INDAVER IRELAND

Administration
Waste Management Licensing
Environmental Protection Agency
PO Box 3000
Johnstown Castle Estate
Co. Wexford

6th May 2003

Waste Licence Application 167- 1

Dear Sir/ Madam,

The attached information is being submitted following a request by the Agency on the 27th March in accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations.

Yours sincerely

Laura Burke
Project Manager

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Article 13 Compliance Requirements

1. [Environmental Protection Agency] Provide a non-technical summary of the Environmental Impact Statement (EIS) as this has not been included with the application. The non-technical summary should be updated to reflect the further information you supply below in compliance with this notice insofar as that information impinges on the relevant non-technical summary

Non – technical summary is attached in Appendix 1

2. [Environmental Protection Agency] The maximum air volume to be discharged from emission point reference A1.1 appears to be listed differently in different sections of the application (i.e. Table 1.1 lists 232,237m^3 /h; Section D2.1, p.50 lists 142,000 Nm^3 /h; Section D2.1, p.21 lists 2 x 63,000 Nm^3 /h; Table 1.5 of H2.1, p.16 lists 126,000 Nm^3 /h typical and 150,980 Nm^3/h maximum). Please reconcile these figures and confirm that the dispersion modelling used the correct value.

The correct air volume discharge can be confirmed as 126,000 Nm^3 /h at nominal operation of the incinerator and 150,980 Nm^3/h at maximum operation. Indaver Ireland confirms that these figures were used for the air dispersion modelling, see Appendix 2.

Please note that the figure of 232,237m^3 /h is the actual flow rate at the stack at 100°C. When this flow rate is normalised to a dry gas at 11% Oxygen it amounts to 150,980 Nm^3/h at maximum operation.

The flow rate of 2 x 63,000 Nm^3 /h indicates the two lines of the incinerator operating at nominal capacity. As stated in the EIS, both lines are combined prior to the wet flue gas cleaning process to become one stream at 126,000 Nm^3 /h.

The flow rate given on p.50 of section D2.1 is an error and should read 126,000 Nm^3 /h.

3. [Environmental Protection Agency] The cumulative impact assessment in section 6 of attachment 5 of the EIS was carried out for NO_2 and SO_2. This should also be carried out for particulate and Dioxins.

This assessment has been carried out and is attached as Appendix 2.

4. [Environmental Protection Agency] An assessment of the annual average impact of SO_2 from emission point reference A1.1 should be included.

An assessment of the annual average impact of SO_2 is attached as Appendix 2.

5. [Environmental Protection Agency] Please indicate what reference 28 refers to on p/8 of 35 of Appendix 1.2 of the Air Dispersion Modelling.

Reference 28 refers to UK DETR (1998) Review & Assessment: Pollutant-Specific Guidance, The Stationary Office.

6. [Environmental Protection Agency] The impact assessment in Section 11 of the EIS refers to maximum annual ground level concentrations inconsistent with the air dispersion modelling. This assessment should be redone with the correct values used. Specific reference should be made in this assessment to potential impacts on pNHAs, SACs (flora and fauna) etc already identified.

An updated ecology assessment from section 11 consistent with the air dispersion model is attached as Appendix 3. In addition confirmation from Biosphere Environmental that the that the ecology assessment has been completed and is consistent with the air dispersion model completed by AWN is attached

7. [Environmental Protection Agency] Provide details on heat emissions, including source, location, nature, composition, quantity, level and rate; the impact of such emissions on the environment; and details on the monitoring of any such emissions.

For a 31.2 MW waste thermal input per incineration line the following heat balance is expected :

Heat loss by radiation from the hot equipment (furnace, boiler, steam cycle) is approximately 0.6 MW (2 %) and this heat is not recovered but heats the building. This heat is evacuated through the natural draft building ventilation to the atmosphere.

24.2 MW is converted to steam. The remaining heat of 6.4 MW is released from the boiler to the flue gas cleaning.

The 24.2 MW steam is converted to 7.3 MW electricity, 15.7 MW hot air from the aerocondenser and 1.2 MW steam for flue gas reheating prior to release from the stack. Steam at 40 bar / 400 °C enters the turbine and steam at 0.15 bar / 50 °C and only 10 % condensed leaves the turbine. The remaining 90 % steam is condensed in the aerocondenser using indirect cooling. So the steam is condensed in a closed loop and the ambient air is heated.

The 6.4 MW at the outlet of the boiler is reduced to 4.4 MW in the evaporating spray tower. The difference of 2 MW represents the evaporation of water in the spray tower. Sensitive heat of 2 MW is converted in latent heat.

The 4.4 MW at the entrance of the wet flue gas cleaning becomes 1.3 MW at the outlet because once again water is evaporated. Sensitive heat of 3.1 MW is converted in latent heat.

Finally 1.2 MW is added to the 1.3 MW coming from the wet flue gas cleaning by mean of flue gas reheating with steam. (tapped from the turbine at some 8 bar).

A heat balance is included in Appendix 4

8. Unsolicited Information

On 4th March 2003, An Bord Pleanala granted planning permission for the proposed Waste Management Facility at Carranstown. The board attached thirty-one conditions to this permission.

Condition 3 of the Decision states the following:

"The proposed community recycling park shall be omitted and the area shall be landscaped in accordance with the requirements of the planning authority".

Reason (An Bord Pleanla): It is considered that this aspect of the proposed development, which is to serve a local need only and would attract unnecessary car-borne traffic, would more appropriately be located in the local population centre of Duleek"

As a result of this condition Indaver Ireland will not be proceeding with the civic waste facility (community recycling park) as originally included in the waste licence application to the Agency.

The only significant effect this would potentially have on the Development is due to the proposal to use all rainwater falling on hardstanding areas of the site in the incineration process for gas cleaning and cooling.

The removal of the civic waste facility results in a reduction of 1,730m2 of hardstanding area from 40,000m2 to 38,270m2 and therefore a reduction in available intercepted rainwater. The daily water requirement of 336m3/ day would constitute some 8.8mm of rain over the hardstanding area (previously 8.4 mm). This small differential for process water requirements can be obtained from the groundwater supply. Pumping tests, as detailed in section 8.2.5 of the EIS have confirmed an average yield of 470m3/day groundwater availability from a single trial well, giving an ample supply of groundwater for process requirements.

Therefore the removal of the civic waste facility has no environmental significance.

Appendix 1

Non-technical Summary of Environmental Impact Statement

Document Lead Sheet

PM Project No: 002666

Document No: 002666-22-RP-003

INDAVER IRELAND

WASTE MANAGEMENT FACILITY, CARRANSTOWN

NON TECHNICAL SUMMARY
OF
ENVIRONMENTAL IMPACT STATEMENT

ISSUE	DATE	ORIG	AUTH CHK	REVIEW	APPRVD PM	APPRVD CLIENT	DESCRIPTION
A	12/1/10	YP		MYPE	YP		Planning

CONTENTS

1. INTRODUCTION

1.1 General

Waste Management is a major environmental issue facing Ireland. Over 90% of domestic and commercial waste are currently disposed of to landfill, which is universally considered to be the least acceptable waste disposal option. Indeed the EU Landfill Directive (1999/31/EC) places obligations on member states to reduce the quantity of waste going to landfill.

If Ireland is to improve waste management practices and ensure compliance with its obligations as an EU member it is essential that a more acceptable alternative to disposal by landfill be implemented.

As a response to this need, Indaver Ireland intend to apply their experience of waste management and construct a waste management facility consisting of the following elements:

- A Community Recycling Park with an estimated throughput of 2,000 tonnes per annum
- A Recycling Plant for Non Hazardous Waste with an anticipated throughput of 20,000 tonnes per annum.
- A Waste to Energy Plant for Non Hazardous Waste with a capacity of 150,000 tonnes per annum.

Indaver Ireland is a branch of a Belgian integrated waste management company, Indaver NV. Indaver Ireland was formed to invest in Waste Management infrastructure in Ireland.

The proposed location is on a 25 acre greenfield site in Carranstown Co Meath.. The area of the site used for development will be about 10 acres, and a large area will be used for landscaping to minimise the visual impact of the facility. The site location is shown in Figure 1.1.

Quality and environmental management will be priorities of Indaver Ireland and the plant will be accredited to international quality and environmental standards

Indaver is committed to an open and permanent dialogue with its neighbours and the general community and has commenced and will continue an extensive Communications Programme

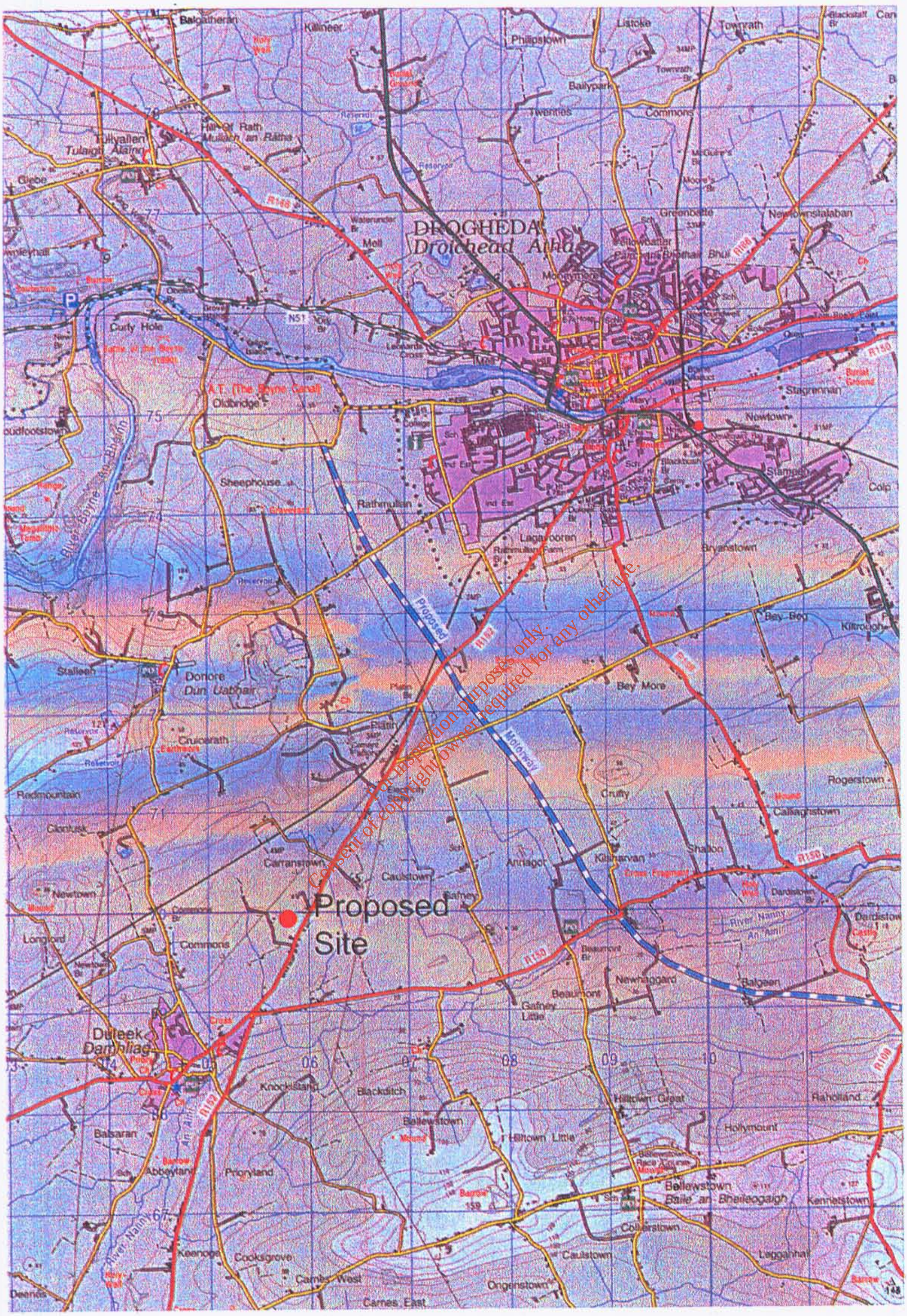


Figure 1.1 Site Location

1.2 Indaver Company Profile

Indaver is a company that specialises in Waste Treatment. Indaver recycle and treat both domestic and industrial waste and also provide advice on how to prevent waste as an integral part of their service.

'Sustainable Waste Management' is Indaver's policy which demonstrates their commitment to establishing long-term relationships with customers and the community.

Indaver employ more that 800 people and handled 800,000 tonnes of waste in 1999. Of this 400,000 tonnes was recycled, 300,000 tonnes went for waste to energy and 100,000 tonnes went for treatment or disposal.

Ever since its establishment, Indaver has given a high priority to Environmental Management, Quality and Safety. Indaver has over 100 licences for the treatment of a broad range of waste materials. Complying with the most stringent legal standards, all installations have been designed to minimise the residue burden on the environment. Indaver has always operated within its licence limits for all its facilities.

1.2.1 Indaver Activities

Indaver are involved in a comprehensive range of waste management activities at their various plants in Flanders. A selection of such activities is as follows (also see Figure 1.2).

- Sorting and purification of packaging waste
- Sorting of paper and cardboard for recycling
- Destruction and recycling of confidential documents
- Recovery of wood waste
- Composting
- Sorting and recovery of tyres
- Dismantling of transformers
- Glass Recycling
- Ash Treatment
- Non Hazardous Waste Incineration
- Solvent recycling
- Physio-chemical treatment of Liquid Waste
- Treatment of chlorinated waste
- Sludge Treatment
- Landfill
- Hazardous Waste Incineration
- Total Management Medical Waste

1.2.2 Indaver Ireland

Indaver Ireland is a wholly owned subsidiary of Indaver NV and currently has eight employees.

In addition to the proposed Waste Management Facility at Carranstown, Indaver Ireland has also launched a Newspaper and Magazine recycling business under a 'Bring it Back' theme. This business is currently serving the Dublin Market, targeting newsagents, garage forecourts, local authorities and large employers.

Composting

Paper Recovery

Solvent Recovery

Fluorescent Tube Treatment

Incineration

Glass Recovery

Figure 1.2 – Some of Indaver's Activities

1.2.3 Minchem

Indaver owns 60% of MinChem Environmental Services Limited. MinChem is a hazardous waste management company with offices in Dun Laoghaire, Dublin Port and Cork. MinChem has been operating in Ireland since 1977 and currently employs 30 people.

Minchem exports hazardous waste from Ireland to Britain and the continent for recovery, disposal or treatment. MinChem operates an EPA Licensed Transfer Station in Dublin Port for the export of these materials.

1.3 Environmental Impact Assessment

The Environmental Impact Assessment (EIA) process aims to identify and thereby minimise the environmental impacts of certain new or expanding developments. It involves a detailed review of the proposed development and the existing environment. It requires an assessment of the potential emissions to the environment from the development as well as predicted environmental impacts and proposed mitigation measures.

This review process must be completed and documented in an Environmental Impact Statement (EIS) prior to regulatory approval for construction as well as environmental licensing for operation. The proposed development falls into the category of projects for which an EIS is required as stipulated in the European Communities (Environmental Impact Assessment) Regulations, 1989 to 1999, being an 'Installation for the disposal of waste with an annual intake greater than 25,000 tonnes'.

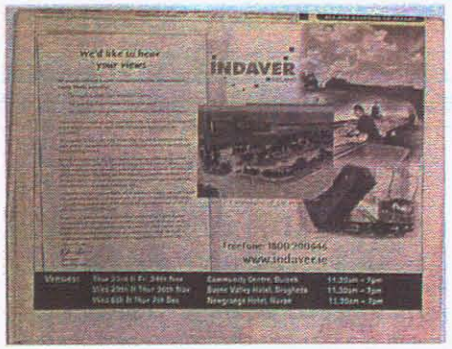
1.4 Consultation

During the preparation of the EIS an extensive consultation and information programme involving local communities, relevant statutory bodies and other interested parties was carried out.

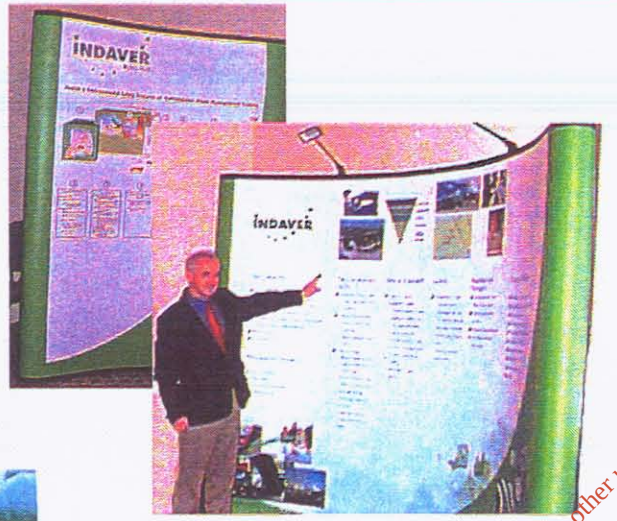
1.4.1 Public Consultation

An extensive consultation and information programme involving the public and public representatives was carried out. This consultation programme included

- Distributing information leaflets and information packages widely to households in the vicinity of the proposed site and in Drogheda, and to interested parties throughout Ireland.
- Holding information days for Meath County Council Councillors and members of the public.
- Holding public meetings for neighbours of the proposed facility.
- Bringing local residents and public representatives to see Indaver's plant in Flanders, Belgium.
- Launching a website with information on the proposed development.

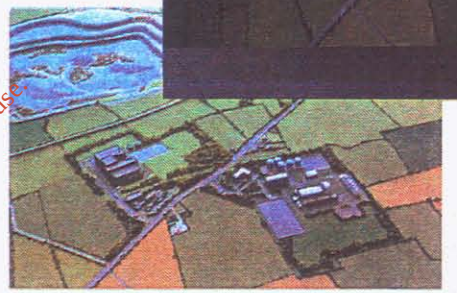


Information Days



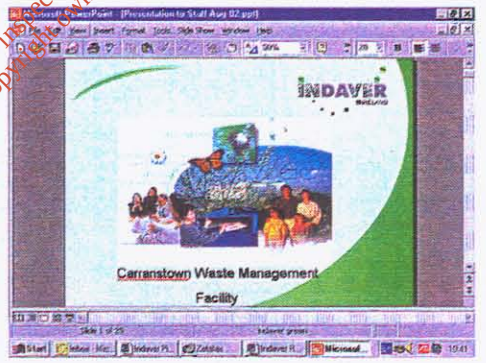
Display Panels

Visits to Indaver Belgium



Plant Model

Literature



Powerpoint Presentations

Website

Figure 1.3 – Public Consultation Activities

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Introduction

As mentioned above, the plant will consist of three main elements as follows:

2.1.1 Community Recycling Park

The Community Recycling Park will be located at the front of the facility and will offer as wide a range of recycling opportunities as possible. There will be a broad range of wastes accepted in order to optimise the recovery and recycling options available. The recycling park will operate on a similar basis to the recycling park currently operated by Meath County Council in Navan. A photograph of the Navan recycling park is contained in Figure 2.1.

Likely categories of recyclable waste accepted are as follows:

- Cardboard
- Newspaper
- Paper
- Glass
- Plastic
- Aluminium drink cans
- Textiles (clothes and blankets, for example)
- Footwear
- Batteries
- Waste oils
- Wood
- Garden waste (green)

Individual waste streams will be deposited into dedicated containers by members of the public.

The Recycling Park will be staffed continuously during opening hours to monitor deliveries of waste and ensure that no inappropriate waste is delivered. As no organic kitchen waste will be accepted at the park there will not be a problem with odour or vermin. Otherwise, the area will be kept clean and odour free through good housekeeping practices: regular washing and sweeping of the area, provision of hand washing facilities for members of the public and monitoring of waste deliveries.

Figure 2.1 – Photograph of Navan Recycling Park

2.1.2 Recycling Plant for Industrial Material

Deliveries of unsorted dry recyclable industrial and commercial waste will be accepted in the recycling hall, where items with the potential to be recovered or recycled will be separated. The waste recycling area will be maintained under negative air pressure to prevent odours being released.

For effective recycling to be possible it is important that there are no organics in the waste stream, as organics contaminate recyclable material and much of the sorting must necessarily be done by hand. A photograph of a similar plant operated by Indaver is contained in Figure 2.2.

The typical composition of recyclable waste is as follows:

- Paper
- Cardboard
- Plastics
- Wood
- Metals

The dry recyclable waste is discharged from the trucks in the recycling hall and large items, such as bulky pieces of wood or metal, are removed and put directly into containers.

The waste is then spread out onto conveyors, from which metal items are automatically removed by magnetic separators. The metal is then put directly into containers and sent elsewhere for recycling. Paper, plastic, cardboard and wood are then manually picked out by sorters. These items are then either put in containers or baled and sent onwards for recycling. The remaining, non recyclable waste will be sent to the waste bunker for incineration.

The plant will be designed to sort 20,000 tonnes of waste per annum, based on single shift operation.

The sorting plant will be operated by up to 16 personnel consisting of about 13 sorters, a foreman, a forklift driver and a front loader truck driver.

Figure 2.2 – Picture of Similar Recycling Plant Operated by Indaver

2.1.3 Waste to Energy Plant

The proposed plant is based on conventional grate incineration technology combined with state of the art flue gas cleaning systems. This technology is proven and reliable and has been widely implemented in many countries world-wide.

The waste is tipped into a bunker prior to being fed into the furnace. In the furnace the waste is incinerated, producing heat, ash and combustion gases. The heat is recovered in the boiler, producing steam, which is in turn used to produce electricity. The plant will produce approximately 11 MW of electricity, enough to power 16,000 homes.

The combustion gases are cleaned in the flue gas treatment plant and are discharged via the 40m stack. The flue gas cleaning system will account for about 50% of the capital cost of the plant and will ensure that the strict new limits contained in the recently adopted EU Directive on the incineration of waste will be comfortably met. Indeed, as a two stage dioxin removal process will be used dioxin emissions will average only 10% of the dioxin limit value.

The majority of the ash is collected in the ash bunker and will be sent for re use or disposal into landfill. As the waste to energy plant will reduce the waste to an ash approximately one tenth of its original volume the operation of the plant will significantly decrease the amount of material to be disposed of by landfill.

2.2 Waste to Energy Plant Design

The waste to energy plant will consist of a number of main processes and items of plant as follows:

(a) Reception

The waste trucks will drive into the enclosed waste reception hall where the waste will be tipped into the waste bunker (see Figure 2.3). As the area is enclosed and is maintained under negative pressure (ie air is drawn into the combustion furnace from the waste reception hall) there will be no odours or littering in the area.

(b) Combustion

The waste from the bunker will be fed into the furnace at a controlled rate. The furnace and boiler are designed to ensure a minimum temperature of 850 °C in the first stage of the boiler, thus minimising the formation of dioxins. The boiler has been designed to ensure rapid cooling of the flue gases, also reducing the formation of dioxins.

(c) Energy Recovery

The heat produced by the combustion will be recovered in the boiler and will be used to generate steam and then electricity. The generation of this electricity is in line with government and EU policy to promote the development of renewable energy sources.

Figure 2.3 Waste Acceptance Hall of Similar Plant in Belgium

(d) Flue Gas Cleaning

The flue gases will be cleaned through a five stage process involving removal of oxides of nitrogen (NO_x), dioxin and heavy metal removal, evaporation and dust removal, acid gas removal and a second stage of dioxin and heavy metal removal. The final stage of flue gas cleaning will ensure that all emissions are well below the new EU limit values.

(e) Dioxin and Furan Removal

Dioxins and furans are harmful substances produced by natural, domestic and industrial sources. Uncontrolled sources of dioxins include wood burning (including forest fires), domestic fires, straw burning, motor vehicles, metal industries, oil and solid fuel central heating and cigarette smoking.

Incineration of waste also produces dioxins but in a controlled environment. The proposed incinerator incorporates a two stage dioxin removal system using activated carbon thus ensuring that the plant operates well below the strict emission levels required by the European Union. The plant will be equipped with a continuous dioxin sampler to provide a record of all dioxin levels.

(f) Ash Handling

Ash will be collected from three separate parts of the process:

- Bottom ash – collected from the grate of the furnace. Bottom ash will account for the majority of the solid residues produced by the plant (30,000 tonnes/annum or 20% of waste input by weight)
- Boiler ash – collected from the boiler. About 1-2% (by weight) of the waste input (1,500 to 3,000 tonnes) of boiler ash will be produced per annum.
- Gypsum – About 1,000 tonnes per annum of gypsum will be recovered from the flue gas cleaning plant per annum.
- Flue gas cleaning residues. About 4,000 tonnes of flue gas cleaning residues will be collected from the flue gas cleaning plant each year.

A large proportion of the bottom ash is suitable for use as construction material and if a use can be found in Ireland it will be used for this purpose. Otherwise it will be disposed of to non hazardous landfill.

The boiler ash will also be solidified with cement and disposed of to landfill.

The gypsum can be used in the construction industry, if a market exists, and is otherwise suitable for disposal to non hazardous landfill.

The flue gas cleaning residues will contain a high percentage of soluble salts and some heavy metals and will therefore be classified as hazardous waste. It will be solidified with cement and will be disposed of to a hazardous waste landfill, either in Ireland or abroad.

2.3 Operation

2.3.1 Community Recycling Park

The Community Recycling Park will be open to the public six days a week, and will accept a broad range of different categories of recyclable waste. Based on the experience of a similar park in Navan it is expected that 3,500 cars will use the park each month, delivering about 2,000 tonnes of waste per annum.

2.3.2 Recycling Plant for Non Hazardous Waste

The recycling plant will operate each time a delivery of recyclable waste is received. Although it may operate at any time of the day it will mainly be operated during the hours of 8am to 6:30pm. It is expected that some 20,000 tonnes of waste will be processed by the recycling plant each year.

2.3.3 Waste to Energy Plant

The waste to energy plant is designed to treat 150,000 tonnes of waste per annum, but can treat up to 180,000 tonnes and as little as 45,000 tonnes per annum. The plant and waste bunker have been designed to ensure that the plant can operate and accept waste on a continuous basis. The plant will produce about 11MW of electricity, enough to power about 16,000 homes.

As described above the main residues from the plant are bottom ash, boiler ash and flue gas cleaning residues.

The plant will use about 15 m^3 of water each hour, with the main demand being for the flue gas cleaning process. This water will be supplied by collecting and storing rainwater and from a groundwater abstraction well. As any effluents will be re used in the flue gas cooling stage of the process, the plant will not produce any process effluent and the only liquid discharge from the site will be clean rain water and domestic sewerage.

2.4 Construction

The plant will be constructed over a two year period, beginning in 2002 and running until 2004. During this time there will be up to 300 contractors employed at the site. Activity on the site will be typical to that for any industrial facility and best site management practices will be implemented to reduce any impacts arising from construction activity.

During certain stages of the construction programme, some night and weekend working will be required but this will be kept to a minimum and will be carried out in consultation with local residents if any inconvenience to residents is envisaged.

2.5 Decommissioning

The waste processing facility has a projected life span of 25-30 years. Should circumstances arise whereby it becomes necessary to close the plant, Indaver Ireland will ensure that any potential negative environmental impact is minimised. This will include removal of chemicals and oils, equipment and buildings, and returning the site to its present state. A detailed decommissioning plan will be submitted to the Environmental Protection Agency as part of the application for a licence to operate.

2.6 Related Developments and Indirect Impacts

2.6.1 Ash Disposal

The waste to energy plant will reduce the waste to 10% of its original volume or about 25% of its original weight. By doing so it will significantly reduce the amount of material to be disposed of by landfill and will reduce the required capacity for landfill sites in the region.

Indaver Ireland will ensure that all solid wastes are disposed of to appropriately licensed landfill sites which will ensure that there will be no negative impacts associated with the disposal.

2.6.2 Connection to the Electricity Distribution System

The waste to energy plant will export electricity to the local electrical distribution system via 20 kV overhead lines either to Rathmullan Substation about 2.5km north of the site or Duleek substation about 2 km south of the site. These lines are routinely installed throughout the country and do not have the visual impact and Electro Magnetic Fields associated with high voltage lines. Planning permission is not required for 20 kV lines.

The existing 110 kV lines traversing the site will be diverted around rear of the site as part of the development. This will be the subject of a separate application by the ESB.

2.6.3 Gas Supply

The plant will use small quantities of natural gas for start up and potentially for auxiliary firing. However, the demand is not large and gas can be supplied from the nearby low-pressure gas pipeline running along the road.

2.7 Need for the Development

A total of 15 million tonnes of waste were produced in Ireland in 1998, some 2 million tonnes of which consisted of municipal waste (National Waste Database, 1998). The municipal waste comprised 1,220,856 tonnes of household waste, 754,797 tonnes of commercial waste and 80,999 tonnes of street cleaning waste. Over 90% of this waste is sent to landfill (96.8% of household waste and 81.3% of commercial waste). It is generally accepted that landfilling of waste is the least desirable waste management strategy. The EU Landfill Directive (1999/31/EC) limits the amount of biodegradable waste going to landfill.

Current waste management practice is far removed from the targets set by the Landfill Directive and significant changes in practices will need to be implemented in the near future.

Government policy on Waste Management is set out in the 'National Sustainable Development Strategy' (1997) and in 'Waste Management – Changing Our Ways' (1998).

The main thrust of the policy is to reduce national dependence on landfill.

The National Waste Management Policy underlines the regional approach to waste management and various regions in Ireland are required to prepare Waste Management Plans. The draft Waste Management Plan for the North East was published in November 1999, and has been approved by the Councillors in Counties Meath, Monagahan and Cavan. This plan recommends an Integrated

Waste Management Strategy consisting of minimisation, reuse, recycling, composting/digestion, thermal treatment and landfill.

2.7.1 Waste Management Strategies

Irish Government and EU policy ranks the alternative waste management options in order of desireability as follows:

- Prevention of waste (closing of cycles)
- Maximal recycling and reuse of material (including composting and digestion)
- Safe disposal of any waste which cannot be recycled or reused in the following ranking order:
  - combustion as fuel
  - incineration
  - landfill

Claims that all waste can be recovered and recycled have not been borne out by the experience of countries with a much more developed waste management strategy (and higher levels of public awareness) than Ireland such as Germany, Flanders and Australia. This means that, even in a highly optimised waste management strategy, a proportion of the waste remains for final disposal.

For example, Flanders (the home of Indaver) achieves one of the highest recycling rates of all western countries with a recycling rate of 58.9% in 1998. This grew from a rate of 18.3% in 1991 based on taxes, a successful system of door to door collection of recyclables and Community Recycling Parks. However, despite this very successful increase in recycling rates, the Flemish authorities recognise that there is a need for both incineration and landfill in their overall waste management strategy.

Practical experience indicates that a range of waste management options is required for sustainable waste management. Figure 2.4 shows the waste management strategies for biodegradable municipal waste (BMW) in a number of European countries.

Waste to Energy plants (or thermal treatment plants) are higher up on the waste hierarchy than landfilling and produce inert waste with only 10% of the volume of the original waste. Diversion from landfill is part of the Government's policy on waste, a policy which has been echoed in all the regional Waste Management Plans – most notably that for the North East Region.

Waste to Energy plants also provide a renewable source of energy and the construction of such a plant is in line with EU and national policy to promote renewable energy sources.

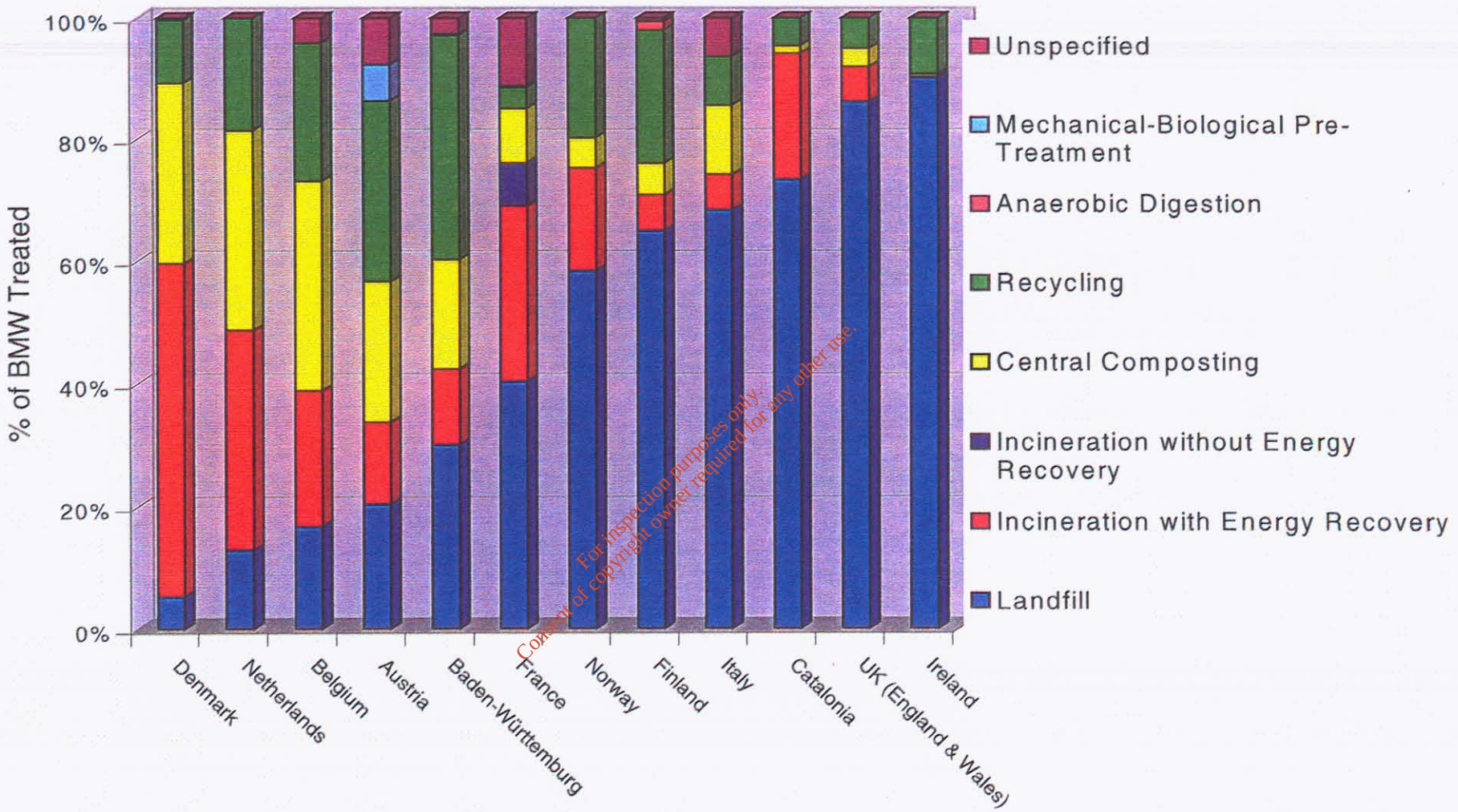


Figure 2.4 – Waste Management strategies for Biodegradable Municipal Waste (BMW) in European Countries

A frequent charge levied against the incineration of municipal waste is that they require large quantities of waste, in particular waste of high heating value, and that this leads to disincentive for the prevention and recycling of waste. As the proposed plant will incinerate only 30% of the waste generated in the north east region, over 70% of waste is available for other waste management options including recycling.

The proposed facility will provide valuable and much need waste management infrastructure in the north east region and will promote increased rates of recycling through the provision of the Community Recycling Park and the sorting plant for recyclable waste.

Indaver have a successful history of promoting waste prevention initiatives and Indaver Ireland provide a public information service on the means of preventing waste. The first publication produced was a home composting guide, which was distributed at all information days and public meetings and can be ordered or downloaded from their website (www.Indaver.ie).

2.8 Site Selection

2.8.1 Selection Criteria

An overall screening exercise was carried out with a view to finding suitable locations within the north east region. This preliminary screening involved the application of the above criteria, namely:

- Indaver's technical selection criteria.
- Steps 1&2 of the WHO selection procedure (where the criteria are applicable to non-hazardous waste to energy facilities)
- Shortlisting criteria from the Feasibility Study for the North East

The most important criteria for selection of the general area in which to locate a Waste Management Facility are

a. the Centre of Gravity of waste production, that is to select the area where the haul distance to bring waste to the facility is minimised.

b. Existing industrial character and suitability for industrial development

c. Availability of Sites

(a) Centre of Gravity

The total estimated haul distance was calculated for each of the major towns in the north east. It was determined that the haul distance is minimised in the areas surrounding Ardee, Drogheda and Duleek.

The proximity of the M1 (Drogheda bypass) to the Drogheda and Duleek areas would allow access via motorway to Dundalk which is the largest population centre in the north east region. The Drogheda area also has the second largest population in the north east.

Ardee is also well positioned to provide motorway links to both Dundalk and Drogheda.

(b) Industrial Character

A major consideration in selecting the most appropriate location was to select an area with an existing industrial character. As no large scale industry is located in Ardee, it was not further considered.

The proposed site is located close to the Platin Cement Factory, some 4 km south of Drogheda and 3 km north of Duleek. The existence of the Platin Cement Factory Cement Factory gives and industrial character to the landscape.

(c) Availability of Sites

On the basis of the above criteria it was concluded that the Platin area was ideally suited for the development of a waste management Facility. A number of particular sites were chosen for detailed investigation and the land owners were approached.

A site in Carranstown was found to be suitable based on the following, as well as satisfying the above selection criteria:

- Lack of designation as a National Heritage Area or a Special Area of Conservation.
- Topography of site, to allow the large building structures to be built on lower ground, thus reducing the visual impact.
- Relatively low population density and distance to large residential development.
- Access to the R152 and sufficient road frontage to allow a suitable junction to be built.
- Proximity to main transport routes – M1 and N2.
- Proximity to electrical distribution system.

2.8.2 WHO Guidelines and Feasibility Study for the North East

The Carranstown site was also evaluated with respect to the selection criteria prescribed in the WHO Guidelines and the criteria from the Feasibility Study for the North East. This confirmed the suitability of the site for the proposed development.

2.8.3 Conclusions

The proposed site was chosen after a comprehensive site selection exercise based on objective criteria. It comfortably meets all the evaluation criteria for site selection for a Waste Management facility.