 65,000 tonnes of hazardous waste for its customer base, and exported the majority of this amount to other Indaver Group facilities or external treatment centers.

Indaver Ireland

Indaver Ireland, a wholly owned subsidiary of Indaver NV, was established in 1999 to develop waste infrastructure in Ireland. The branch developed and built the Meath WTE facility and then transferred this to Indaver Ireland Limited to operate. The branch is also trying to develop and build an Industrial waste facility, which includes a hazardous waste incinerator, in Ringaskiddy, County Cork. Information on Indaver's projects can be found on the website www.indaver.ie.

Indaver NV Company Profile

Indaver NV, is the Flemish parent company of Indaver Ireland and Indaver Ireland Limited.. Indaver is a waste management company that specialises in integrated waste management for industries and households. Indaver recycles, treats and disposes of both domestic and industrial waste. Advice on the prevention of waste is an integral part of the Indaver service.

The Dutch multi utility company, Delta is the majority shareholder of Indaver NV with a 75% shareholding. Flemish Environmental Holding is the holding company of the Government of Flanders and it has a 16% stake in Indaver NV. The remaining shares are held by a number of leading private companies in Flanders. The Indaver group plays a leading role in the implementation of the Flemish Government Waste Policy. The company employs over 800 people and has operations in six European countries. In 2010, Indaver offered a solution for the management of around 4.3 million tonnes of waste in its own processing installations as well as in external centres.

1.4.1.1 Indaver's Activities

Indaver NV is involved in a comprehensive range of waste management activities at its various facilities in Flanders, and elsewhere in Europe. A selection of such activities is listed in Table 1.1. More detail can be obtained from the Indaver Group Sustainability Report 2010 on www.indaver.ie, (Sustainability)

Municipal waste-to-energy facility, Flanders, Belgium

Table 1.1: Indaver NV Waste Management Activities

Site	Facility Description	Facility Tonnage	Total Tonnage
Hazardous Waste Management Facility Antwerp	Solvent Recovery	2,093	402,837
	Physico-chemical Treatment of liquid waste	136,636	
	Waste-to-Energy	115,341	
	Slag Processing	19,529	
	Landfill	129,238	
Non Hazardous Waste Management Facility Doel	Mercury Waste processing	3,344	1,131,394
	Pre-Treatment for High C.V. waste	44,570	
	Waste-to-Energy	901,266	
	Ash Trreatment	92,150	

	Landfill	90,064	
Kallo	Waste Transfer Station	-	3,009
AROC	HCL Recycling Facility	-	145,336
Willebroek Recycling Park	Dry Recyclables (sorting for recycling)	24,520	79,021
	Tyres (Sorting and Recovery)	698	
	Timber	4,033	
	Green Waste	6,928	
	Glass/Carpets	1,303	
	Bulky Waste	20,987	
	Paper/Plastics	20,552	
Grimbergen	Composting Facility	-	77,149
Leuven	Waste-to-Energy	-	11,417

(Source: Indaver NV Sustainability Report 2010)

All the company's facilities are licensed by the regulatory authorities in the region in which they operate. Indaver is striving to have all its facilities accredited to the ISO 9002 Quality Assurance System, the ISO 14001 Environmental Management System and the OHSAS 18001 Health and Safety Standard. Indaver NV was the first waste management company in Flanders (and among the first in Europe), to attain accreditation to the ISO 14001. These certifications are independently audited on a regular basis to ensure company compliance.

An integral part of the above certifications is clear and regular communications with members of the public, customers, suppliers and regulatory authorities. Indaver is committed to permanent and open dialogue regarding environmental matters.

1.5 CONSULTATION

1.5.1 Pre-Planning Consultation

Indaver Ireland believes in a policy of openness and dialogue between the company and the local community. The Community was notified in July 2011 of Indaver's intention to apply for additional capacity and additional waste types. Indaver then held a pre-planning meeting with Meath County Council on August 9th 2011 where the proposed amendments were discussed. Meath County Council referred Indaver to An Bord Pleanala on August 24th 2011, as it felt the proposal constituted Strategic Infrastructure Development.

Indaver then formally requested Pre-Application Consultation with the Board on October 25th 2011. Two Pre-Application Consultation meetings were held with the Board on 22nd November 2011 and on 21st March 2012.

Indaver has undertaken a consultation campaign on the proposed amendments to the existing permission. On March 28th, 2012, letters and an outline of the proposed amendments were sent to:

- Carranstown Residents Association
- Eastern Regional Fisheries Board
- National Parks & Wildlife Service
- Unesco
- Indaver Community Liason Committee
- Minister for the Environment & Local Government
- Minister for Communications
- Meath County Council
- National Roads Authority
- North Eastern Regional Planning Authority
- Environmental Protection Agency
- Health Service Executive
- Commission for Energy Regulation
- Health & Safety Authority
- The Heritage Council
- An Taisce
- Local Authorities from whom waste is proposed to be collected.

As advised by An Bord Pleanala during pre-application consultation final meeting on 21st March, 2012, Indaver will submit notice to the above bodies along with a copy of the application prior to its submission.

1.6 PROPOSED ONGOING COMMUNICATIONS

As required by S.37A Application Procedures, Indaver Ireland have established a stand alone website, www.carranstownamendments.ie to ensure easy access to planning and environmental documentation.

Indaver will engage in consultation with the parties named in 1.5.1 above, and will continue to provide information on the proposed amendments as well as existing operations to all interested parties, as detailed below:

Community Liaison Committee

The community liaison committee as set out in condition 5 of our planning conditions has been initiated and consists of eight members and include representation from Meath County Council, Indaver Ireland,

local residents and elected members of Meath County Council. The committee convenes at quarterly intervals and a number of meetings have been held.

Visitors Centre

A Visitors Center has been incorporated into the main building of this facility. The Visitors centre includes a display area outlining the plant operation, and presentations are given on the role of Waste to Energy within the Region's Waste Management Plan, and its contribution towards meeting Ireland's landfill diversion targets.. The centre also doubles as a meeting room which is made available to the community liaison committee.

Information Available to the General Public

Indaver Ireland has an 'open door' policy; groups such as local residents and students, may request a tour of the facility by appointment. Indaver Ireland are happy to accommodate such groups that may wish to visit the facility.

Access to information regarding the operation of the facility will not be restricted to members of the community liaison committee. It is standard practice for the Environmental Protection Agency to require a licence holder to institute a Communications Programme 'to ensure that members of the public can obtain information concerning the environmental performance of the facility at all reasonable times'.

Correspondence between the company and the EPA and information regarding the environmental performance of the facility will also be accessible at the EPA's offices at Johnstown Castle, Co. Wexford. Indaver's annual environmental report will be distributed locally and will be available on the company website.

Quarterly Newsletter

Indaver publishes a Newsletter on a quarterly basis which provides an update on the development of the project. This Newsletter is posted out to people within the local community and will be distributed also within the local area.

1.7 CONTRIBUTORS TO THE EIS

The contributors to the Statement, in alphabetical order by topic, are as follows;

Air Quality	AWN Consulting Ltd
Climate	AWN Consulting Ltd
Construction	McElroy and Associates
Cultural Heritage	WYG
Ecology	WYG
Human Beings	WYG
Human Health	EHA
Interactions	WYG
Landscape and Visual Appraisal	ARC Consultants
Material Assets	WYG
Noise	AWN Consulting Ltd
Non-Technical Summary	WYG
Orchestration of Statement	WYG
Project Development and Description	Indaver Ireland
Roads and Traffic	ROD
Soils and Geology	WYG
Water	WYG

1.8 DIFFICULTIES COMPILING SPECIFIED INFORMATION

No difficulties were encountered during the compiling of the EIS.

1.9 REFERENCES

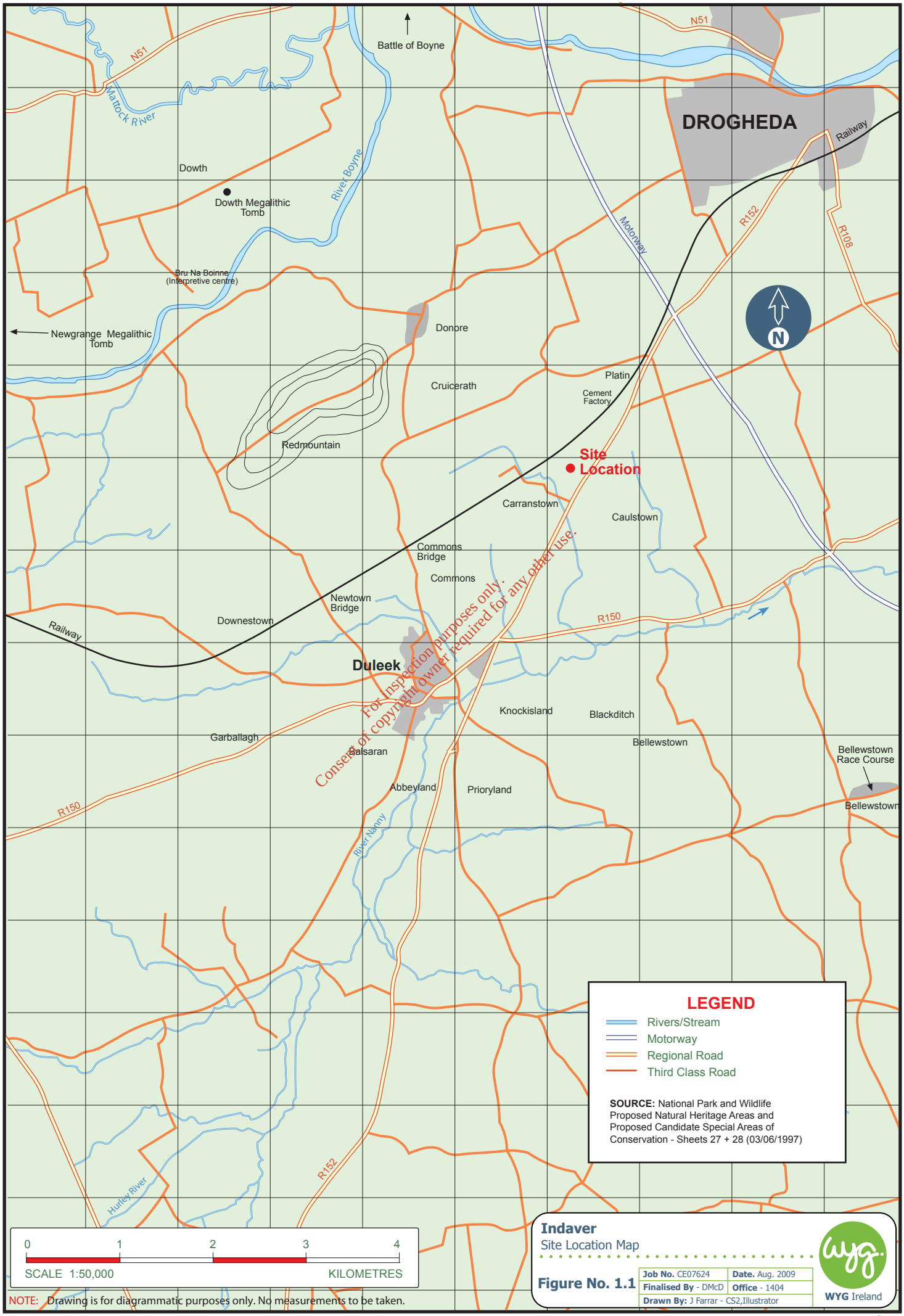
Environmental Protection Agency (2002) Guidelines on the Information to be contained in Environmental Impact Statements

Environmental Protection Agency (2003) Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.

The European Communities Environmental Impact Assessment (Amendment) Regulations 1999, SI No 93 of 1999

Planning and Development Regulations 2001, S.I. No. 600 of 2001.

Planning and Development Regulations (Strategic Infrastructure Act) 2006



2 BACKGROUND TO THE PROJECT

2.1 INTRODUCTION

The Meath Waste to Energy facility has been built in accordance with the permissions of PL17.219721 & SA60050 (Final Grant 15/10/2007) & SA901467 (Final Grant 14/12/2009). The construction phase of the project spanned a three year period, ending in the hot commissioning phase in August 2011, and the facility has been in full operation since October 2011, operating under EPA Waste Licence W0167-02.

This chapter has been prepared based on the previous assessment of the scheme completed as part of the 2006 EIS and the 2009 EIS and planning application.

The proposed amendments sought by this application in terms of the additional waste types and additional capacity do not result in any change to the nature of the process or waste handling procedures (with the exception of one waste type if granted). The other proposed changes (conversion to permanent status of structures, car parking) require only minor construction works. The amendments are summarised below:

2.1.1 Summary of Amendments

- 20,000 tonnes (10%) increase in annual throughput
- Inclusion of additional EWC Codes (hazardous and non hazardous)
- Amendment of waste acceptance hours:

Current	**Proposed**	Period
08:00 – 18:30	**06:00 – 20:00**	Mon - Fri
08:00 – 14:00	**06:00 – 14:00**	Sat

- Unrestricted hours for the dispatch of residues from site
- Future additional capacity ammonia storage tank and fuel oil tank
- Convert hardcore area for contractor parking during construction to permanent status
- Conversion from temporary to permanent status of two structures:
    - Spare Parts Warehouse & associated electrical switchgear building with hard core surround.
    - Single storey modular office block & associated electrical switchgear building and to include:
        - Effluent treatment plant

- Paved roadway (with hard cored area to each side) leading to office block
- 22 additional paved car parking spaces added to existing car park

2.2 NEED FOR THE SCHEME

2.2.1 MSW Capacity

The need for the existing facility with 200,000 tpa capacity was established in the planning permission PL17.219721 granted for the facility in October 2007 and again in planning permission SA/901467 granted in December 2009. The reasons and considerations given in the final permission referred to:

- the national waste management policy framework and strategy as set out in Government Policy Statement Taking Stock and Moving Forward (2004)
- the National Development Plan (2007-2013) provisions in regard to waste management
- the National Strategies on Biodegradable Waste (2006) and Climate Change (2007-2012)
- the Waste Management Strategy for the North-East region as set out in the current North-East Regional Waste Management Plan (2007).

There has been no change in policy. The only changes in legislation have reinforced the position of waste-to-energy in priority over disposal options, including landfill.

In the EIS submitted in 2009, the position of waste-to-energy in the waste hierarchy ahead of landfill disposal was due to be updated in the national policy framework. While national legislation has been adopted that cements this position in line with the Waste Framework Directive, an update in national waste policy is still pending. Overall, there have been some key legislative developments but no changes yet to waste and energy policies and plans since the 2009 planning decision. This is discussed further in Section 4, Planning and Policy Context.

In line with the 2009 approval, the facility was designed and built to accept 200,000 tpa. This was based on an expectation of the average calorific value of Irish residual municipal waste being 9.35MJ/kg.

However, since commencing operations it has become apparent that the actual calorific value of Irish waste is much lower than 9.35 MJ/kg and is closer to 8 MJ/kg. This implies that the waste possibly has a higher biodegradable waste content than anticipated.

Similar to other conventional solid fuel power plants, the tonnage throughput of waste-to-energy facilities is defined by the size of the boiler (thermal capacity), the average expected CV of the waste and the number of operating hours per annum. In the Meath WTE facility, the boiler has a design

capacity of 70MW. If the waste has a low calorific value, then more waste needs to be processed to achieve the same thermal output. Conversely, if waste has a higher calorific value then less waste is processed to achieve the same thermal output.

As Irish waste currently has a lower calorific value, more waste can be processed at the facility than previously expected to meet the thermal capacity of the boiler. As a result, it is estimated that an additional 20,000 tpa capacity is now available at the Meath WTE facility bringing the total capacity to 220,000tpa.

It is submitted that the rational approach is to use this available capacity to support the waste management plans of other regions, that have been unable to realise their own plans to develop thermal capacity and/or that lack pre-treatment capacity. It may also mean that An Bord Pleanála could consider extending the capacity of the plant for a specified period until other treatment options become available in the other regions. It is important to note that when more material has been pre-treated (eg processing in mechanical and/or biological treatment plants) prior to delivery to the Meath WTE Facility, it is expected that the calorific value of the waste would be increased, and lower tonnages processed to achieve the same thermal output. This would provide for greater inter-regional co-operation, which is recognized in WIR 04/05 in 2005 as a means to:

"support the attainment of national waste management policy objectives through the rational development and use of such infrastructure".

The draft policy document *Towards a new National Waste Policy* proposes to give further consideration to:

"existing policy flexibilities in relation to inter-regional movements of waste … so that regional boundaries do not operate in a rigid manner, preventing the most efficient use of infrastructure in pursuit of overall national targets/obligations".

One current and important national target comes from the Landfill Directive, limiting the amount of biodegradable waste (BMW) that can be consigned to landfill. These targets have been applied by the EPA to individual landfill licences, which obliges them to limit the % intake of BMW over the year. Figure 2.1 below shows compliance of landfills around the country with this obligation.

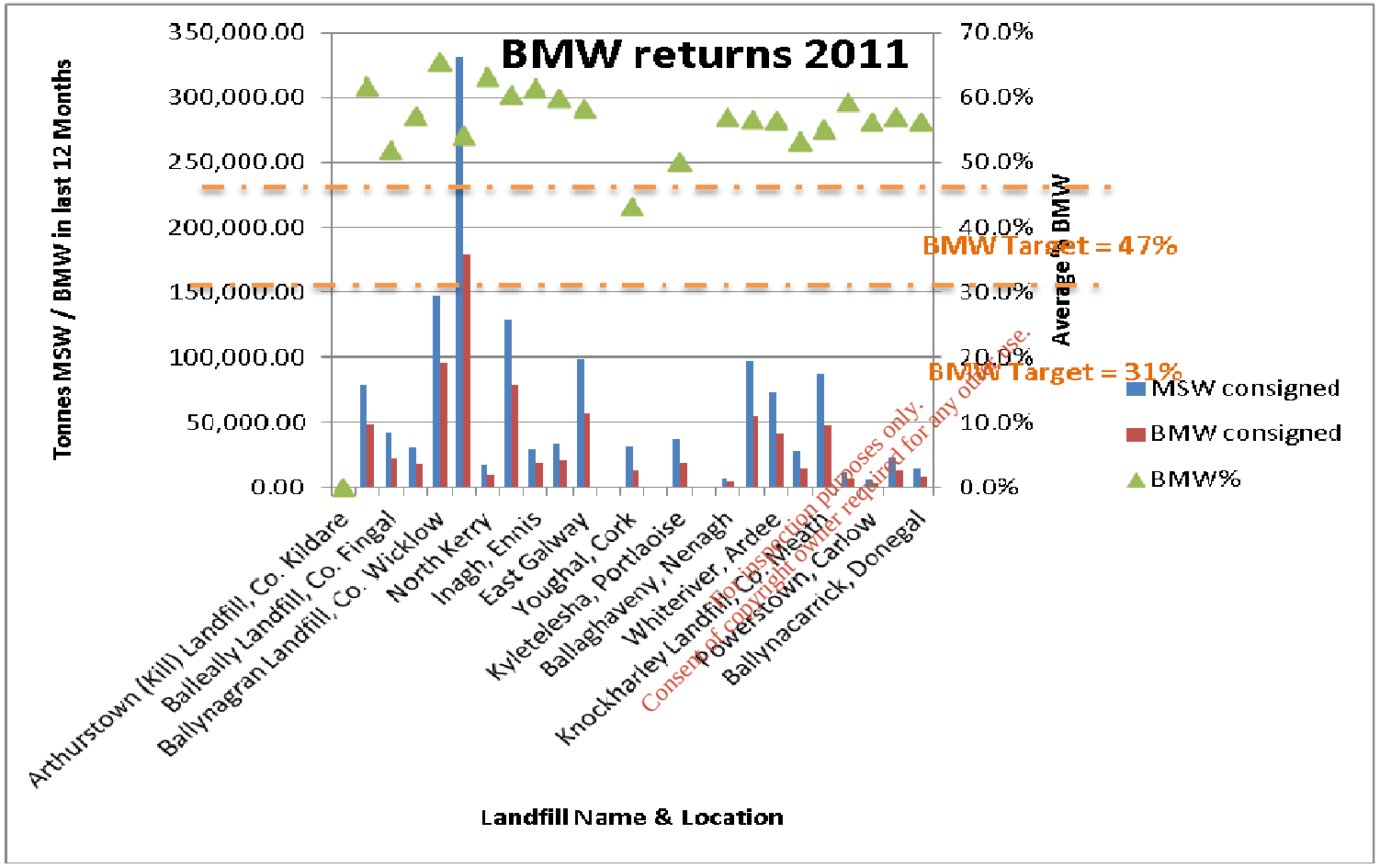


Figure 2.1 Landfill Returns 2010-2011

SOURCE: Data from Landfill BMW returns, EPA (not validated)

This graph compiles data returns from individual landfills for the period Q4 2010 to Q3 2011. This shows that only two landfills have met or performed better than the limits imposed on them in the most recent 12 months. All other landfills in the country exceeded the BMW targets set in their licence conditions.

This demonstrates that most regions are failing to provide sufficient pre-treatment capacity to meet the landfill obligations. The Meath waste-to-energy facility can assist in providing this.

2.2.2 Additional EWC Codes

The amendment to the EWC list to include hazardous waste codes is to facilitate waste from Civic Amenity Sites and other Industrial Producers. It is emphasised that only certain types of hazardous waste will be suitable for treatment in the Meath WTE facility. Most of these are already present in the MSW waste being currently accepted on site, (e.g. paint tins, rags and wipes contaminated with paints or oils), and are treated without difficulty. When these streams are collected separately, as from a Civic Amenity Site, they are classified as hazardous in line with the European Waste Catalogue. This may be due to their chemical or physical properties, but does not imply that they are dangerous to handle (i.e. they are handled by householders and businesses regularly). Other streams applied for include "low hazard" materials such as PPE/Clothing from use in industry, filters, absorbents, redundant over the counter preparations, medicines, raw materials such as sugars, starches and gelatin tablet coatings. The list of the proposed EWC codes will be submitted to the EPA for approval with the Waste Licence Application. The list, which contains all of the EWC codes proposed with examples of waste descriptions within those codes, is also provided in Table 2.1 below.

In 2009, Ireland exported 150,395 tonnes of hazardous waste (EPA National Waste Report 2009). The majority of this hazardous waste exported from Ireland requires more specialist treatment than exists at the Meath WTE facility (A hazardous thermal treatment facility for the Cork region has been proposed by Indaver. This facility would be designed to manage hazardous waste streams that involve more complex handling and treatment).

The streams proposed for the Meath WTE facility in this application however, could be handled with no change to the existing technology or processes, the only exception being medical or infectious wastes for which a direct feeding mechanism will have to be installed. Indeed, the nature of the proposed waste streams would aid in balancing out waste with a lower calorific value. In 2010, Indaver managed 65,952 tonnes of hazardous waste for its customers, the majority of which was exported for treatment. It was from this exported material that certain waste streams were identified as being suitable for diversion from export, to treatment at the Meath WTE facility. It is estimated that approximately 10,000 – 15,000 tonnes per annum of these low hazard waste streams could be treated at the Meath WTE facility. Indeed the separately collected waste streams are being exported to mainland Europe for thermal treatment in facilities similar to the Meath WTE facility.

Table 2.1 – List of proposed new EWC Codes and Waste Types

EWC	Example of Material	Industry Source	Waste Management Region
160507*	Toilet bowl or other cleaners, detergents etc.	All industry	ALL Regions
160508*	Denture fixative waste	All industry	ALL Regions
160303*	Colourings used in cosmetic manufacture	All industry that generates off specification or redundant products	ALL Regions
160305*	Cosmetic eye shadow base, mascara, lipstick	All industry that generates off specification or redundant products	ALL Regions
150202*	Rags and cloths contaminated with paints	All industry that uses aborbents/filters/PPE etc	ALL Regions
150110*	Plastic jerricans previously containing cleaning agents	All industry that uses packaging	ALL Regions
170204*	Wood from dismantled warehouse contaminated with creosote or other preservative	Construction & Demolition projects	ALL Regions
170903*	Construction & Demolition waste such as window frames from a pharmaceutical building - may contain trace pharmaceutical powders.	Construction & Demolition projects	ALL Regions
170505*	Dredging spoil from firewater retention ponds	Construction & Demolition projects	ALL Regions
170503*	Soil & stones from clean up operations resulting from building foundations where possible contamination has occurred (e.g. on pharma site - old building)	Construction & Demolition projects	ALL Regions
180103*	Medical/Infectious Wastes.(Excluding Sharps) from Clinics, nurses stations etc.	Healthcare industry, users of healthcare/diagnostic/research products	ALL Regions
130701*	Waste fuel oil and diesel	Manufacture/supply use of oils & fuels	ALL Regions
070101*	Water from a spill clean up containing trace oils and adhesive powders.	Manufacturers or users of organic chemicals	ALL Regions
080308	Waste Ink Solution (Water and Non hazardous Ink Solids) , paint and water	Manufactures or users of paints & inks	ALL Regions

	mixture		
200137*	Treated wood from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
200127*	Paint cans, and paint waste from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
200128	Water based paint from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
070501*	Rinsewaters containing trace pharmaceutical residues.	Pharmaceutical manufacturers or users	ALL Regions
070513*	Headache tablets	Pharmaceutical manufacturers or users	ALL Regions
070511*	Waste water treatment sludge from pharmaceutical plant - trace pharma powders may be present	Pharmaceutical manufacturers or users	ALL Regions
191303*	Sludges from soil remediation - e.g. illegal dumping clean up	Soil & Groundwater remediation Projects	ALL Regions
160107*	Discarded oil filters from garages and mechanics	Vehicle/Machinery Maintenance	ALL Regions
191206*	Wood (treated) from waste management facilities	Waste Management Facilities	ALL Regions
191211*	Shredded paint buckets and cans - contents previously pumped off and packaging shredded	Waste Management Facilities	ALL Regions
191003*	Material from shredding of white goods (after recycling) may contain some trace hazardous materials such as plastics with brominated flame retardants.	Waste Management Facilities where there is metal shredding	ALL Regions
190811*	Waste water treatment sludge from local authority treatment plants where possible contamination may have occurred	Waste water treatment plants	ALL Regions
030104*	Wood shavings and small pieces of wood, treated with preservative, from furniture/window manufacturers	Wood Processing/Furniture manufacturer	ALL Regions

190113* 190112	190107*	Flue Gas Treatment residues, bottom ash and boiler ash, temporarily returned to site before being re-sent for treatment	Indaver Ireland WTE, Carranstown	NE Region

There are currently limited alternative treatment options for this material in Ireland and no alternative recovery options, as discussed further in Section 3.

It is therefore submitted that the rational approach, as for the additional MSW capacity, is to use existing infrastructure at the Meath waste-to-energy facility for these select hazardous waste streams and thereby reduce waste exports. This would align with the core objectives of Irish and EU waste policy including the proximity principle, improving self-sufficiency in waste treatment and reducing the environmental impacts associated with waste transport.

2.2.3 Amendments to Waste Acceptance Hours and Dispatch of Residues

As can be seen in more detail in Chapter 13 Traffic, and discussed further in Section 5.4.3, the hours of waste acceptance currently result in a peak of deliveries for the first half hour slot of 08:00 – 08:30, and also during the lunch hour slot of 13:00 to 13:30. This also coincides with peak time commuter traffic. It is in an effort to even out these peaks in numbers during rush hour traffic that the amendment to waste acceptance hours is sought.

Unrestricted hours for Waste Residues leaving site (Bottom ash, flue gas cleaning residues and boiler ash etc.) is sought, again to spread off-site movements more evenly throughout the day as well as facilitating the movement of containers of flue gas cleaning residues & boiler ash to Dublin Port for export for treatment (See Section 5.4.4) under Regulation EC1013/2006 without postponement/cancellation of these shipments with the National TFS Office and Competent Authorities in destination countries.

2.2.4 Change in status of temporary structures and car park area

Indaver seek to convert from temporary to permanent status the existing spare parts warehouse and single storey office block.

It is Indaver's intention to establish a Central Maintenance Depot for storage of spare parts, machinery and maintenance related materials at the Meath WTE Facility. This warehouse would not only serve the needs of the WTE plant on site, but also any requirements of our Dublin Port Waste Transfer Station and Solvent Blending Facility. In the future, it is hoped that this warehouse will also serve Indaver's Cork WTE Facility which is currently in the planning process. The proximity of the Meath WTE facility to Dublin Airport's many air links to Europe and beyond make this an ideal location for this new Depot.

The Electrical Switchgear building associated with this warehouse is included in this application. The area of hard core adjacent to the warehouse used during the construction period may again be required for lay down of materials and equipment during annual shutdowns and hence forms part of the application.

The conversion of the Office Block from temporary to permanent, to accommodate Indaver Staff visiting from other sites, house additional meeting rooms, and be a base for any contractors needed on site from time to time, is also sought. Its location, separate from the main process building, will keep contractors/other Indaver staff away from the main process building and office space in order to have minimal disruption to general operations. The electrical switchroom associated with this structure is also included in this application.

Currently the effluent from this building is discharged to a holding tank. It is proposed to add a Puraflo Effluent Treatment system to the North North-East side of the office building as an improved treatment solution.

To accommodate the visiting staff/contractors to be housed in this Office Block, an additional 22 paved car park spaces are proposed for the existing car park to the East of the Security Building.

When the facility is on a shutdown for maintenance, the hard cored area designated for contractor parking during the construction phase may be needed. It is proposed that this area be converted to permanent status also.

This application also proposes that the access road to the Office Block be paved (with hard cored areas on either side of this paved area) to provide an even surface by which to approach the office block.

2.2.5 AMMONIA AND FUEL OIL STORAGE TANKS – FUTURE ADDITIONAL CAPACITY

It is anticipated that at some future date, additional storage capacity on site for Ammonia and Fuel Oil would be beneficial to operational efficiency. This would enable the frequency of deliveries to be optimised. Currently, the storage capacity for Fuel Oil is 44m^3 and Ammonia is 62m^3. If determined that additional capacity is necessary, it is proposed to install duplicate storage tanks beside the existing storage tanks, in effect doubling the capacity of each. The layout of these additional tanks are shown in Figure 5.4 and on the drawings accompanying the application. The addition of an extra oil tank would also allow for the possibility to burn waste oil (EWC Code for waste oil is listed in the table above) to balance with the burning of low CV wastes.

3 ALTERNATIVES

As part of the EIA assessment process, alternatives are considered under the following areas:

- Alternative Locations
- Alternative Treatment Technologies
- Alternative Waste Management Strategies
- Alternative Designs

3.1 ALTERNATIVE LOCATIONS

For the purposes of this application, given the existing planning permission for the development, the suitability of the site location for a WTE Facility is established and unchanged from the final permission granted in October 2007. The increase in throughput of 20,000 tonnes per annum will, however, impact the amount of waste processed and the traffic associated with the existing permission. While it is not viable to develop a dedicated standalone waste-to-energy facility to accept 20,000 tonnes of waste per annum, and co-location with the only available existing facility for thermal treatment is the most sensible choice, the alternative location could be at a different existing waste treatment site. The suitability of the site for the additional 20,000 tonnes per annum throughput will be assessed on this basis in sections 3.2.1 and 3.2.2 below.

In terms of alternative locations for the proposed Central Maintenance Depot, the primary criterion considered was distance from the existing facility in Carranstown, whose maintenance requirements are the main ones to be serviced by this new Depot. The second criterion was to look at access to international airports and port facilities for efficient of dispatch of spare parts from all over Europe. The Carranstown site is only 20 minutes north of Dublin airport and is linked by the M1 motorway. The ports of Drogheda and Dublin are also nearby and give adequate options for the import of larger parts, plant and equipment. The third consideration was proximity to Indaver's Solvent Blending Facility and Waste Transfer Station in Dublin Port which will also be serviced by the centralised maintenance depot. Again, the Carranstown site is only 30 minutes by road from the Dublin Port facility and linked by the M1 and Dublin Port tunnel.

Alternative locations of an office block to cater for Indaver Staff and outside contractors temporarily visiting, as well as additional meeting rooms for staff permanently based at the Meath WTE site were not considered, as it would not be feasible to have site based activities located off-site.

3.2 ALTERNATIVE TREATMENT TECHNOLOGIES

The Facility now operates with a moving grate furnace with a two stage flue gas cleaning system and energy recovery. The extra capacity proposed will comprise MSW and hazardous waste, but the exact split between the two waste types over the 20,000 tonnes will be driven by market factors and the availability of certain waste types should planning permission be granted.

3.2.1 MSW

There are three main alternatives for the treatment of 20,000 tonnes per annum additional MSW capacity at present in the Irish market (if we assume that all of the additional 20,000 tonnes applied for is MSW and not hazardous waste):

- Direct to landfill (following source separation)
- Wrapping/baling followed by export for recovery (following source separation)
- Mechanical treatment followed by landfill and/or export for recovery

Continuing to consign waste to landfill with no further pre-treatment will become more challenging from 2013 onwards, when the restrictions on the percentage of Biodegradeable Municipal Waste (BMW) sent to landfill become tighter. Other EU and national waste policy also seeks to reduce the amount of waste going to landfill. Landfill closures in many regions have been realised and further closures are pending. For instance, Inagh Landfill in Co Clare closed on Nov 25, 2011 and the remaining fully functional landfill in the region, Gortnadroma is expected to close in 2013. This scenario is repeated in many regions throughout the country, whilst in others, facilities (such as Cork's Bottlehill) have had their opening postponed indefinitely. More local to the Meath facility, plans for the Nevitt landfill for North Dublin have also been abandoned. This means landfill of residual untreated MSW is therefore not regarded as a sustainable or appropriate solution

Wrapping and baling followed by export is a more likely alternative than the above, but is only an interim solution which is heavily dependant on the availability of surplus incineration capacity in Europe at very low gate fees. This surplus capacity is already being availed of by the U.K., Ireland and Italy and as this capacity diminishes over time (assuming also that economic growth returns in the Eurozone over the next 5-7 years), gate fees will increase and this solution will no longer be viable.

Mechanical treatment followed by landfill/export is another alternative, but there is not enough of this capacity available in the market and the availability of such treatment capacity will depend on the ability of the private sector to invest in the waste market. Over the last number of years, there have been a number of barriers to investment in alternatives to landfill, including regulatory and policy uncertainty, a

lack of coordinated regional waste plans, lengthy planning delays[1], and a lack of finance available for development. The current economic climate only exacerbates policy and regulatory uncertainty, particularly where project finance is required. With a major consultation ongoing at present regarding the key issue of ownership of waste, these barriers remain. Therefore, it is unlikely that sufficient capacity to meet national waste policy targets will be developed in the near to medium term.

3.2.2 Hazardous Waste

As described in Section 2.2.2 the types of hazardous waste proposed will be of a lower hazard nature than those proposed for the Ringaskiddy Cork WTE Facility.

It is important to recognise that while a particular EWC code may cover the relatively benign wastes intended for the Meath WTE, the same EWC code may also be assigned to other waste types that would be in no way suitable for acceptance in the Meath WTE facility, but would need to be treated at the proposed Ringaskiddy facility or at a specialist facility.

Likewise, the proposed waste types may have the same EWC code as those on the licence of a cement plant, but their physical/chemical characteristics may be such that they would not be suitable for use as part of the cement manufacturing process.

It will be the waste characterisation and screening procedures and Waste Acceptance Criteria that will determine the suitablility of each waste stream for the Meath WTE.

It is anticipated, (based on waste streams currently exported by Indaver Ireland Ltd) that the maximum amount of suitable hazardous waste will be between 10,000 and 15,000 tonnes per annum. Due to the nature and quantity of the wastes identified, there are no modifications required to the Meath WTE facility or the waste handling processes. Hence the Meath facility is suitable for acceptance of these wastes and the alternatives are discussed below.

The alternatives to the above can be summarised as follows;

- Export for disposal & recovery
- Divert to existing treatment facilities
- Develop Ringaskiddy, Cork Waste to Energy Facility

It is clear that the alternatives are limited, but continuing to rely on an export solution does not follow the proximity principle, nor allow for self sufficiency and is not sustainable in the longer term. Furthermore, it would go against one of the key objectives of the National Hazardous Waste Management Plan which is to:

[1] Forfas (2008), *Waste Benchmarking Analysis and Policy Priorities*, Forfas, available at http://www.forfas.ie

"strive for increased self sufficiency in the management of hazardous waste and to reduce hazardous waste export"

Another alternative is to divert to existing facilities that can accept hazardous waste. Broadly this can be broken into two categories

- Existing Waste Management Facilities
- Cement Kilns

Indaver already utilises the existing hazardous waste management facilities in the country within the portfolio of hazardous waste that we handle. We intend to continue to use this available capacity for waste suitable for these facilities. However, the waste identified as being suitable for the Meath WTE cannot either be accepted or fully treated at these WMFs (indeed some of the wastes identified are waste streams from these WMF's), and is currently being exported. A local solution for the treatment of waste is preferable as the already high transport costs and increasing fuel surcharges incurred by exporting waste is proving to be very challenging for producers of waste in the current economic climate.

Cement kilns can accept some hazardous waste but are limited by their flue gas cleaning technology and the final specification of their end product. There are a number of handling considerations in preparing and feeding hazardous waste streams to cement kilns that may limit intake such as particle size (depending on where the fuel is injected) and achieving a homogeneous feed. Wastes typically accepted by cement kilns are solvents, extensively pre-treated SRF, tyres and meat & bone meal which we accept are suitable for treatment in such installations, but as seen from the list in Section 2.2.2 are not proposed for the Meath WTE.

Indaver is committed to the development of the Ringaskiddy Waste to Energy facility but due to planning delays, it may take several years before construction can begin. Many of the hazardous waste streams such as chlorinated solvents and other more difficult hazardous wastes that are driving the development of the Ringaskiddy facility could not be treated at the Meath WTE plant. However, an amount of the less hazardous streams can easily be diverted to Meath, reducing exports and offering a more sustainable solution for businesses and industry on the island. This in our view does not jeopardize the viability of the Cork Project as the demand for a difficult hazardous waste outlet will remain.

3.3 ALTERNATIVE WASTE MANAGEMENT STRATEGIES

The Meath WTE Facility is still in line with current National, Regional and European Policies, as discussed in section 4.2.3

3.4 ALTERNATIVE DESIGNS

Alternative Designs

This application includes the conversion of two existing temporary structures on site to permanent structures. These are the proposed Modular Office Block and the Centralised Maintenance Depot. The main consideration given was to effect the conversion of these structures in the least intrusive manner possible. The structures are in situ as part of the construction of the facility, and it was felt that making no changes to the appearance or lay-out would allow for the very minimum of construction activities, raw material usage, and general disruption to the operations on site.

4 PLANNING AND POLICY CONTEXT

4.1 INTRODUCTION

This section intends to outline how the amendments proposed in this application do not impact on the planning and policy context of the waste-to-energy facility at Carranstown, Co. Meath.

4.2 ASSESSMENT OF PLANNING AND POLICY CONTEXT

This section reviews whether or how the proposed additional 20,000tpa capacity and the acceptance of hazardous waste impacts on the policy rationale used in the planning decisions of both Meath County Council and An Bord Pleanala (ABP) in 2007 and 2009 accepting the need for the scheme at 200,000tpa capacity.

Specifically, this relates to policy that affects:

- The role of waste-to-energy as a waste treatment option (e.g. does the additional capacity align with current policy)
- The scale of waste-to-energy facilities and their location in relation to waste arising
- The co-treatment of hazardous and non-hazardous waste
- Hazardous waste management

These points are addressed separately below.

4.2.1 The Role of Waste to Energy

Since the previous planning permission was granted in November 2009, there have been relatively few changes to the Irish waste and energy policy environment. Existing policy continues to favour landfill diversion, promote the waste hierarchy and support the development of waste-to-energy capacity.

The key European Strategies and Directives relating to municipal waste, the Waste Framework Directive (2008/98/EC) and the Landfill Directive (1999/31/EC), remain unchanged. However, on a domestic level, these Directives have more recently been implemented and have a number of practical implications for the waste sector as discussed below.

Waste Framework Directive

The Waste Framework Directive was transposed into Irish legislation in early 2011. This means that the Regional Waste Management Plans and the National Hazardous Waste Management Plan must be evaluated by 31 December 2012 and, if necessary, be revised to be brought into line with the requirements of the Waste Directive (as specified in the *European Communities (Waste Directive)*

Regulations 2011). In particular, this will involve the introduction of the waste hierarchy as a priority order in the waste management strategy that each plan adopts, which was not previously the case.

The regulations also specify that waste producers and holders must ensure that waste undergoes recovery operations in line with the waste hierarchy. This applies to both hazardous and non-hazardous waste and is to be enforced by the EPA and Local Authorities through licences and permits insofar as is possible. The current lack of infrastructure means that waste producers and holders cannot comply.

These changes will strengthen the role of the waste hierarchy and support driving waste away from landfill, towards recovery activities like waste-to-energy.

Landfill Directive

Since 2009, Ireland has also entered into its first compliance year for the diversion of biodegradable municipal waste (BMW) from landfill under the Landfill Directive (starting in July 2010). The EPA has effectively applied these diversion targets to individual landfill facilities rather than on a regional or national basis via conditions in the landfill waste licences. These conditions restrict the quantity of biodegradable waste acceptable at landfill to 47% by weight of MSW intake from the 1st July 2010, and to 30% of intake from 2013 onwards. From 2016, only 15% by weight will be allowed to landfill. To meet these restrictions, a significant amount of MSW pre-treatment capacity is required; based on 2010 EPA data[1], up to 430,000tpa MSW capacity to meet 2013 - 2016 targets and a further 317,000t capacity to meet 2013 – 2016 targets.

Figure 2.1 in Chapter 2 and Figure 4.1 below show that only two landfills have met or performed better than the restrictions on biodegradable waste in the last 12 months. All other landfills in the country breached their BMW licence conditions. The EPA has confirmed that enforcing these licence conditions is now a priority for 2012. This will drive a need for waste-to-energy and other pre-treatment options that divert BMW away from landfill. Therefore, the Landfill Directive continues to be an important driver for waste-to-energy capacity development.

[1] See EPA National Waste Report 2010, available at http://www.epa.ie

Figure 4.1

Figure 4.1: Residual Waste Disposal in Ireland 2010-11

Facility	Operator	BMW % 2010 Q3	BMW % 2010 Q4	BMW % 2011 Q1	BMW % 2011 Q2	BMW % 2011 Q3	BMW % 2011 Q4	BMW % - average
GDA								
Arthurstown (Kill) Landfill, Co. Kildare*	Dublin City Council	47.00%	47.00%					47.00%
KTK Landfill, Co. Kildare	Greenstar			62.70%	59.98%	63.40%	0.00%	
Balleally Landfill, Co. Fingal	Fingal Co. Co.	50.90%	48.79%	50.82%	50.00%	53.55%	55.71%	51.11%
Rampere Landfill, Co. Wicklow	Wicklow Co. Co.	62.82%	57.30%	58.65%	55.90%	54.04%	49.84%	57.76%
Ballynagran Landfill, Co. Wicklow	Greenstar	63.59%	64.06%	65.57%	65.88%	63.04%	68.20%	64.87%
Drehid, Landfill, Co. Kildare	Bord Na Mona	53.27%	57.25%	57.95%	54.05%	53.76%	52.14%	54.61%
South West/Mid West								
North Kerry	Kerry Co. Co.	61.49%	61.89%	62.51%	63.78%	63.07%	63.41%	62.61%
Gortadroma, Limerick	Limerick Co. Co.	63.78%	62.75%	61.39%	60.44%	60.96%	58.49%	61.19%
Inagh, Ennis	Clare Co. Co.	53.28%	48.32%	59.78%	58.68%	64.38%	61.61%	58.75%
Connaught								
Derrinumera, Castlebar	Mayo, Co. Co.	61.44%	61.30%	60.45%	59.79%			60.42%
East Galway	Greenstar	62.82%	59.39%	63.75%	60.11%	56.43%	52.63%	59.38%
Ballaghaderreen, North Roscommon	Roscommon Co. Co.	54.02%	closed					54.02%
Cork								
Youghal, Cork	Cork Co. Co.	60.97%	46.78%	51.76%	42.78%	35.18%	39.87%	47.39%
Derryconnell, Cork	Cork Co. Co.	63.81%	closed					63.81%
Midlands								
Kyletelesha, Portlaoise	Laois Co. Co.	50.36%	51.41%	49.93%	51.64%	45.56%	52.28%	50.17%
Ballydonagh, Athlone	Westmeath Co. Co.	72.03%	closed	closed	closed	closed	closed	72.03%
Ballaghaveny, Nenagh	North Tipp Co. Co.	61.42%	58.96%	56.81%	56.81%	56.81%		58.48%
Derryclure, Tullamore	Offaly Co. Co.	55.04%	58.05%	50.92%	60.08%	59.63%	58.93%	56.48%
North East								
Whiteriver, Ardee	Louth Co. Co.	45.90%	47.16%	60.71%	60.71%	60.71%	9.60%	53.87%
Scotch Corner, Monaghan Town	Monaghan Co. Co.	50.63%	52.45%	54.93%	53.37%	50.53%	46.40%	52.58%
Knockharley Landfill, Co. Meath	Greenstar	56.32%	57.23%	59.42%	53.41%	50.67%	57.05%	55.79%
South East								
Donohill, Tipperary Town	South Tipp Co. Co.	54.90%	59.79%	62.61%	58.62%	55.31%	61.81%	58.88%
Powerstown, Carlow	Carlow Co. Co.	55.52%	56.42%	57.27%	55.68%	56.86%	54.41%	56.10%
Holmestown, Wexford	Wexford Co. Co.	55.73%	55.36%	55.35%	57.03%	57.63%	57.87%	56.32%
Donegal								
Ballynacarrick, Donegal	Donegal Co. Co.	60.89%	60.26%	57.36%	53.21%	57.52%	58.64%	58.20%
Total Disposed		**55.75%**	**56.43%**	**58.48%**	**57.50%**	**57.41%**	**54.97%**	**56.79%**

SOURCE: Data from Landfill BMW returns, EPA (not validated)

Renewable Energy Directive

Since the previous planning application in 2009, Directive 2009/28/EC on the promotion of the use of energy from renewable sources was published. This sets mandatory renewable energy targets for Member States to achieve by 2020. The definition of biomass as a renewable energy resource includes "the biodegradable fraction of industrial and municipal waste", which means that waste-to-energy facilities treating this fraction (which is inseparable from municipal waste) generate renewable energy.

The Renewable Energy Directive was transposed into Irish legislation under the *European Communities (Renewable Energy) Regulations 2011* . Ireland's target under the Directive is 16% energy from renewable sources, which is to be achieved through 40% renewable electricity, 10% electric vehicles and 12% renewable heat by 2020.

These targets support the generation of electricity from waste through waste-to-energy technology.

National Waste and Energy Policy

There have been no new national waste or energy policy developments since 2009. Existing policy – including the *National Climate Change Strategy*, *Waste Management: Taking Stock and Moving Forward (2004)*, *National Strategy for Biodegradable Waste (2006)*, *Policy Guidance WIR 04/05, Bioenergy Action Plan for Ireland (2007)* and the *National Development Plan 2007 – 2013* all support the development of waste-to-energy capacity as a preferred treatment option for residual waste, that diverts waste from landfill and generates renewable energy. These were addressed in detail in the previous planning application.

There have been two recent pieces of legislation introduced that provide for increasing the landfill levy. The *Environment (Miscellaneous Provisions) Act 2011 (No. 20 of 2011)* introduced powers to the Minister to increase the landfill levy by up to €50/t per year to a maximum level of €120/t. S.I. No. 434 of 2011 (*Waste Management (Landfill Levy) Regulations 2011)* enabled the first increase under the new Act, which brought the landfill levy to €50/t from September 2011. The regulations also provided for an exemption from the levy for bottom ash from waste-to-energy plants. This ensures the overall effect of the levy is to dis-incentivise landfill and not its alternatives. The levy confirms the States support for the hierarchy, but recent market conditions would indicate that the first levy increase has not been enough and that more needs to be done. This can be achieved by further increases in the levy which have been proposed but have net been legislated for and/or by policy measures such as the direction of waste via the Waste Collection Permit system.

Regional Waste Policy

The Waste Management Plan for the North East Region, last updated in 2005, confirmed the need for a 150,000 – 200,000tpa capacity waste to energy facility. At 220,000tpa, the Meath facility would exceed this regionally required capacity if it were only to service the North East Region. However, it is submitted that the additional capacity available at the facility should be used to help meet national

targets and obligations such as the Landfill Directive (see above) through inter-regional cooperation. This is addressed in more detail below.

The County Meath Development Plan (2007-2013) supports this suggestion insofar as it includes the policy goals of implementing the hierarchy and the Regional Waste Management Plan, taking into account the proximity principle, the inter regional movement of waste and the need for quality, cost effective waste infrastructure and services that align with the polluter pays principle. As previously stated in Section 2.2.1, the Planning Authority may decide to limit the time-frame for such an extension of capacity until the required infrastructure in other waste management regions is developed in line with their respective waste management plans. It is estimated that more certainty in Waste Policy may incentivise development in this area.

Summary

Overall, any recent changes in waste policy or legislation have served to strengthen the position of waste-to-energy as an alternative to landfill for residual waste. Therefore, the proposed additional 20,000tpa capacity aligns with current policy in terms of being a suitable preferred treatment type for residual waste. The policies discussed above are summarised in the table below.

Policy / Legislation	Update?	Description	Impact on Facility
Waste Framework Directive	Transposed in early 2011	Requires review of regional waste plans, and the application of the waste hierarchy as a priority order. Requires waste producers / holders to ensure waste undergoes recovery.	The facility will provide a higher in hierarchy recovery outlet for both hazardous and non-hazardous waste.
Landfill Directive	Now in compliance year 2010 – 2011	The EPA applied limits on landfill licences on the acceptance of biodegradable waste. Landfills are not currently meeting these targets.	The facility will provide additional capacity to assist in diverting biodegradable waste from landfill.
Renewable Energy Directive	Updated & transposed	Sets mandatory renewable energy targets (16% for Ireland)	The facility will contribute to renewable electricity targets
Existing Irish Climate Change, Waste and Energy policy	No change	Existing policies support the development of waste-to-energy capacity as a preferred treatment option for residual waste.	The facility will provide additional waste-to-energy capacity to help meet landfill diversion and other targets
Environment (Miscellaneous Provisions) Act 2011 (No. 20 of 2011)	New	Introduces capacity for Minister to increase landfill levy by up to €50/t at a time to a maximum of €120/t.	The facility will provide an alternative to landfill that this levy is aimed at promoting.
(Waste Management (Landfill Levy) Regulations 2011)	New	First landfill levy increase under the above act – brings the levy up to €50/t as of the 01 September 2011.	
Waste Management Plan for the North East Region	No change	Seeks a 150,000 – 200,000 tpa capacity waste-to-energy facility	It is proposed that the facility provides this capacity as well as

County Meath Development Plan	No change	Supports inter regional cooperation	additional capacity to adjacent regions

4.2.2 Scale and Location of Waste to Energy

As noted above, the Waste Management Plan for the North East Region sets out a requirement for 150,000 – 200,000tpa thermal treatment capacity.

While this capacity has now been realised in the North East, it is apparent that other regions have not been successful in developing the capacity originally sought in their Waste Management Plans. For example, the Connaught, Limerick/Clare/Kerry and South East regions have thermal treatment in their waste management plans but have not yet developed any capacity. In the absence of such pre-treatment capacity, as highlighted above, landfills across the country are failing to meet their BMW diversion targets.

The *Meath County Development Plan 2007-2013* and *Policy Guidance WIR 04/05* both support inter-regional co-operation taking into account the proximity principle and the need for cost effective waste management infrastructure. Specifically, the WIR 04/05 states that in preparing waste management plans, the relevant authorities:

> *"should recognise that the application of the proximity principle does not entail interpreting administrative waste management planning boundaries in such a manner as to inhibit the development of waste management infrastructure which will support the attainment of national waste management policy objectives through the rational development and use of such infrastructure"*

Waste management plans are currently under review, as per the *European Communities (Waste Directive) Regulations 2011,* and a revised national waste policy is pending, following consultation which took place in late 2011 and is now complete. However, it is clear that in the current economic climate, this rational development and use of infrastructure is now more important than ever. In support of this, the recent policy consultation *Towards a new National Waste Policy* suggested that further consideration would be given to existing policy flexibilities in relation to inter-regional movements of waste, so that:

> *"regional boundaries do not operate in a rigid manner, preventing the most efficient use of infrastructure in pursuit of overall national targets/obligations"*.

It also refers to the improved co-ordination and potentially reviewing the structure of waste management regions, which would further support this rational use of waste management infrastructure with a view to meeting national targets and obligations.

Summary

It is submitted that the current climate and the direction of new policy is towards promoting more inter regional co-operation in attaining waste policy goals. The proposed 20,000 tpa additional capacity at

the Meath waste-to-energy facility would provide other regions with an opportunity to move towards Landfill Directive and Waste Framework Directive objectives.

Policy / Legislation	Update?	Description	Impact on Facility
Policy Guidance WIR 04/05	No	Supports inter regional cooperation	The proposed capacity increase would enable the facility to support other regions's pre-treatment needs and targets
Towards a New National Waste Policy	(Consultation)	Suggested greater flexibility in relation to inter-regional movement of waste	

4.2.3 Hazardous Waste Policy

National Hazardous Waste Policy

The Waste Framework Directive (2008/98/EC) provides the overarching framework on waste management requirements including both hazardous and non-hazardous waste and replaced the Hazardous Waste Directive (91/689/EEC). It requires that Member States draw up waste management plans, which was transposed into Irish legislation through Section 26 of the Waste Management Acts 1996 to 2011. It also requires that the waste hierarchy is followed as a priority order in both hazardous and non-hazardous waste management plans and policies.

The *National Hazardous Waste Management Plan 2008 – 2012* sets out a number of core objectives including a drive for increased self-sufficiency in the management of hazardous waste and an objective to reduce hazardous waste export. This would yield a number of benefits including:

- Meeting the proximity principle as set out in the Waste Framework Directive
- Reducing the potential for hazardous waste spillage in event of an accident during transport
- Reducing the greenhouse gas emissions associated with transport
- Achieving security of supply in outlets and reducing the risk associated with Member States imposing restrictions on imports of hazardous waste.

The Plan notes that:

> *"If Ireland were to become fully self-sufficient, hazardous waste landfill and incineration (or alternatives) would be required".*

It recognises that co-incineration in cement kilns can provide an important opportunity for treating blended solvents, chipped tyres, meat & bone meal and SRF. However, the plan also finds that material that does not have an optimal calorific value or that is unsuitable for blending and co-incineration requires an alternative solution such as incineration. It is recognised that waste-to-energy can provide the necessary flexibility in handling a wide range of hazardous waste streams including both liquid and solid materials. The plan leaves the development of such capacity to the private sector, which must *"judge whether investment in an Irish hazardous waste management incineration facility, or alternative*

treatment technologies, would make commercial sense in the context of the evolving European market".

The plan does not identify any location or region as being most suitable for hazardous waste treatment. As stated previously, Indaver is committed to the development of a Waste to Energy facility capable of treating hazardous waste in Ringaskiddy, Co Cork which is currently in the planning process.

Regional Hazardous Waste Policy

The EPA Hazardous Waste Management plan sets out the infrastructure required for hazardous waste treatment, but (as noted) does not specify the region or area in which it should be located.

The North East Waste Management Plan recognizes the role of the Private Sector in provision of waste services, and specifically that the Private Sector must play their part in the development of waste facilities for commercial and industrial waste such as WEEE, C & D and hazardous waste – the proposed amendments will go some way to delivering a facility to treat certain types of hazardous wastes. The North East Waste Management Plan also addresses hazardous waste management with a focus on the Local Authority responsibility to cater for small-scale producers. It refers to the (pre-2006) National Hazardous Waste Management plan which suggested 2 engineered landfill cells for hazardous waste were required nationally in the Dublin area and in the South East. It also states that consideration will be given to the provision of new facilities that cater for waste not provided for in the collection system, such as WEEE, C&D type waste and hazardous materials such as batteries. This supports the development of treatment capacity for certain hazardous waste streams as proposed here.

The North East Waste Management Plan states that the National Hazardous Waste Management Plan is under review, and the North East Regions will have regard to the recommendations. As outlined above, this Plan has subsequently been replaced but the North East Regional plan has not been updated to reflect any recommendations.

It is noted that the 2008-2012 National Hazardous Waste Management Plan also identifies a need for a hazardous waste landfill capacity, in order to achieve self-sufficiency in hazardous waste treatment in line with its key objectives. In June 2011 MEHL were granted planning permission for a hazardous and non-hazardous landfill facility in Hollywood, Co Dublin. The waste licence application has been submitted to the EPA. If granted, this facility will fulfill part of the need identified in the National Hazardous Waste Management Plan and, combined with Indaver's Meath facility, would provide the North-East with a unique set of infrastructure for the treatment of hazardous and non hazardous waste.

Summary

Policy / Legislation	Update?	Description	Impact on Facility
Waste Framework Directive (2008/98/EC)	Transposed in 2011	Specifies a waste hierarchy for both hazardous and non-hazardous waste,	Meath facility would facilitate the recovery of hazardous waste in Ireland
National Hazardous	Not relevant	Sets out core objectives including	Meath facilty would

Waste Management Plan 2008 – 2012	to previous application	increased self-sufficiency in hazardous waste management	improve self sufficiency by providing some hazardous waste treatment capacity in Ireland & reducing exports

Co-treatment of Hazardous and Non-Hazardous Waste

The Meath WTE is classified as a recovery facility (R1)meeting the minimum energy efficiency criteria of 0.65 according to the R1 formula, in Annex II of the Waste Framework Directive (2008/98/EC). This classification will not be affected by the treatment of hazardous waste as the plant will still be primarily dedicated to the treatment of MSW.

There is no specific guidance available in the Waste Framework Directive or other policy relating to the co-treatment of hazardous and non-hazardous waste in a waste to energy plant . The co-processing of hazardous and non-hazardous streams is widely practiced across Europe in municipal waste to energy facilities and cement kilns, and was also recently approved at a cement kiln in Ireland. [2]

The European Commissions' *Best Available Technique* guidance notes (BREF Notes) for Waste Incineration, based on Sections 5.1 and 5.2 of Annex I of the IPPC Directive, 96/61/EC, outline the technical considerations relating to waste incineration of hazardous and non-hazardous waste. This does not preclude the co-treatment of hazardous waste with non-hazardous waste, but does specify a number of handling techniques. Compliance with these technical requirements is addressed in more detail in Chapter 5.. It is noted that, as the guidance is specifically for dedicated hazardous waste treatment facilities, many of the conditions do not apply to the Meath waste-to-energy facility where the proportion of hazardous materials in the overall bulk of waste treated will be very limited (5% or less). It should be noted that the Industrial Emissions Directive 2010/75/EU will be applicable to the Meath WTE in January 2014. This directive has merged the IPPC Directive, the Waste Incineration Directive and other sectoral directives into a single directive and strengthens the application of BAT across the EU. The requirements of this directive are being taken into consideration where applicable but in the context of Meath WTE do not deviate substantively from the principles enshrined in the BAT Guidance Document, IPPC directive and WID. This is discussed further in Chapter 5

Summary

Policy / Legislation	Update?	Description	Impact on Facility
BREF Note on Incineration	Not relevant to previous application (in this context)	Sets out technical guidance for waste incineration of municipal and hazardous waste	Design of facility accommodates specifications in BREF

[2] Final Determination issued 12/03/12 P0487-06 (Lagan)

5 DESCRIPTION OF THE PROPOSED DEVELOPMENT

5.1 CHARACTERISTICS OF THE APPLICATION

Indaver Ireland Ltd. intend to apply for amendments to the existing permission PL17.219721 and SA/901467. The proposed amendments are detailed in Section 5.1.2 below.

5.1.1 Description of Site Layout

The 10ha site is located at Carranstown, Duleek, Co. Meath off the R152 regional road. The site is bounded to the north, west and east by agricultural land and to the south by the R152 road.

The site is located approximately 2.5 km north east of Duleek and approximately 3km south west of Drogheda. There are approximately 40 houses within 1km of the site boundary (Figure 6.1).

The Meath WTE Facility began operating on the site in October 2011, after the completion of a three year construction phase.

Existing developments within the vicinity of the site include a cement factory and quarry located to the north of the property. A commercial freight railway is located approximately 60 metres north of the site boundary. This line is used for the transport of freight for Tara Mines, Navan and the Platin cement factory.

A 110kV power line traverses the proposed site, however there will be no requirement for line diversion as a result of the proposed amendments.

A natural gas pipeline runs directly under the development site. There is also a low pressure gas mains running along the R152. There will be no requirement for diversion of the gas main as a result of the proposed amendments.

5.1.2 Description, Design, Size and Scale

Summary

- 20,000 tonnes or 10% increase in annual throughput
- Inclusion of additional EWC Codes (hazardous and non hazardous)
- Amendment of waste acceptance hours:

Current	Proposed	Period
08:00 – 18:30	06:00 – 20:00	Mon - Fri
08:00 – 14:00	06:00 – 14:00	Sat

- Unrestricted hours for the dispatch of residues from site
- Future additional capacity ammonia storage tank and fuel oil tank
- Convert hardcore area for contractor parking during construction to permanent status
- Conversion from temporary to permanent status of two structures:
    - Spare Parts Warehouse & associated electrical switchgear building with hard core surround.
    - Single storey modular office block & associated electrical switchgear building and to include:
        - Effluent treatment plant
        - Paved roadway (with hard cored area to each side) leading to office block
        - 22 additional paved car parking spaces added to existing car park

5.1.3 Description of Existing Development

A 70MW MSW incineration plant and associated infrastructure has been built on the site in line with Planning Permissions PL17.219721 & SA60050 (Final Grant October 15 2007) & SA901467 (Final Grant 14/12/2009).

The construction phase of the project is now complete and in August 2011 Indaver began accepting waste at the site for hot commissioning. Electricity generation & export to national grid began in January 2012. Aerial photographs of the operational facility at March 8th 2012 can be seen in Figures 5.1 and 5.3 below.

Figure 5.1 Aerial View of Site March 2012

to work within an operating envelope of between 165,000 and 230,000 tonnes per annum depending on the average calorific value of the incoming waste stream.

Additional raw materials may be required for use in the de-NO_x and flue gas cleaning systems and these increases are highlighted in Section 5.7 below. There will not be any additional staff required for waste acceptance and handling. Indaver is confident that the addition of the proposed new waste types will not materially alter the emission values in the stack and that the measured values will continue to be well below the limits set in the existing waste licence W0167-02, and will not be requesting any changes to emission values in this licence as a result of the proposed new waste types or annual throughput. The increase in throughput will merely realise the full potential of the technology which is designed based on thermal throughput as opposed to tonnage throughput.

5.4.2 Additional EWC Codes

Likewise, the inclusion of additional EWC Codes (including those marked in the European Waste Catalogue with an asterisk and defined as hazardous for disposal) to allow for separately collected fractions of waste which are present in the MSW waste stream nationally, and select waste streams from industrial customers, do not require any adjustment in waste handling processes (other than the direct feed of any infectious wastes if accepted) or the flue gas cleaning technology currently in place. Varying the types of waste input to the plant will affect the concentration of pollutants in the untreated flue gases, but due to the redundancy of acid and dioxin removal steps in the installation, this simply means that more lime, dry lime, expanded clay and activated carbon may be used in treating the flue gases. Having a two stage acid and dioxin removal system is part of the robust design envisaged by Indaver for Irelands first waste to energy plant. Ultimately the emission limits prescribed in Indavers Waste Licence must be adhered to and to date the facility has demonstrated that it can perform well below the limits specified – please refer to Appendix 5.1 This is discussed further in Section 5.6 below. The list of proposed additional waste types and their associated EWC Codes are shown in Figure 5.2 below,

EWC	Example of Material	Industry Source	Waste Management Region
160507*	Toilet bowl or other cleaners, detergents etc.	All industry	ALL Regions
160508*	Denture fixative waste	All industry	ALL Regions
160303*	Colourings used in cosmetic manufacture	All industry that generates off specification or redundant products	ALL Regions
160305*	Cosmetic eye shadow base, mascara, lipstick	All industry that generates off specification or redundant products	ALL Regions
150202*	Rags and cloths contaminated with paints	All industry that uses aborbents/filters/PPE etc	ALL Regions
150110*	Plastic jerricans previously containing cleaning	All industry that uses packaging	ALL Regions

	agents		
170204*	Wood from dismantled warehouse contaminated with creosote or other preservative	Construction & Demolition projects	ALL Regions
170903*	Construction & Demolition waste such as window frames from a pharmaceutical building - may contain trace pharmaceutical powders.	Construction & Demolition projects	ALL Regions
170505*	Dredging spoil from firewater retention ponds	Construction & Demolition projects	ALL Regions
170503*	Soil & stones from clean up operations resulting from building foundations where possible contamination has occurred (e.g. on pharma site - old building)	Construction & Demolition projects	ALL Regions
180103*	Medical/Infectious Wastes.(Excluding Sharps) from Clinics, nurses stations etc.	Healthcare industry, users of healthcare/diagnostic/research products	ALL Regions
130701*	Waste fuel oil and diesel	Manufacture/supply use of oils & fuels	ALL Regions
070101*	Water from a spill clean up containing trace oils and adhesive powders.	Manufacturers or users of organic chemicals	ALL Regions
080308	Waste Ink Solution (Water and Non hazardous Ink Solids) , paint and water mixture	Manufactures or users of paints & inks	ALL Regions
200137*	Treated wood from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
200127*	Paint cans, and paint waste from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
200128	Water based paint from Civic Amenity sites	Municipal/Industrial/Commercial Waste	ALL Regions
070501*	Rinsewaters containing trace pharmaceutical residues.	Pharmaceutical manufacturers or users	ALL Regions
070513*	Headache tablets	Pharmaceutical manufacturers or users	ALL Regions
070511*	Waste water treatment sludge from pharmaceutical plant - trace pharma powders may be present	Pharmaceutical manufacturers or users	ALL Regions

191303*	Sludges from soil remediation - e.g. illegal dumping clean up	Soil & Groundwater remediation Projects	ALL Regions
160107*	Discarded oil filters from garages and mechanics	Vehicle/Machinery Maintenance	ALL Regions
191206*	Wood (treated) from waste management facilities	Waste Management Facilities	ALL Regions
191211*	Shredded paint buckets and cans - contents previously pumped off and packaging shredded	Waste Management Facilities	ALL Regions
191003*	Material from shredding of white goods (after recycling) may contain some trace hazardous materials such as plastics with brominated flame retardants.	Waste Management Facilities where there is metal shredding	ALL Regions
190811*	Waste water treatment sludge from local authority treatment plants where possible contamination may have occurred	Waste water treatment plants	ALL Regions
030104*	Wood shavings and small pieces of wood, treated with preservative, from furniture/window manufacturers	Wood Processing/Furniture manufacturer	ALL Regions
190113* 190107* 190112	Flue Gas Treatment residues, bottom ash and boiler ash, temporarily returned to site before being re-sent for treatment	Indaver Ireland WTE, Carranstown	NE Region

Figure 5.2 List of proposed new EWC codes and waste types

The acceptance of select additional EWC codes is based on experience gained at our existing installations and handling these waste streams for our existing customers, Indaver Ireland Ltd is a registered Waste Broker (IRE AG040/12). Indaver have operated in Ireland moving hazardous waste for over 30 years, mainly for export under EC1013/2006.

In 2010, Indaver managed 65,952 tonnes of hazardous waste for its customers, the majority of which was exported for treatment. It was from this exported material that certain waste streams were identified as being suitable for diversion from export, to treatment at the Meath WTE facility. In addition

to these waste streams which were managed by Indaver Ireland directly, it is assumed that other waste brokers in Ireland will also have suitable material in their waste portfolio.

Grate incineration technology is not suited for all types of hazardous waste. Careful consideration was given when identifying streams that Indaver currently export, that would be suitable for the Meath Grate WTE.

5.4.3 Adjustment to waste acceptance hours

An extension of the hours during which waste may be accepted is proposed to spread the delivery of waste more evenly throughout the day. Currently waste can only be accepted between 08:00 and 18:30 Monday– Friday and between 08:00 and 14:00 on Saturdays. Waste collections from households and deliveries from waste transfer stations are typically done in the early morning hours, and there is great demand for earlier delivery slots. When the waste collectors have delivered to site, they would typically return to their collection routes or transfer stations for afternoon collections/deliveries to the site. The extension of waste acceptance hours in the afternoon would facilitate second deliveries, while at the same time mitigating the impact on peak hour commuter traffic. It is proposed that waste can be accepted on site between 06:00 and 20:00 Monday to Friday and 06:00 and 14:00 on Saturdays.

5.4.4 Unrestricted waste dispatch hours

It is also proposed that the restriction on the hours of waste dispatch from the site be removed completely. Currently, the dispatch of residues from the process (boiler ash, flue gas cleaning residues, bottom ash & waste waters) are only permitted during the hours of waste acceptance. Presently this is not a major issue for the majority of the truck movements (bottom ash), as they are bound by the hours of waste acceptance at a landfill site which is reasonably close by. However, if another landfill were to be used in the future (or as a backup to the current nearby facility,) that was further away from the site, then trucks may have to leave the site earlier than 08:00 in the morning.

The flue gas residues and boiler ash are subject to regulation EC1013/2006 (Movement of waste) and the pre-notification procedure contained therein means that each Notified shipment must move off-site to Dublin Port for export on the date notified in Box 6 of Notification Form 1B. If the waste containers being filled on-site encounter any delays, then the restrictions on dispatch times will affect these movements, resulting in cancellation of the shipment with the National TFS Office, plus containers having to be stored on site overnight.

This material is being exported via Dublin Port for treatment abroad and is not bound by waste acceptance hours at Irish licensed facilities. As mentioned in Section 13 (Traffic), the number of truck movements associated with this material is also small (approximately 2 loads per day) and hence should not adversely impact on the surrounding environment. As the facility is operational 24 hours per day

and 7 days per week, it is logical that the removal of such waste loads should not be bound by the hours of waste acceptance.

5.4.5 Conversion of status – structures and car park area

The proposal also includes the change of status of two existing structures on site from temporary to permanent. The first is the spare parts warehouse to the north-east of the site – this was installed to facilitate storage of spare parts and maintenance equipment for the contractors during the construction and commissioning phases of the project. The strict guarantees required by Indaver on the reliability and availability of the plant during the guarantee period (24 months) meant that the main equipment suppliers insisted on having higher multiples of spare parts available on site at all times during this period.

After the guarantee period, this warehouse is proposed as a Central Maintenance Depot to continue to house maintenance equipment and spare parts for the Meath WTE facility as well as other facilities in Indaver's Irish portfolio, comprising of a Transfer Station and Solvent Blending facility in Dublin Port as well as the proposed Cork WTE plant in Ringaskiddy, Co Cork. Associated with this structure is the Electrical Switchgear building and an area of hardcore to the north-east of the building (see Figure 5.2 and the drawings accompanying the application for details). It is estimated that a Centralised Maintenance Depot would result in 2-3 additional personnel on site.

The second structure for which conversion to permanent status is requested, is a single storey modular office block to the east of the site, which was used during the construction phase of the project to house visiting staff, meeting rooms and a visitor's centre. It is proposed to convert the status of this structure in order to continue to facilitate visiting staff from other Indaver installations, as well as contractors who may need office space during the guarantee period of 2 years and during scheduled annual shutdown periods. This is to limit the amount of people (staff & visitors) accessing the main process building at any one time. To facilitate access to the office block, the approach will be paved (please refer to the drawings accompanying the application) with areas of hardcore on either side. A Puraflo® sewage treatment system is proposed to replace the current holding tank for effluent treatment associated with the modular office block.

To accommodate the visiting personnel, it is proposed that an additional 22 car parking spaces be added to the existing car park.

During periods of routine maintenance shutdowns and any other on-site projects, the hard cored area that was designated as parking for contractors during the construction phase may be needed again. Until the experience is gained of the amount of car-parking spaces required during these shutdown periods, it is proposed also to convert this area to permanent status.