4 Planning and Policy Context

4.1 Introduction

This section outlines the planning and policy context of the first and second phases of the Ringaskiddy waste management facility.

The proposed development has been examined in the context of the policies and objectives of the documents listed below, which address waste management policy guidance at European Union, national and local level. Most of the documents relate to waste management in general rather than specifically to the management of hazardous or non-hazardous waste.

EU Directives and Policy Guidance

- The Sixth Environmental Action Programme 'Environment 2010: Our Future, Our Choice'
- EU Directive 1999/31/EC – Landfill of Waste
- EU Directive 2000/76/EC – Incineration of Waste

National Policy Guidance

- National Development Plan 2000 – 2006
- Waste Management: Changing our Ways (1998)
- National Hazardous Waste Management Plan (2001)
- Sustainable Development – A Strategy for Ireland (1997)
- National Climate Change Strategy (2000)
- Green Paper on Sustainable Energy (1999)

Local Policy Guidance

- Cork County Development Plan - South Cork (1996)
- Waste Management Strategy for the Cork Region (1995)
- Waste Management Plan for Cork County (1999)
- Cork City Waste Management Plan (2000)
- Sludge Management Plan for County Cork 2000

4.2 European Union Directives and Policy Guidance

4.2.1 The EU Sixth Environmental Action Programme – 'Environment 2010: Our Future, Our Choice'

The EU sixth action programme is the successor to the EU fifth action programme (1992 – 1999), 'Towards Sustainability'.

The sixth programme sets out the major priorities and objectives for environment policy in the European Union in the period 2001 to 2010. The document states that a strategy is needed to ensure more sustainable use of resources. It also predicts that waste volumes will continue to rise unless remedial action is taken. Waste prevention is seen as a key element and further measures are also needed to encourage the recycling and recovery of wastes.

As society gets wealthier and ever more productive, the demand for products increases. The programme says that it is clear that the continuance of current consumption/production patterns will translate into increasing quantities of waste, of which a significant proportion will continue to be hazardous.

The document acknowledges that new waste treatment facilities meet extremely high operating standards that reduce the emissions and risks significantly. However, with much waste still going to older and less well managed facilities, the impact of waste management and waste transport are still problematic in many areas of the European Union.

The European Union's approach to waste management policy is based on the waste management hierarchy (see Figure 2.1). The document states that while this approach has been successful in improving standards in waste management, it has not halted the increase in waste volumes. The programme states that the focus now needs to be on waste prevention. It acknowledges, however, that this is one of the most challenging aspects of the waste issue and it will require the de-coupling of waste generation from economic growth.

Among the objectives stated in the programme in relation to the generation and management of wastes are:

- wastes should be non-hazardous or present as little risk as possible
- preference should be given to recovery, including energy recovery, and especially recycling
- the quantity of waste for final disposal should be minimised and should be safely destroyed or disposed of
- the waste should be treated as close as possible to the place of generation.

Conformance of the Project to Policy Objectives

The Ringaskiddy facility will promote the objectives of the EU Sixth Environmental Action Programme. The facility will operate to the highest standards and will deal with wastes which are not suitable for recycling or recovery. Energy will be recovered and the waste to energy plant will achieve approximately a 90% reduction in the volume of waste going for final disposal. The facility will treat waste much closer to the place of generation than currently is the case.

4.2.2 EU Directive 1999/31/EC – Landfill of Waste

The EU Directive is concerned with reducing the impact on the environment and on human health from the landfilling of wastes. The directive addresses the landfilling of both hazardous and non-hazardous wastes. It states that the prevention, recovery and recycling of waste, and the recovery of materials and energy, are to be encouraged so that natural resources and land are not wasted needlessly. Member states should have regard to the polluter pays principle and should also apply the principles of proximity and self-sufficiency to the management of wastes.

The directive sets out criteria for the classification of landfills and the types of waste to be accepted at the different classes of landfill. The directive addresses the licensing, control and monitoring, closure and after care of landfills. In Article 6, the directive states that only waste, which has been subjected to treatment, where possible, to reduce the quantity or the hazards to human health or the environment, is to be landfilled.

Of relevance to phase 2 of the waste to energy plant, Article 5 of the directive sets the following targets for the reduction in the landfilling of municipal biodegradable wastes (in relation to the 1995 data):

- 25% reduction by 2006
- 50% reduction by 2009
- 65% reduction by 2016.

The directive states that the national strategies employed to achieve the above targets should use the following means in particular: recycling, composting, bio-gas production and materials and energy recovery.

Conformance of the Project to Policy Objectives

The Ringaskiddy facility will promote the objectives of the EU directive on the landfill of waste. The facility will advance Ireland's self-sufficiency in dealing with hazardous waste and will treat wastes in proximity to their generation. The 'polluter pays principle' will apply. In both phases of the waste to energy plant, the volume of waste will be reduced by more than 90%. The residues from the plant will be ash, a substantial portion of which will be suitable for reuse. Some ash, representing less than 5% of the original volume of waste, will require to be landfilled as hazardous waste.

4.2.3 EU Directive 2000/76/EC – Incineration of Waste

The aim of this directive is to prevent or to limit as far as is practicable, negative effects on the environment from the incineration and co-incineration of waste. In particular the directive addresses pollution by emissions to air, soil, surface water and groundwater and the resulting risks to human health. The directive addresses the incineration of both hazardous and non-hazardous wastes.

The directive addresses the licensing, operations, control and monitoring of waste incinerators and sets very stringent emission limits. It also deals with the handling and fate of residues.

Conformance of the Project to Policy Objectives

The Ringaskiddy facility will promote the objectives of the EU incineration of waste directive. The waste to energy plant will operate significantly below the emission limit values stipulated in the directive. In addition, there will online continuous sampling for dioxins, although this is not a requirement of the directive.

4.3 Irish National Policies and Objectives on Waste Management

4.3.1 National Development Plan 2000-2006

The central aim of the National Development Plan 2000-2006 is to implement public policies, which will ensure the sustainability and consolidation of Ireland's recent economic growth. This is based on the development needs of the country and on achieving an appropriate balance between development and environmental conservation.

The plan recognises that the protection of the environment is a key national and EU priority, and the management of waste is an important element of any environmental protection programme.

The plan states that *'appropriate waste management infrastructure is vital not only for environmental reasons, but also for industrial development reasons, as lack of suitable facilities*

may hamper development.' The plan acknowledges that *'the recent levels of economic growth have placed a significant strain on the existing waste management infrastructure and extensive investment is now required to provide the necessary infrastructure.*'

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the National Development Plan. Phase 1 of the waste to energy plant will form a major part of the hazardous waste treatment infrastructure of the Country. The facility will underpin industrial development by ensuring that the necessary hazardous waste management infrastructure is in place and will reduce Ireland's dependency on exporting hazardous wastes for treatment.

4.3.2 Waste Management: Changing Our Ways (1998)

This document outlines Government policy on waste management and is addressed chiefly to local authorities. The document acknowledges that waste generation has continued to increase across Europe in the 1990s.

The acknowledged waste management hierarchy regards waste prevention as the most favourable option, with the following methods in decreasing order of desirability: minimisation, reuse, recycling and energy recovery. At the bottom of the 'pyramid', the least favoured option is disposal to landfill.

In general, waste management in Ireland has been characterised by being landfill orientated, which has been the cheapest available option. The document quotes figures from the National Waste Database Report 1996, which show that over 90% of household and commercial waste were sent to landfill. This heavy reliance on landfilling has served to limit the development of integrated waste management approaches and inhibited other options. Insufficient consideration has been given to the diversion of waste to recycling, recovery, or treatment and that this position must change radically. According to the policy, undue reliance on landfilling cannot continue to form the basis of a modern waste management infrastructure, and the place of landfill disposal, at the bottom of the waste management hierarchy, should be reflected in practice.

The policy states that any one solution on its own cannot address all waste management requirements and consequently the emphasis of the policy statement is on an integrated approach to dealing with waste management.

Waste production imposes a burden on both the waste management services and on the environment. Ensuring that waste generators pay the full cost of waste management (collection, treatment and disposal), will serve to focus public attention on the implications of waste production. The 'polluter pays' principle also provides an economic incentive to reduce waste generation.

The scope for increased participation by the private sector in all areas of waste management in Ireland is recognised in the document and, particularly, in the establishment and the operation of waste recovery and disposal facilities.

The document states that waste to energy incineration plays a significant part in the management of residual waste of many EU countries and, generally, materials recycling and waste to energy incineration are fully compatible with an integrated approach to waste management. Landfill disposal of residues is still required, but waste to energy is effective in diverting a significant

percentage of waste away from landfill, and with the proper control, it has a considerably lower environmental impact than landfill.

In addition the document states that

'the development of waste to energy is consistent with, and could make a significant contribution to, the implementation of the Government's renewable energy policy which currently aims to increase the share of renewable energy to 10% of the country's installed electricity generating capacity by the year 2000, with subsequent increases to be delivered in a programme which will be the subject of a forthcoming Green paper on sustainable energy.'

It is also acknowledged in the document that new waste management facilities are generally not welcomed by the public and can produce vigorous opposition. This may be due to a legacy of historic poor performance or the implications for those who live in close proximity to even well designed and managed facilities, such as traffic volumes. New developments, which may be essential in the wider public interest, may be subject to vigorous legal and political challenges. These challenges can put the developments at risk, causing delay and increasing development costs.

However, *Waste Management: Changing Our Ways* states that good planning, careful site selection, public education and awareness, along with a policy of openness and transparency, can mitigate such opposition. The document states that in addition to working closely with local communities, a proportion of the waste charges should be earmarked for environmental improvement projects, which would mitigate the impact of such facilities on communities where they are sited.

The major objective outlined in the policy statement is to stabilise, and in the longer term, reverse the growth in waste generation. The policy sets a series of specific targets which mainly relate to municipal waste. The following targets are to be achieved over a fifteen year time scale:

- diversion of 50% of overall household waste away from landfill
- a minimum of 65% reduction in biodegradeable wastes consigned to landfill
- the development of waste recovery facilities employing environmentally beneficial technologies
- recycling of 35% of municipal waste
- recycling of at least 50% of construction and demolition waste within a five year period, with a progressive increase to at least 85% over fifteen years
- rationalisation of the number of landfills, with a sustained reduction in numbers
- an 80% reduction in methane emissions from landfills

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the Changing Our Ways policy statement. The facility will form part of an integrated waste management infrastructure. The 'polluter pays' principle will apply. The facility will be a substantial private sector investment, in line with the policy of increasing private sector involvement in the provision of waste facilities. The waste to energy facility will generate electricity from a renewable source.

In relation to the specific targets, phase 1 of the waste to energy plant will have the capacity to treat approximately 20,000 tonnes per annum of industrial treatment plant sludge, a biodegradeable waste, which is currently landfilled. Phase 1 will also treat waste, which is being

landfilled currently. Phase 2 of the waste to energy plant will have the capacity divert 100,000 tonnes of municipal solid waste produced in County Cork from landfill.

To mitigate against any potential impact on local communities, Indaver will build and fund the operation of a Community Recycling Park as part of the waste management facility. The park will accept a wide range of recyclable materials. Indaver will utilise a portion of income from waste charges for appropriate environmental improvement projects, to mitigate the impact of the facility on the local community.

4.3.3 National Hazardous Waste Management Plan (2001)

The National Hazardous Waste Management Plan was prepared by the Environmental Protection Agency as required by the Waste Management Act 1996. The main objectives of the plan are :

- *to prevent the production of hazardous waste and to minimise its effects on the environment*
- *to manage hazardous waste which cannot be prevented in such a manner as to ensure that environmental pollution is minimised and not transferred from one environmental medium to another.*

The plan is a statutory document. All commercial generators, managers and regulators of hazardous waste are required to manage their hazardous waste in line with the existing legislation and the recommendations made in the Plan.

The Plan recognises that, while there is adequate capacity for the recovery/disposal of certain types of hazardous waste, significantly increased collection rates are required for the majority of hazardous waste. The Plan acknowledges that Ireland has a relatively well developed waste brokerage industry, but that one area with major shortcomings is in relation to small generators (e.g. commercial outlets, households). The plan recommends a number of measures by which facilities for this sector could be provided, such as the use of civic amenity sites and depots, including facilities for acceptance of household hazardous waste.

The plan lists a number of priorities in relation to hazardous waste management for the period 1999-2004, including the following:

- establishment of an improved collection infrastructure for hazardous household, agricultural and SME (small and medium enterprise) wastes
- allocation of financial and technical assistance for the development of recovery and disposal facilities for hazardous waste, where existing capacity is deemed inadequate
- development of hazardous waste landfill capacity and thermal treatment to achieve self sufficiency, and reduce Irelands over reliance on waste disposal facilities abroad.

The plan states that 61,266 tonnes of hazardous waste were exported from Ireland for disposal by incineration in 1999.

The plan reviews the arguments for and against the establishment of a hazardous waste thermal treatment facility in Ireland. It concludes that the quantities of hazardous waste exported for incineration between 1996 and 1999 justify the establishment of a high temperature thermal treatment facility in Ireland. The Plan considers that such a thermal treatment facility is required and that the facility should incorporate provision for energy recovery. This would ensure that Ireland conforms to the principles of proximity and self-sufficiency set out in the Waste Directive 75/442/EEC.

The Plan states:

'Under current definitions, waste-to-energy is classified as waste recovery. While primarily recommended in this Plan to provide for hazardous waste disposal, any new thermal treatment facility is likely, in accordance with the provisions of Directive 2000/76/EC on the incineration of waste and Directive 75/442/EEC on waste, to incorporate provision for energy recovery. Such a facility may, because of its energy recovery capability and taking other factors into account, be classified as a waste recovery facility for certain waste streams of high calorific value. For all other waste streams, it would be classified as a waste disposal facility.'

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the National Hazardous Waste management plan. The project meets the requirement, identified in the plan, to establish a hazardous waste thermal treatment facility in Ireland. This will lessen Ireland's dependence on overseas facilities for hazard waste disposal, which makes the country vulnerable to outside market forces and is against EU policies such as the proximity principal and the requirement for self-sufficiency in hazardous waste management.

The community recycling park, for use by the general public, will accept some household hazardous waste, such as fluorescent tubes and batteries, which are currently being disposed of to municipal landfills.

4.3.4 Sustainable Development – A Strategy for Ireland

The Department of the Environment and Local Government published the Sustainable Development Strategy in 1997. The central aim of the strategy is to provide a comprehensive analysis and framework that will ensure development is undertaken in a sustainable manner in Ireland. It also supports the commitment that Ireland made to sustainable development at the Earth Summit in Rio de Janeiro in 1992.

The strategy recognises that waste is one of the most problematic areas of modern environmental management. It says that the issues associated with the generation and disposal of waste are inextricably linked to present-day economic activity, industrial development, lifestyle and consumption patterns.

It states that one of the major objectives in working towards more sustainable practices will be the acceptance of appropriate responsibility for waste management, on a shared basis, by all sectors of society.

In relation to industrial waste, the strategy states that *'the minimisation of industrial wastes is a major objective of the strategy; such measures as cleaner production processes, life cycle analysis and other eco-efficient measures will contribute to the realisation of this objective.*' The strategic objectives for waste are to promote waste reduction, reuse and recycling, and higher environmental standards in waste disposal. However, the strategy concedes that even with an extensive and sophisticated clean technology programme, there will always be some residual wastes, from commercial, domestic and industrial sources that will require disposal.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of Sustainable Development - A Strategy for Ireland. The waste management facility will form part of an integrated approach to the management of waste. The waste to energy plant will recover energy and generate electricity using a non-fossil fuel, from a local, renewable source. The community recycling park will promote the reuse and recycling of waste. The highest environmental standards will be employed in all aspects of the operation of the facility.

4.3.5 National Climate Change Strategy Ireland

The Department of the Environment and Local Government published the National Climate Change Strategy in October 2000. The strategy provides a framework for achieving greenhouse gas emission reductions, and is an essential step in preparing the country for the ratification of the Kyoto Protocol. In line with other EU members, this is scheduled to take place sometime before 2002.

The main objectives of the strategy are as follows:

- to meet Ireland's legally binding commitment under the Kyoto Protocol
- to position Ireland to be able to adhere to potentially more stringent targets in the years following 2012.

Emissions of methane (CH_4) from the waste sector arise from the anaerobic decomposition (breakdown of organic matter in the absence of oxygen), of wastes containing carbon in landfills. The Climate Change Strategy recognises that the achievement of national waste management targets, and, particularly, substantial diversion of waste from landfill, should lead to an 80% reduction in methane emissions from landfill by 2015. Reduction in the amount of biodegradable materials sent to landfill should help meet Ireland's Kyoto obligations.

The strategy states that the energy sector contributed 32% of Irelands CO_2 emissions, and 21.6% of the combined three main greenhouse gases in 1990. The objectives for the energy sector in the strategy include 'An expansion of renewable energy', and the substitution of coal, peat and oil by natural gas and renewable fuels.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the National Climate Change Strategy. The first phase of the Ringaskiddy facility will have the capacity to treat 20,000 tonnes per annum of waste activated sludge from industrial treatment plants. This is a biodegradable waste, which currently is disposed of to landfill. Removing this material from landfill will lessen methane gas emissions. The waste to energy plant will generate 18 MW of electricity, thus meeting one of the energy sector objectives of the strategy, for the generation of electricity using a non-fossil fuel source.

4.3.6 Green Paper on Sustainable Energy

The Department of Public Enterprise published the Green Paper on Sustainable Energy in September 1999. The objective of the green paper was to indicate how Ireland could meet its energy requirements in an environmentally and economically sustainable way having regard to forecast economic growth and security of supply objectives.

The green paper recognises that the Kyoto Protocol (reduction of greenhouse gas emissions) imposes very challenging targets on Ireland. The paper considers ways to achieve a reduction in energy consumption and states:

'Ireland's capacity to achieve energy consumption reductions will be strengthened by EU co-ordinated policies and measures in areas such as the rational use of energy and promotion of renewables and CHP.'

The paper explains renewable sources as follows:

'Renewable energy sources are energy sources, which are replenishable at or about their rate of consumption. The more obvious sources include wind, hydro, wave and solar. Also included are other sources where the replenishment, although not occurring naturally, can be actively provided for (e.g. short rotation crops, including forestry) or can be reliably predicted to occur in any event (e.g. wastes). Fossil fuels, which are finite, are excluded. The use of wastes for the purpose of power generation must be considered in the context of a waste management strategy, which favours prevention, minimisation, recycling and re-use over energy recovery.'

As well as reducing the requirement to burn fossil fuels, the paper states that some renewable energy fuel sources have the additional benefits of capturing greenhouse gas emissions from other sources, notably methane from waste, by using the fuel to generate electricity. Renewable fuel sources are indigenous and can also contribute positively to import substitution and security of energy supply.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the Green Paper on Sustainable Energy. The Ringaskiddy facility will use a renewable fuel, waste, to generate electricity.

4.4 Cork County and City Policy Guidance

4.4.1 Cork County Development Plan (South Cork) 1996

The aim of the plan is to stimulate growth in South Cork, and to guide it, so that it supports the development of coherent communities, and encourages a more even spread of development between them. The Development Plan also includes a plan for Ringaskiddy and contains policies designed to achieve compatibility of industrial, residential and amenity functions.

The plan states that sectoral policies can be used to improve the prospects of both attracting new employment, and of retaining existing jobs. Sectoral policies should cover among other things, the *'development of specialised resources, services and skills to support the development of major sectors, and improvement in business support services'.*

The rapidly growing manufacturing sectors in South Cork, have been the pharmaceuticals and electronics industries. The Cork area has built up specialised resources and an established skills pool in these sectors.

A significant proportion of the total number of chemical/pharmaceutical manufacturing plants, located in Ireland, are in South Cork. Ringaskiddy has five major facilities. While concentration of this type of industry increases the awareness of the environmental issues involved, the plan

states that it also allows the build up of the relevant skills and expertise in the area. This concentration also makes the provision of the specialised infrastructure more economical and serves to encourage growth of specialised suppliers and services.

Large public investment has taken place in the infrastructure in Ringaskiddy, much of it intended to support the development of process industry.

The Development Plan acknowledges that substantial pharmaceutical projects are an infrequent occurrence, but the measures that have been taken in the provision of infrastructure, coupled with the availability of specialised skills and services, puts Cork in a position to compete for such projects.

May 2001 Variation of the County at Large Volume of the Development Plan

Cork County Council adopted a variation of the County at Large Volume of the Development Plan, paragraph 6.3, in May 2001. The variation relates to the management of wastes. Included in the text of the variation is the following:

'The Environmental Protection Agency (EPA) published a proposed National Hazardous Waste Management Plan in September 1999 and the formal adoption of a National Plan is expected shortly. Any proposals relating to the management of hazardous waste in County Cork arising from the adoption of a National Plan will have to be considered by the Council. Proper provision for the management of this waste is vital to the future well being of existing industry in Cork and to the future of industrial development in the County.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives for South Cork in the County Development Plan. The Ringaskiddy facility will be a 'specialised resource', complimenting the existing infrastructure of the Ringaskiddy area by providing a more sustainable alternative for the management of certain categories of industrial wastes, which currently are landfilled or exported for incineration. The facility will support existing and prospective new industries in Ringaskiddy, which otherwise may have to build on-site incinerators for the disposal of hazardous waste and effluent treatment plant sludge.

4.4.2 Waste Management Strategy for the Cork Region (1995)

The Waste Management Strategy was prepared by Cork County Council and Cork Corporation in 1995 and forms the overall framework for sustainable waste management in the Cork region. The priorities of the strategy are:

- *'The recycling/recovery of waste to comply with the recently published National Recycling Strategy for domestic and commercial waste.*
- *The technological (pre)treatment of wastes to minimise the amount and volume of wastes, which have to be landfilled.'*

The strategy adopts an integrated approach to waste management, and seeks to implement the EU waste hierarchy of prevention, minimisation, recycling/reuse, pre-treatment and final disposal. The main emphasis in the strategy is on the management of non-hazardous municipal waste. All the options available to the region for its waste management were examined. The options available were grouped into three different scenarios and these are described briefly below:

- Scenario 1 – adopts the concepts of the national recycling strategy and large scale home composting. Also, envisages the introduction of a new engineered landfill site(s).

- Scenario 2 – extension of scenario 1, introduces the concept of mechanical separation of household and commercial waste at a separation plant. The wet organic fraction (WOF) derived from the separation process to be composted, with the dry fraction (DF) being baled and subsequently landfilled.

- Scenario 3 – includes the concept of incinerating the dry fraction, or refuse derived fuel to lessen further the volume going to landfill.

The strategy did not recommend a particular scenario.

The strategy devotes a section to incineration of municipal solid waste, which is of relevance to phase 2 of the waste to energy plant. The strategy states the following:

'Incineration has been used in the past primarily to reduce the volume and the mass of solid waste disposed to landfill. However the option of recovering energy from the incineration process has gained significance with the recent promotion and advancement of the utilisation of renewable energy sources. This benefit is even more significant in the light of the fact that the European Union (EU) within the scope of the Packaging and Packaging Waste Directive has recognised incineration with energy recovery as an effective means of recovering packaging waste.'

'The modern municipal solid waste (MSW) incinerator or waste to energy (WTE) plant facilitates an overall thermal efficiency of 70-90% with electricity generation being 25-35% efficient in terms of energy conversion. Combined heat and power CHP plants generally operate at 60-80% efficiency in terms of energy conversion. Given the complexity and process control requirements the capital costs for an incineration plant are very high in comparison with other pretreatment processes.

To obtain an economically feasible scale of operation, the capacity of a modern MSW incinerator generally varies from between 250,000 and 700,000 tpa. For the Cork region this would require the treatment of all waste generated in the area by incineration and would possibly require waste from other counties to be directed to the incinerator. This scenario implies large transportation distances and a number of transfer stations.'

The Strategy states that waste incineration gives rise to liquid effluents such as water from scrubbers and from the quench tank, and that *'the liquid effluents must be landfilled in a comparable manner to hazardous waste.*

'Once constructed, the flexibility with regard to new developments of a MSW incinerator is restricted. If the incineration capacity is not used completely the operational costs will increase substantially due primarily to the amortisation of capital costs.'

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the Waste Management Strategy for the Cork region. Both phases of the waste to energy facility will provide treatment for waste, which will significantly reduce the volume of industrial and municipal waste going to landfill. Energy will be recovered in the process. The community recycling park will facilitate the recycling of waste.

In relation to the specific comments on the economies of scale for incineration of MSW, Indaver has considerable experience in Belgium in running waste to energy plants, utilising MSW or hazardous waste as fuel, with capacities in the range 100,000 to 350,000 tonnes/annum. These have proved to be economically feasible over many years with state of the art environmental controls. Ireland will generate enough industrial hazardous waste to utilise fully the hazardous waste capacity of the phase 1 of the Ringaskiddy waste to energy plant. With the two phases in operation, the Ringaskiddy plant will have a capacity to treat at most approximately 30% of the industrial and municipal non-hazardous waste (excluding construction and demolition waste) which the Cork area will generate annually by 2003.

In both phases of the Ringaskiddy waste to energy plant all process liquids will be recycled within the plant. There will not be any liquid effluents from the process which will require disposal off site.

In 2001, PJ Tobin & Co. prepared a report on the Waste Management Strategy for the elected members of Cork County Council and Cork Corporation. This report was referred to in section 2.2.5 above. The report considered Indaver's proposal for the Ringaskiddy Waste Management Facility, in the context of the waste management options for the Cork region, and concluded that

'the proposal for a WRF (waste recycling facility) *is part only of an integrated approach which allows for incineration later. An early availability of the WTE/incineration facility in the Region would fit in with the overall regional strategy for Cork City and County (Scenario 3 of the Waste Management Strategy).'*

4.4.3 Waste Management Plan for Cork County (1999)

The Cork County Waste Management Plan was prepared by Cork County Council as required under the terms of the Waste Management Act, 1996 and the Waste Management (Planning) Regulations, 1997. The plan covers the period from 1999 to 2004, and will be reviewed and updated at five-year intervals thereafter.

The plan takes note of a number of documents including 'Winning With Waste' and the Waste Management Strategy for the Cork Region 1995. 'Winning With Waste' was a consultation paper on the future of waste management in Cork County. The 1998 Government policy document Waste Management: Changing our Ways and legislation including the Waste Management Act 1996, Waste Management Regulations 1997 and the Litter Pollution Act, 1997 were also consulted.

The central goal of the Cork County Waste Management Plan is one of sustainability, and effective waste management is seen as a fundamental part of sustainable development. The plan was guided in its preparation by the following principles embraced by the EU, namely:

- Polluter Pays Principle - those who generate waste should pay for its management.
- Proximity Principle - waste should be managed as close to where it was generated as possible.
- Precautionary Principle – that any risk of environmental pollution must be addressed and alleviated.
- Principle of Shared Responsibility – that all sectors of society should feel responsible for the environment and as such should always act responsibly towards it.

The plan states that the concept of waste management is relatively new to Ireland, with waste disposal consisting almost solely of landfilling. It states that while recycling technologies are generally regarded as acceptable, the preference for different disposal technologies is quite variable. While incineration is generally disliked by the public this is often due to people having limited knowledge of the technology.

The acceptance of the waste management hierarchy, that is, waste prevention followed by promotion of recycling and reuse and then the optimisation of final disposal methods for waste which cannot be reused or recycled, has meant that waste disposal with energy recovery is more desirable than disposal without energy recovery. Therefore, incineration with energy recovery is gaining in popularity. Landfills will be required to have landfill gas collection facilities. The recovered gas can also be used for energy recovery.

In relation to hazardous waste the plan acknowledges that:

'The Proximity Principle, one of the policies on which the (National Hazardous Waste Management) *Plan is based, will require that a disposal facility for unavoidable hazardous waste be located in Ireland, should the economies of scale be so balanced. As over 60% of all hazardous waste generated in Ireland in 1996 was generated in Cork County Council's functional area, this part of the plan may be of particular significance to Cork County.*

The Waste Management Plan was primarily concerned with the provisions to be made by Cork County Council for the management of municipal waste. The three scenarios for management of municipal waste, outlined in the Waste Management Strategy for the Cork Region (refer to section 4.4.2 above), were reviewed. It was decided to proceed with Scenario 2. However, subsequent reviews of the Waste Management Plan will include the review of other options and other waste management techniques.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the Waste Management Plan for County Cork. The waste management facility will be an essential part of an effective waste management infrastructure, which the plan regards as central to sustainable development. The facility conforms to the EU principles outlined in the plan as it will be located in close proximity to the waste producers, will levy appropriate charges and will employ the highest environmental standards. The waste to energy facility will provide treatment for waste, which will reduce by aproximately 90% the volume of waste going to landfill. Energy will be recovered in the process. The community recycling park will facilitate the recycling of waste.

The waste management infrastructure for municipal waste, to be provided by Cork County Council, does not include thermal treatment at this time. The plan does not preclude the provision of thermal treatment by others.

4.4.4 Cork City Waste Management Plan 1999-2004

The Cork City Waste Management Plan was prepared by Cork Corporation as required under the terms of the Waste Management Act, 1996 and the Waste Management (Planning) Regulations, 1997. The plan covers the period from 1999 to 2004. It was adopted in July 2001 and will be reviewed and updated at five-year intervals.

This plan is similar to the Cork County Council Waste Management Plan. It is based on a number of policy documents including the 1995 Cork Waste Management Strategy, the 1998 Government

policy document Waste Management: Changing our Ways, the Waste Management Act 1996, Landfill Act 1999 and various EU waste management principles.

The plan states that in the short-term Cork Corporation and Cork County Council will provide for a waste recovery facility and a new landfill facility. However, in the long-term, consideration will be given by the two local authorities to providing a thermal treatment plant (with full energy and power recovery) to serve the Region's needs.

4.4.5 Sludge Management Plan for County Cork 2000

The Sludge Management Plan (for non-hazardous sludge) was prepared on behalf of Cork County Council by Fehily Timoney & Co. in 2000. The Plan addresses the management of organic sludge produced in industrial and municipal wastewater treatment plants. The Plan had the following aims:

- identify strategies for maximising the beneficial reuse of sludge
- provide recommendations to ensure the sustainability of the reuse of sludge
- where possible, to integrate the management of non-hazardous sludge with other environmental policies.

The study found that non-hazardous industrial sludge accounted for 12% (84,000 tonnes Dry Solids/year), of the total of all non-hazardous sludge produced in County Cork. Of this total more than half, 48,088 tonnes, are industrial biological sludges from the South Cork area. These arise from the pharmaceutical industry in South Cork. 41,486 tonnes are from waste water treatment plants and 6,602 tonnes are 'production sludges'. It is estimated that approximately 67% of all industrial biological sludge is disposed of to landfill.

One of the main functions of the plan was to identify locations that would be suitable for the establishment of 'hub-centres' for sludge treatment. The plan identifies Ringaskiddy as one such 'hub-centre'. As most of the industries in this area have their own wastewater treatment plants, it is not envisaged by the County Council that any industrial wastewater would be treated in any future development of a municipal wastewater treatment plant in Ringaskiddy. The document does say, however, that a hub-centre for the co-treatment of municipal and industrial sludges could have benefits such as providing an alternative to landfill disposal.

The majority of industries disposing of sludge use local authority owned and operated landfill sites. The plan acknowledges that landfill capacity in general is becoming increasingly limited, with Cork County Council now accepting de-watered sludge at only one of its landfill facilities.

It also says that sludge is generally not suitable for landfill disposal because:

- it has a low dry solids content
- it is not space efficient
- its high liquid content increases leachate volume
- its organic content accelerates the generation of landfill gas
- it may release odours on decomposition.

The plan states that one of the primary objectives should be the minimisation of both industrial and local authority sludge going to landfill.

The plan identifies alternative disposal routes for sludge such as composting and final use on agricultural land or in horticulture. However, it accepts that some of the industrial sludges would

not be suitable for use in agriculture or horticulture as they may contain residues from the manufacturing processes. For this reason the plan identifies the need for a destruction technology for the Ringaskiddy hub.

Four destruction technologies are listed:

- reed beds
- vermicomposting
- incineration
- advanced fluidised composting.

The Plan suggests advanced fluidised composting technology. It concludes that the quantity of sludge to be treated in the Ringaskiddy hub would be too small for a dedicated sludge incinerator in Ringaskiddy to be economical.

Conformance of the Project to Policy Objectives

The Ringaskiddy waste management facility will promote the objectives of the Sludge Management Plan for County Cork. Phase 1 of the waste to energy plant will use a destruction technology, as suggested in the plan, for the sludge from pharmaceutical plants, and will have the capacity to divert approximately 20,000 tonnes per annum of industrial sludge away from landfill. Ringaskiddy is one of the hub locations for sludge treatment suggested in the plan. It is very close to major industrial sludge generators, thereby minimising the sludge transportation requirements.

While the plan concluded that the volume of sludge to be disposed of was too small for a dedicated sludge incinerator, the use of incineration becomes economically feasible when the sludge is treated together with other waste streams.

4.5 Zoning Objectives of the Proposed Site

4.5.1 Definition of Industrial Process

The County Development Plan for County Cork does not give a definition of an industrial activity.

Under the Local Government Planning & Development Regulations (1994) Section 8, an industrial process is defined as follows:

'any process which is carried on in the course of trade or business other than agriculture and which is for or incidental to the making of any article or part of an article (including a vehicle, aircraft, ship or vessel, or a film, video or sound recording), or the altering, repairing, ornamenting, finishing, cleaning, washing, packing, canning, adapting for sale, breaking up or demolition of any article, including the getting, dressing, or treatment of minerals'"

Both phases of the Ringaskiddy waste management facility will involve processes which are incidental to the making of articles, and are for the altering, breaking up and demolition of articles, and thus both phases will be industrial processes.

In the Air Pollution Act 1987, Section 6(1) gives the following definition of an industrial plant:

"Industrial plant" in this Act means any plant, equipment, appliance, apparatus, machinery, works, building or other structure or any land or any part of any land which is used in the course

of trade, business or industry for the purpose of, or incidental to, any industrial process specified in the Third Schedule.

Incineration of solid or liquid wastes is listed as item 22 in the Third Schedule of the Air Pollution Act 1987 Act.

An Bord Pleanála, in its refusal of permission for the proposed Kilcock Thermal Treatment Plant, regarded the thermal treatment plant as an industrial development. (Refer to An Bord Pleanála file PL 09.112536)

4.5.2 Zoning Objectives in the County Development Plan

As can be seen in Figure 4.1, much of the Ringaskiddy peninsula, including most of the site of the proposed waste management facility, is zoned for industrial use in the Cork County Development Plan (South Cork) 1996. The small areas of land owned by Indaver, which are not zoned industrial, will not be developed.

The County Development Plan divides Ringaskiddy into five industrial zones. Refer to Figure 4.2. The site for the waste management facility is in Zone C.

In relation to Zone C the plan states:
'Part of Zone C is above the 100ft contour and access to the northern part may provide difficulties as a result of steep slopes. The area is largely owned by the IDA with Irish Shell owning the balance (70ha) and is suitable for industries with high water requirements. In the 1986 Plan, dependence on port facilities was seen as less relevant than for Zone B, but as a result of the commitment of most of Zone A, the position is now similar to Zone B.'

The relevant text in the Plan for Zone B is:
'This zone will be allocated to industries that are heavily dependent on port facilities or - alternatively - with considerable water requirements.'

Conformance of the Project to the Zoning Objective

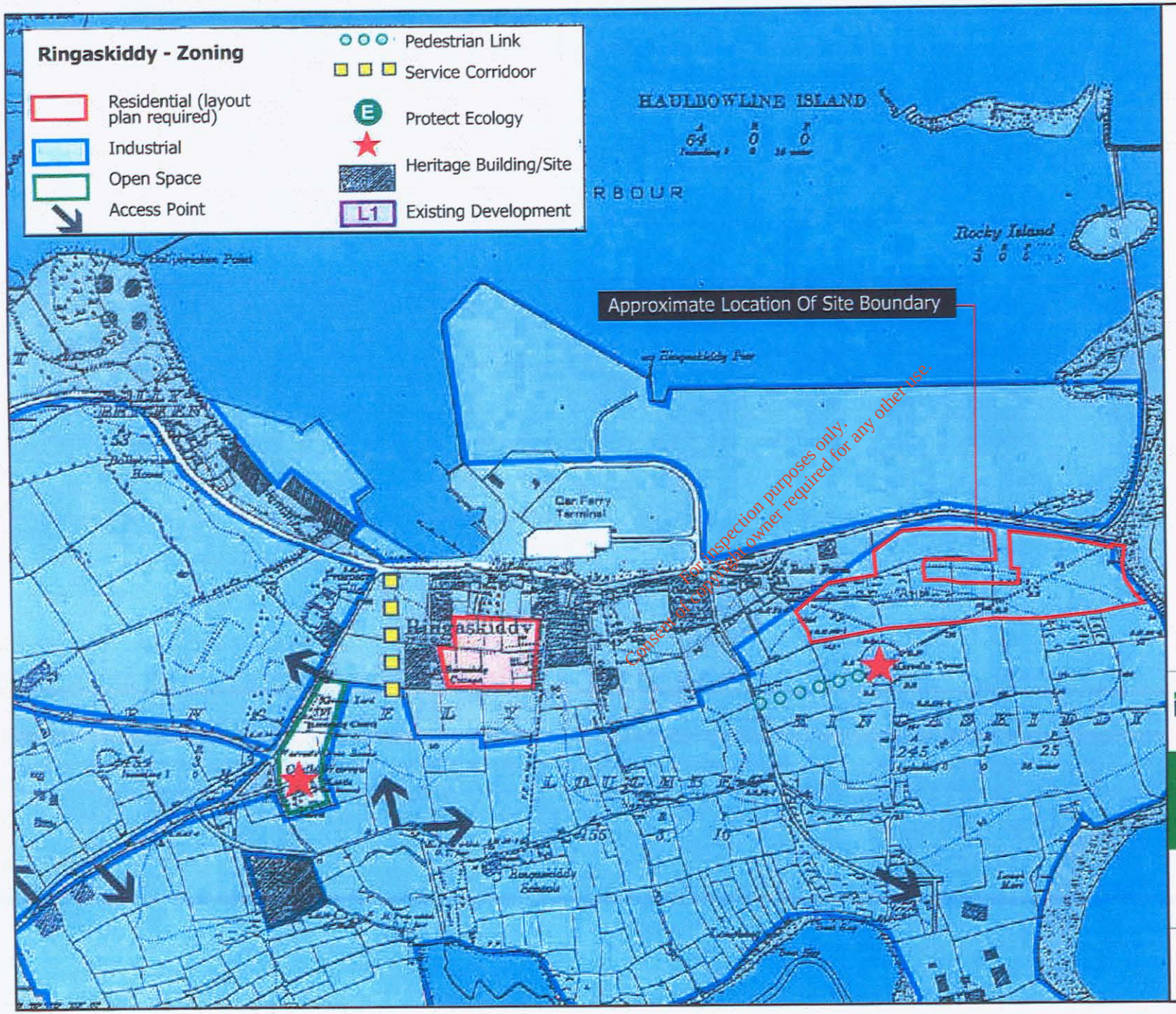
Both phases of the Ringaskiddy waste management facility conform to the zoning in the County Development Plan.

The waste management facility will use wet flue gas cleaning systems. Consequently it will have considerable water requirements. The total water requirement for both phases will be circa 384m^3 per day, which is 134,400 m^3 per annum (84,500 gals/day, 30 million gallons per year). The water requirements would be considerably more if the design did not include water reduction measures such as the recycling of process water where possible and the use of air cooled condensers.

4.6 Summary of Planning and Policy Context

EU, Irish Government and Cork County policy, as set down in the documents reviewed in this section, is to manage waste in an economical, sustainable and environmentally appropriate manner. The policies can be summarised as:

- ongoing and sustainable economic development requires the provision of an adequate waste management infrastructure
- Ireland should be self-sufficient in waste management
- an integrated approach to waste management is required



INDAVER IRELAND Ringaskiddy waste management facility

Environmental Impact Statement

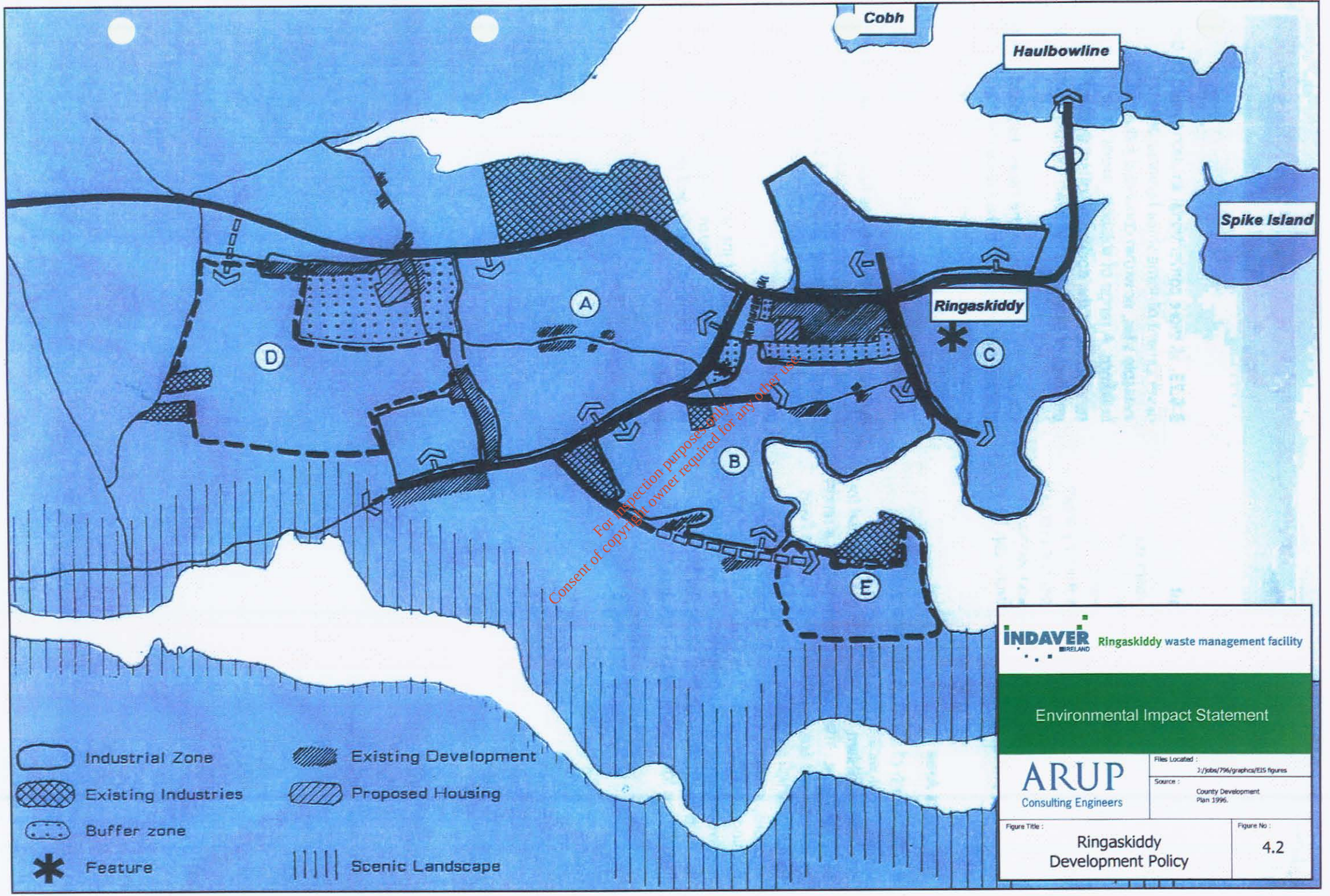
ARUP Consulting Engineers

Files Located : J:/jobs/796/graphics/EIS figures

Source : Cork County Development Plan (1996)

Figure Title : Zoning Objectives

Figure No : 4.1



- waste generation should be minimised
- materials should be reused, recycled or recovered
- energy should be recovered from residual waste, which is a renewable energy source
- disposal to landfill is the least desirable waste management option
- biodegradable waste should not be landfilled
- the amount of other waste going to landfill should be minimised
- the producer or consumer should pay the waste management costs
- waste should be managed as close to source as possible
- the risk of environmental pollution from waste must be addressed and alleviated.

Phase 1 of the Ringaskiddy waste management facility will treat hazardous waste close to the source and help to achieve the goal of Ireland being self-sufficient in hazardous waste management. Both phases will result in a considerable reduction in the amount of waste requiring to be landfilled. Energy will be recovered to generate electricity. Customers will pay for the treatment of waste. The treatment capacity of each phase of the plant will be such that the incentive to minimised waste generation will not be removed. The highest emission control standards will be applied. The community recycling park and Indaver's waste education officer will help to promote waste minimisation and materials recycling.

The site is zoned for industrial use, and the location of the facility on this site in Ringaskiddy, complies with the Cork County Development Plan policies and objectives.

4.7 References

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Tobin P.J. & Co. Ltd. (2001) Waste Management Strategy for Cork Region; Waste Recovery Facility at Kinsale Road Landfill – Report to Elected Members, P. J. Tobin & Co. Ltd., Galway

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EU Directive 2000/76/EC – Incineration of Waste

Fehily Timoney & Co. (2000) Sludge Management Plan for County Cork 2000. Prepared for Cork County Council

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