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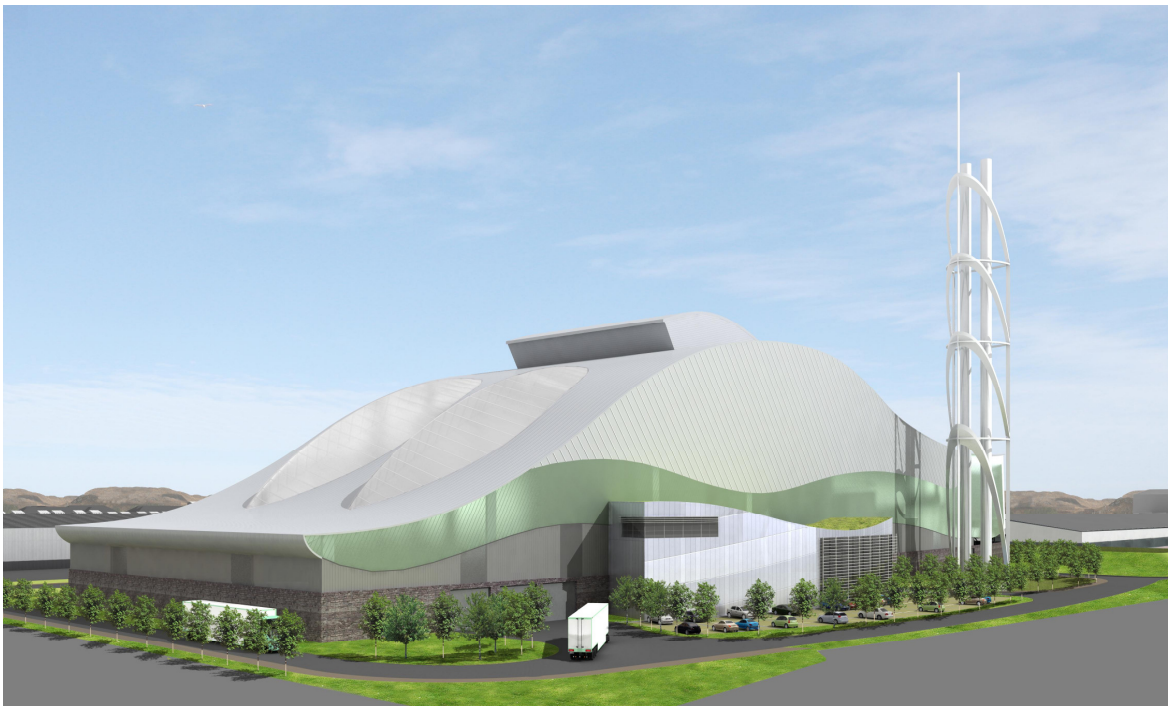
Volume 4
Non-Technical Summary

Energy from Waste and Recycling Facility
Trident Park, Cardiff



Viridor

January 2010

solutions for today's environment

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1.0 INTRODUCTION

Viridor Waste Management Limited (Viridor) has submitted a planning application for an Energy from Waste (EfW) and recycling facility at Trident Park, Cardiff, to Cardiff Council. This planning application is accompanied by an Environmental Statement (ES) and this "Non-Technical Summary" (NTS) has been prepared to summarise the findings and conclusions of the ES.

The full description of the development proposed at the site is as follows:

> ***"The erection of an Energy from Waste facility to include a Combined Heat and Power plant, pre-treatment/recycling area, incinerator bottom ash recycling area and ancillary offices at Trident Park, Glass Avenue, off Ocean Way, Cardiff".***

The EfW will process up to 350,000 tonnes of non-hazardous residual waste per year. Residual wastes is the waste remaining after the removal of materials for reuse or recycling either at source by householders (as part of kerbside collections organised by local authorities) or following segregation or treatment at other facilities. The facility will not process or accept any hazardous waste. The waste will be burnt at temperatures of up to 850°C and the energy generated will be used to produce electricity for export into the National Grid and heat for use in local businesses.

The site is located to the south-east of Cardiff City Centre at Glass Avenue, as shown on Figure NTS 1. The site and its surroundings formed part of the East Moors Steelworks that closed in 1978. Following its reclamation Nippon Electric Glass (UK) Limited (NEG) developed a television components factory on the land, which ceased production in 2005. Since that time, the site has been cleared of all buildings.

The Applicant

The proposed facility will be owned and operated by **Viridor.** Viridor, owned by the Pennon Group, is part of a major PLC that is focused on the water and waste management industries. Viridor is one of the UK's leading waste management companies and operates waste facilities throughout the UK.

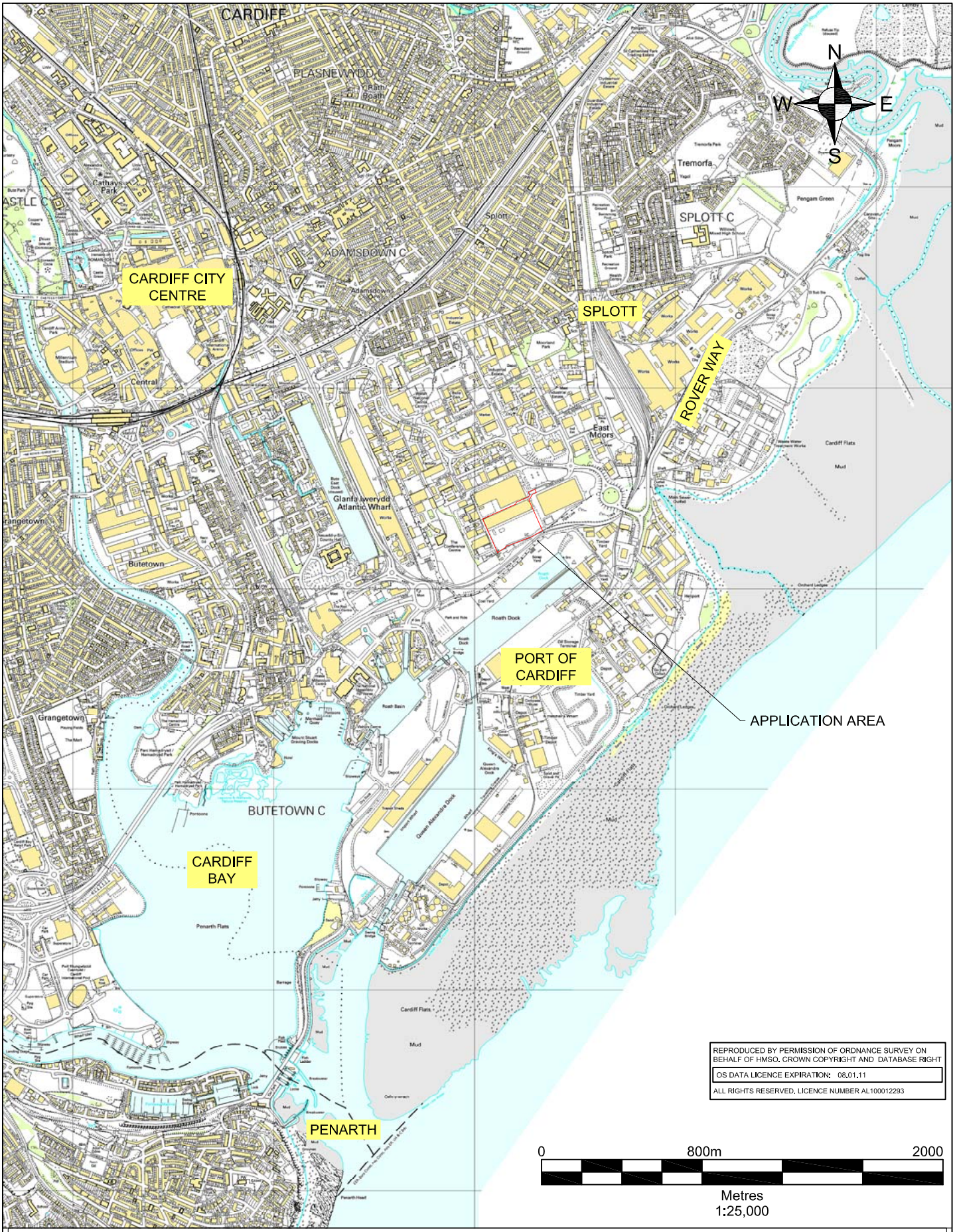
Revised Application

The planning application and ES that this NTS supports is a revision to a previous application submitted to Cardiff Council in November 2008 (ref: 08/02616/E). That proposal was recommended for approval by Council Officers at five Planning Committee meetings before being refused in July 2009. An Appeal has been lodged against this decision and is due to be held in July 2010.

This application seeks to deal with the issues raised by local residents and the Planning Committee. The key amendments are:

- revised internal layout to increase the quantity of waste that can be recycled and reduce the level of residual waste that is unsuitable for combustion;
- additional recovery facility for the incinerator bottom ash generated from the process;
- further consideration of the most sustainable way in which to treat fly ash; and
- a commitment to only deal with waste from within South East Wales.

The ES considers each of these in detail.



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NTS1 Site Location Plan

Site	TRIDENT PARK, CARDIFF
Project	PLANNING APPLICATION
Date	JANUARY 2010
Scale	1:25,000
Drawing	**Site Location Plan**
Dwg No.	**NTS1**

2.0 WHY IS THE FACILITY NEEDED?

The key driver for a waste management facility of this nature is the urgent need to move away from landfill as the main way of managing waste. This is being required at an international and national level by policies of the European Union and the Welsh Assembly Government (WAG), but also at a local level by the imminent closure of Lamby Way Landfill in Cardiff.

In national terms, the WAG is proposing to introduce extremely ambitious targets for waste recycling. The current recycling rate for municipal waste in South East Wales is approximately 25%. The Assembly Government's targets are that by 2010, recycling will increase to 40%, to 58% by 2016 and to 70% by 2025. The equivalent European target is a recycling rate of 50% by 2020.

Even if the WAG recycling targets are met, there will still be an element of residual waste (waste that is unable to be recycled) that needs to be treated. The impending closure of the Lamby Way Landfill in east Cardiff, and a deficiency of other operational waste management facilities in South-East Wales means that notwithstanding recent permissions, additional operations are necessary.

The proposed EfW will complement recycling centres around South East Wales that have already been constructed or are proposed, and will ensure that any residual waste is disposed of in a sustainable way. The evidence from other European countries is that high recycling rates are achievable with EfW facilities in place to treat residual wastes.

Within South-East Wales a variety of different technologies have been considered by the local authorities to treat residual waste. The use of EfW with the potential to recover the heat for local use is one of the preferred options for the region, and the technology proposed at Trident Park is proven to be effective and efficient, and is used elsewhere within the United Kingdom and Europe.

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NTS2 View of Application Site from South

Site	TRIDENT PARK, CARDIFF
Project	PLANNING APPLICATION
Date	JANUARY 2010
Scale	NTS

Drawing
View of Application Site from South

Dwg No.
NTS2

3.0 THE SITE AND ITS SETTING

The proposed site for the facility is located approximately 2km south-east of Cardiff City centre. It extends to 4.5 hectares, which is situated within the larger (20ha.) redevelopment site of Trident Park.

Access to Trident Park is gained via Glass Avenue which has a four-arm roundabout junction with the A4232, Ocean Way. The site is located within the industrial area of Cardiff and is well situated for access to the A48(M) and M4. The site's location in the context of Cardiff is illustrated on Figure NTS2.

The site has been previously occupied by copper, iron and steel works, but most recently by a television components factory. The site is a brownfield site (i.e. previously developed), and is located directly to the north of the Port of Cardiff. To the west, east and north of the site are the mixed industrial and commercial developments that characterise this part of Cardiff.

The site is distant from residential housing. Three apartment buildings are the closest housing to the site: Queensgate North (the Water Quarter) some 600 metres to the south-west of the site; Adventurer's Quay, approximately to the 650m south, and flats at Lewis Road, 600 metres to the north.

The site itself is not subject to any environmental constraints in respect of ecology, landscape, archaeology, flood risk or landscape. The Severn Estuary is located approximately 500 metres to the south, and includes a number of international and national nature conservation designations including Special Area of Conservation, Site of Special Scientific Interest, and proposed Special Protection Area. The Estuary is designated for its significance for wintering wildfowl.

There is no public access to the site or the surrounding roads or land, and there is no rail or dock infrastructure associated with the site.

As part of the application process, an assessment was undertaken to establish those sites with the potential to accommodate a sub-regional residual waste facility. Those sites that benefit from planning permission for a facility of this nature were excluded from the latter stages of this exercise.

The site selection process included a staged process that assessed an initial 100 potential sites against a number of key indicators relating to the:

- built environment;
- natural environment;
- potential to utilise heat and power; and
- proximity to waste arisings.

The Trident Park site scored significantly better than the others.

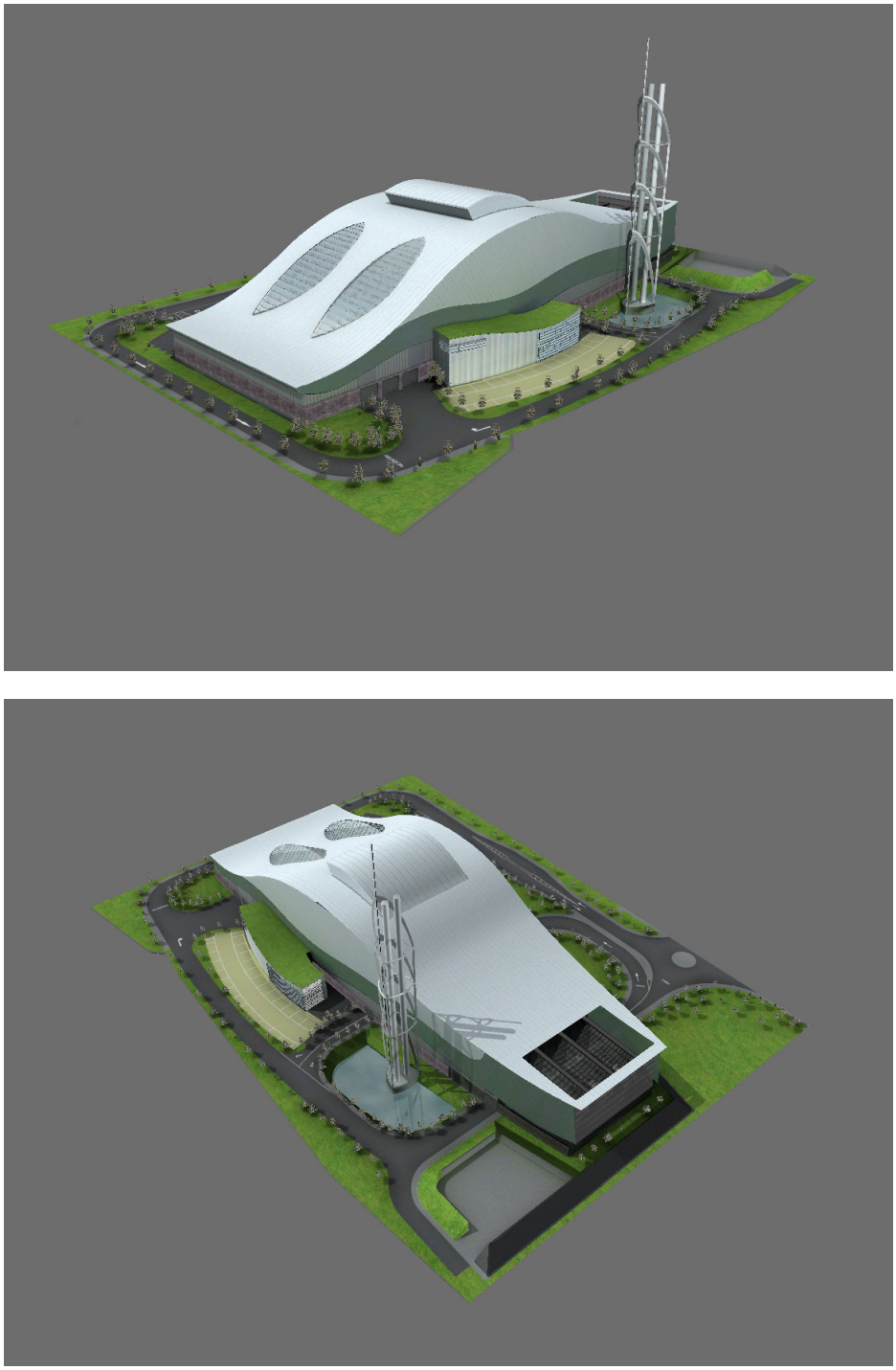


Figure NTS 3

Computer Generated Images of the Proposed Facility

View from South West (Top) and North West (Bottom)

4.0 DEVELOPMENT PROPOSALS

4.1 The Building

The EfW facility will be enclosed within a single building that has been designed to integrate with Cardiff's landscape and architecture. The only external elements will be the weighbridge/gatehouse and the stack. There will be no outside storage, handling or processing of any waste: all waste will be deposited within the building, and the Incinerator Bottom Ash will be removed from the EfW via a covered conveyor to an adjoining building. The waste will be deposited in the refuse bunker located in the reception hall which will be maintained at a 'negative pressure' to ensure that odours from the waste do not escape to the atmosphere.

The overall length of the facility is 214.0 m, varying from 68.6 m to 41.9 m wide and from 12.0m to 40.00m in height to the apex of the main roof and 46.00 m to the top of the fin from the ground level of approximately 9m AOD. The axis of the site runs east-west. Figure NTS 3 consists of two computer generated images of the building itself, whilst Figure NTS 5 illustrates the layout of the site.

The top of the stack is 90m above the ground level, with an additional 10 metres height provided by the lightning rod. The existing chimney located to the west of the application site (which can be seen on NTS2) is approximately 80m high.

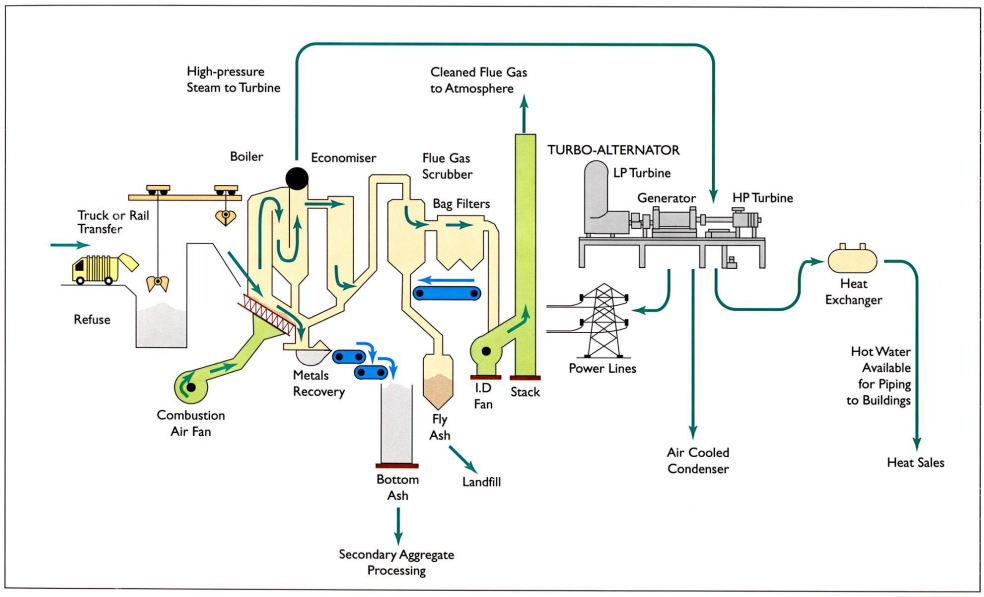
The offices, workshops, and visitor centre are all integral parts of the main EfW building. They are located on the southern side of the operational building to assist with solar benefit.

4.2 The Process

With the exception of scheduled maintenance periods, the facility will operate on a 24-hour basis throughout the year, with the majority of the deliveries taking place between 7 a.m. and 5 p.m.

A simplified flow diagram of the EfW process is illustrated below at Figure NTS 4.

Figure NTS 4
EfW Flow Diagram



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PERIMETER MOUNDING WITH STRUCTURAL VEGEGATION TO STRENGTHEN BOUNDARY OF SITE, MITIGATE POTENTIAL VIEWS OF GROUND LEVEL OPERATIONS AND SOFTEN BUILDING FORM WHEN VIEWED FROM NEIGHBOURING AREAS

Gate house and weighbridges

PROPOSED VERTICAL TRELLIS

10.5

9.5

10.75

10.5

10.75

10.5

10.75

SPECIES RICH GRASSLAND WITH MOWN EDGE ADJOINING ROADS

9.5

HGV's

CARS

10.00

11.00

12.25

12.0

SPECIES RICH GRASSLAND WITH MOWN EDGE ADJOINING ROADS

10.0

9.5

PERIMETER MOUNDING WITH STRUCTURAL VEGEGATION TO STRENGTHEN BOUNDARY OF SITE, MITIGATE POTENTIAL VIEWS OF GROUND LEVEL OPERATIONS AND SOFTEN BUILDING FORM WHEN VIEWED FROM NEIGHBOURING AREAS.

MOUNDING AND STRUCTURAL VEGETATION TO MITIGATE POTENTIAL VIEWS OF HV SUBSTATION COMPOUND

11.00

12.00

COACH PARKING

CAR PARK

CHIMNEYS

Surface Water Attenuation Pond

SURFACE WATER ATTENUATION POND

12.30

12.00

GRID OF TREES TO SOFTEN BUILDING FACADE AND TO REFLECT CURVING FORM OF BUILDING

OFFICE ENTRANCE

GRID OF TREES EXTENDED TO SOFTEN BUILDING FACADE AND EMPHASISE CURVING FORM OF LANDSCAPE AND ATTENUATION PONDS

NOTES

LEGEND

- Proposed Road/Footpath Surface
- Proposed Pedestrian Access
- Proposed Security Fence
- Proposed Pedestrian Crossing
- Block paving
- Proposed Grass
- Proposed Shrub Planting
- Proposed Vertical Trellis
- Proposed Surface Water Attenuation Ponds
- Proposed standard Trees
- Proposed Ground Contours (1m Interval)

Revision	Issue Date	Issued By	Comments

Viridor WASTE MANAGEMENT

Site	TRIDENT PARK
Project	ENERGY FROM WASTE FACILITY
Drawing	**LANDSCAPE PROPOSALS**
Date	JANUARY 2010
Drawing No.	-
Scale	1:400 @ A1

4C.223.032 DH31TCCCD0 4CSW

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The operation of an EfW plant consists of five key elements that are described below:

1. Waste reception;
2. Combustion;
3. Energy Recovery;
4. Flue Gas Treatment;
5. Residue Handling

4.2.1 Waste Reception

Up to 350,000 tonnes of pre-sorted residual waste will be delivered per year to the facility via Glass Avenue using bulk transfer and street refuse collection vehicles. All vehicles using the site will be covered to ensure that waste and odour is not released to the environment in the journey to the site.

All vehicles delivering residual waste will be weighed when entering the site and proceed to a waste reception hall where they will back up and discharge the waste into the refuse bunker From here waste is transferred to the two parallel “energy-from-waste” process lines.

Air is extracted from the waste reception hall and operates at negative air pressure. The air is used in the waste combustion process which helps control odours arising in this area. This reception area is enclosed with access doors and air louvers to manage traffic and air movements.

4.2.2 Combustion

Combustion takes place in two stages, with primary combustion undertaken on a moving mechanical grate to promote the mixing of burning/unburnt wastes. The combustion gas from the primary stage is heated further in the secondary combustion chamber to reach the specified minimum temperature of 850^0C for a minimum of two seconds. The burnt waste from primary combustion on the moving grate is removed as an ash, known as Incinerator Bottom Ash (IBA).

4.2.3 Energy Recovery

The heat generated by the combustion process is used to heat water within a water tube boiler to produce high pressure steam. This superheated steam is supplied to the turbine which drives the electricity generator. The generator has the ability to produce approximately 30 Mega Watts of electricity, enough to power some 30,000 homes.

An alternative use for this energy is that it can be passed out from the turbine and used to heat a local water network i.e. Combined Heat and Power (CHP). This is a more efficient use of the fuel source than electricity generation: surplus heat is not wasted as in conventional power generation, it is used where heat would have otherwise been generated using other fuels, such as fossil fuels.

Viridor are committed to maximising the opportunities for use of the surplus heat presented by the central location of Trident Park, and its proximity to the industrial, commercial and redevelopment areas of Cardiff.

In order to consider the potential for the use of heat, Viridor has contacted in excess of 100 companies, operators, developers, landowners, facility managers and amenity providers within a 5km radius of Trident Park.

The results of this exercise have demonstrated that there is significant potential for existing and future development and significant enthusiasm from a variety of sectors to utilise the excess heat generated by the plant. With the facility designed to allow the removal of the heat, Viridor is confident that by the time the facility is fully operational (2014) the contracts and infrastructure will be in place to utilise this important source of renewable energy.

4.2.4 Flue Gas Treatment

The air pollution control system forms an integral part of the plant and will treat all flue gas prior to emission to ensure that emissions meet the stringent EU Waste Incineration Directive (WID) (2000/76/EC) standards.

The flue gas treatment in the proposed facility will be a “dry” system, which will operate by injecting hydrated lime and activated carbon into the flue gases to control the pollutants. The gases are then filtered through a bag type filter, which removes the fly ash, reaction products and excess reagents from them. The treatment will also involve a process called “Selective non-catalytic reduction” (SNCR) to control the release of Nitrogen Oxide (NO_x) gases. The process is a proven and widely used system of pollution abatement and will reduce the emissions from the facility to well within the stringent European emission limits.

Residues collected in the final bag house filter process are collected in hoppers providing up to 3 days of storage.

4.2.5 Residue Handling

The EfW process generates three main waste residues:

- Incinerator Bottom Ash;
- Fly Ash; and
- Metals.

Incinerator Bottom Ash (IBA)

IBA is generated from the grate combustion unit, and amounts to approximately 25% of input material (approximately 75,000 tonnes per annum at Trident Park) The non-hazardous material can be used in concrete and concrete block construction, replacing up to 50% of the aggregate traditionally used.

The proposed incinerator bottom ash recycling facility is 76m long and 27.5m wide and will provide processing and storage capacity for the recyclable aggregate that will be generated by the EfW facility.

The bottom ash material is wet on leaving the EfW and needs to be matured and turned for between 4-6 weeks before it can be processed for aggregate. The facility will consist of maturation and aggregate processing operations that will be carried out within the building to allow the maturation process to occur.

Viridor has entered into initial discussions with building material manufacturers to explore the opportunity for recycling this material.

Fly Ash

Fly ash is the residues of combustion removed from the flue gases of the furnace prior to release into the atmosphere. This ash consists mostly of carbon dust, along with some pollutants, organic compounds and heavy metals. These are removed from the flue gases so that the emissions from the facility are clean prior to release, preventing pollution to the environment. Fly ash represents only about 3% by mass of the waste feedstock (approximately 10,500 tonnes per annum at Trident Park), and is disposed of safely (by enclosed tanker) to a designated hazardous waste landfill.

The need to remove fly ash from the site and transport it to a licensed landfill outwith Wales was a reason for refusal in the previous application. The absence of any licensed hazardous landfill in Wales makes this inevitable at the current time. Technologies are emerging that will allow fly ash to be used in industrial processes, and Viridor has entered into initial discussions with two potential users of the material.

Metal Recovery

Following the combustion of Municipal Solid Waste, metals are separated from the IBA to recover valuable metals for recycling. The quantity of metal that can be recovered from the IBA is generally about 5% (approximately 17,500 tonnes per annum at Trident Park), depending on the waste feedstock, and thus represents a useful opportunity for significant amounts of metals recovery. All metals will be recycled and Viridor is currently in discussions with local recovery companies to carry this out.

4.3 Pre-application Consultation

In advance of the submission of the planning application and associated documents, Viridor has undertaken an exercise to engage with and inform the public of the proposed development of the facility. The objective of the consultation exercise was four-fold:

- to raise awareness of general waste issues in South-East Wales;
- to explain the need for the development at Trident Park;
- to explain the type of facility being proposed at the site; and
- to discuss the environmental issues and concerns associated with a development of this nature.

The consultation exercise involved a number of Initiatives that are summarised below:

- 4,500 leaflets were produced and distributed to key stakeholders and local communities of Cardiff in August 2008;
- advertising of public exhibitions by means of leafleting and advertisements in local press;
- stakeholder briefing for politicians and members of local community groups;
- media liaison;
- public exhibitions; and

- a dedicated website has been created (www.viridor-consultation.co.uk/cardiff) that includes the entire planning application and ES.

Viridor recognises that public consultation is an on-going process of engaging, responding, adapting and understanding. The actions required are not standardised because they need to be adaptable to individual sites and particular circumstances.

In the case of Trident Park, the issues that have been raised during the consultation exercise to date have fed into the EIA process and have been reflected in the final proposals. It is Viridor's intention to continue to be pro-active with statutory consultees, strategic and community stakeholders throughout the application determination process. In the event that planning permission is forthcoming, this interaction and engagement will continue throughout the construction process and the commissioning and operational phases.

5.0 ENVIRONMENTAL IMPACT ASSESSMENT

Environmental Impact Assessment (EIA) is a process intended to ensure that permission for development, which may have significant effects on the environment should be granted only after prior assessment of the potential environmental effects of such development has been carried out. The assessment has been carried out on the basis of the specification for the plant, supplemented by information received following consultation with various consultees. The information provided by the developer is included within the Environmental Statement (ES). In the case of Trident Park the ES includes assessments on the following topics:

- Air Quality and Health;
- Landscape & Visual Impact;
- Transportation;
- Noise;
- Ground Conditions;
- Water Environment;
- Nature Conservation;
- Cultural Heritage;
- Socio-Economic Assessment;
- Amenity; and
- Carbon Footprint.

The following section summarises the results of the assessments and the measures taken to reduce any impacts.

5.1 Air Quality & Human Health

Assessments of the air quality and health effects associated with the proposed development have been undertaken. The Facility has been specifically designed to minimise the level of emissions to the atmosphere, both internally through design of the plant, and in terms of the stack height. Any emissions to air are required to meet stringent standards included in the European Union Waste Incineration Directive (WID).

The potential impacts to sensitive community and ecological receptors have been assessed utilising two separate computer dispersion models in accordance with good practice. The impact of traffic associated with the Facility on air quality has also been assessed together with the impacts of odour.

The most potentially significant pollutants emitted from the process are nitrogen dioxide (NO_2) and sulphur dioxide (SO_2). For all pollutants regulated under the Waste Incineration Directive, the predicted worst-case contributions from the Facility are classed as being not significant. The development proposals do not, therefore, conflict with any national, regional or local policies in respect of air quality.

The deposition of metal and dioxin contributions from the Facility to identified areas where people might be affected has been calculated using computer modelling. The result of the health assessment has demonstrated that none of the chemicals associated with the EfW will exceed the relevant limits. Therefore the identified levels of exposure are not considered to pose any significant risk to the community.

Contributions of air pollutant concentrations and deposition from the Facility to designated ecological sites have also been calculated based on modelling results and compared against relevant critical levels and critical loads. The proposed effects on the vegetation and ecosystems are not considered to be ecologically significant.

The conclusion has been reached that the proposed facility will not have an adverse impact on air quality or human health in the area.

5.2 Landscape and Visual

A comprehensive landscape and visual impact assessment has been carried out to consider the impact of the development on the area. This assessment process has influenced the design, which is considered to be an important element of the scheme. The high-quality design of the proposed Trident Park facility has sought to reflect the site's location between the industrial area of South-East Cardiff, and the commercial area of the Cardiff Bay redevelopment. The results of this design process are shown on Figure NTS 3.

The site is located within an industrial area, adjacent to the core regeneration and historic City centres of Cardiff. The sensitivity of the area and the local visual amenity is considered to be low on account of the nature of the surrounding uses and the scale of development. There are no landscape designations within close proximity of the site: the Wentloog Levels are some 6km to the east.

The key issues considered include views from the following:

Residential Properties: Due to the enclosed and essentially flat nature of the topography of the main settled areas of the study area, potential views of the development from residential properties will be limited. The building and/or stack will be visible from a small number of residential locations.

Transportation Routes: None of the railways or main roads assessed will experience significant visual effects as a result of the proposed development.

Recreational Routes: The majority of the main footpaths and cycleways in the study area will be shielded from potential views by intervening topography, buildings and/or vegetation, or are sufficiently distant from the application site to mitigate potential residual effects.

In general terms, landscaping within the site will reduce any potential landscape and visual impacts from short range. The proposed landscape treatment includes a series of connecting but distinctive landscape zones. In the northern half of the site, where site weighbridges and road infrastructure dominate, the landscape treatments are more informal and naturalistic, and include extensive perimeter planting of native tree and shrub species, and open areas of grassland. The southern part of the site will be landscaped to reflect and enhance the office and parking areas of the site.

Based on the findings of the assessment and its compliance with current national, regional and local landscape policy, the proposed EfW is considered to be appropriate and acceptable within the current landscape in and around the application site.

5.3 Traffic and Transportation

A Traffic Assessment (TA) has been undertaken to consider the impact of the proposed development on the surrounding road network. The Assessment has also considered the potential of the site to accommodate rail transport and the potential to increase the use of public transport in the area.

In the context of the existing and forecast traffic flows, the additional trips associated with the construction phase of the EfW development will represent a worst case increase of 9% over the baseline situation. Although the percentage increase of traffic during the construction phase exceeds Cardiff Council's target of 5%, this will be a temporary increase for a short period during the most intensive phase of construction, and a Travel Plan has been prepared to set out the framework for reducing the amount of road travel to the site.

During the operational phase, the TA has concluded that the facility will generate approximately 80 additional 2-way trips on the local highway network during the morning peak and some 64 trips during the evening peak. These figures are based on a number of assumptions relating to the types of vehicle used, their source and the trip distribution. In the context of the existing and forecast traffic flows, the additional trips generated by the EfW facility and its associated activities represent an increase of just 3%.

Since the previous application was submitted, additional development in the Ocean Park area has resulted in a need for minor improvements to be made to the Ocean Way/Glass Avenue roundabout. All of this improvement will take place within Highways Authority land.

In addition, consideration has been given to the transportation of waste by rail to the site. There is currently no direct link between the site and any railway line. There are a number of technical issues associated with transferring and hauling waste from the South Wales area that preclude the use of the railway network.

In conclusion, it is considered that there are no transport related issues that will preclude development at Trident Park, and the need to manage waste from throughout the South East Wales area means that the site is in a sustainable location.

5.4 Noise

This noise assessment has considered the likely noise emission levels from the operation of the proposed EfW against the criterion stipulated by the planning authority that noise from the proposed plant should be no more than 5dB above the background noise level at the closest noise-sensitive receptors.

Noise measurements were undertaken to establish the background noise levels at four noise-sensitive receptors close to the site.

The surrounding environment is currently dominated by a combination of road traffic noise and industrial noise by day and totally dominated by noise from the Tremorfa steel plant during night-time operations. Furthermore, the site of the proposed EfW, itself, is dominated by existing noise emissions from the adjacent oxygen plant. The calculations of noise generated by the Trident Park EfW plant show that emissions are likely to be so low compared to the current noise climate, that this situation will not change.

The assessment has shown that the noise levels likely to be generated by the proposed plant are significantly below the existing background levels and will comply with CC's noise criterion. No further mitigation measures beyond those already proposed at source are considered necessary.

5.5 Ground Conditions

An assessment of the ground conditions has been prepared which included desk based studies, a review of previous investigations, and an intrusive site investigation. The latter included the drilling and digging of a number of boreholes and trial pits to assess the ground and gas conditions to a depth of approximately 20m.

The results of the soils chemical analysis and the human health risk assessment concluded that the soils on site do not contain levels of contaminants that will pose a risk to human health. The site currently poses a low risk in its current context and the long term risks are considered to be low. Measures such as isolating the made ground beneath buildings and an adequate thickness of clean top soils and sub soils for landscaped areas will ensure effective mitigation.

The gas monitoring exercise has recorded significant levels of methane, carbon dioxide and hydrogen sulphide within boreholes and trial pits within the southern and eastern areas of the site. This poses no threat to the public and is a matter that can be addressed by the design and construction methods employed at the site, including the type and design of the foundations and a venting system.

5.6 Water Environment

There are no water features within the site itself, and it does not contain significant quantities of groundwater. The nearest water receptor to the proposed development is Roath Dock, part of the Port complex.

The proposed development area is classified as land that has previously been subject to flooding as defined by Welsh Assembly Government policy. Information provided by the Environment Agency Wales confirms the site is outside of the 1 in 100 year flood plain and therefore unlikely to flood.

The key potential impacts associated with hydrogeology relate to the ground preparation and construction phases of the development. During the construction phase, impacts from initial site preparation, excavation, stockpiling and/or vehicle movements have the potential to disturb contaminated ground and create a pathway for contaminants to enter shallow groundwater. In order to mitigate against this, a construction management plan will be instigated on site to ensure that best practices are employed.

In the long term there is a small increased risk to groundwater and surface water quality from the change in land use. This may occur from contaminated runoff from the lorry/car parks or the waste handling/storage area etc. Mitigation against this will take the form of a Sustainable Urban Drainage scheme (SuDs) to include:

- the application of sedum (green) technology on the roof of the office/visitor centre block;
- source control measures including rainwater harvesting for re-use within the facility;
- infiltration devices to allow water to soak into the ground, including individual soakaways and communal facilities;

- filter drains and porous pavements to allow rainwater and run-off to infiltrate into permeable material below ground and provide storage; and

- basins to hold excess water after rain and allow controlled discharge that avoids flooding.

The design of the scheme, allied with the mitigation measures will result in a negligible impact on the water environment.

5.7 Ecology

The site does not accommodate any species or habitat of nature conservation value.

While there are no statutory designated sites within the application site itself or its immediate vicinity, at its nearest point, the site lies within approximately 500m of the Severn Estuary. The Estuary is of national and international importance due to the presence of extensive areas of intertidal habitats (eg, mudflats, sand banks, rocky platforms and saltmarsh). The estuarine fauna include internationally important populations of wintering and passage waterfowl; invertebrate populations of considerable interest; and large populations of migratory fish, including the nationally rare and endangered Allis shad, a member of the Herring family. The estuary has a diverse geological setting and a wide range of geomorphological features, especially sediment deposits.

The potential impact of emissions from the facility on the designated features associated with the Severn Estuary has been assessed. The modelling undertaken in respect of air quality has considered the potential for the key emissions of: nitrogen oxide; sulphur dioxide; ammonia; acid deposition; and eutrophication (nitrogen deposition) and the overall conclusion reached, in respect of each determinant, is that the impact is not significant.

5.8 Archaeology and Cultural Heritage

The Trident Park site has been extensively disturbed by development over a period of at least 120 years. The potential exists for the foundations and groundworks associated with the propose scheme to have an impact upon peat buried beneath the existing 4m of made ground.

In order to ensure that any disturbance to the peat is minimised, a detailed programme of archaeological direction and investigation is proposed.

5.9 Socio Economic Assessment

A qualitative assessment has been undertaken to consider the impact of the facility in terms of employment, economic impact and social implications.

The assessment considered employment, business, and social issues (in the form of a deprivation index) in and around the application site and provided comment where these are likely to be affected by the proposal.

The assessment concluded that the overall impact from the facility would be positive in an area (Splott) that is considered among the most deprived in Wales, and suffered from a 75% increase in unemployment claimants between June 2008 and June 2009.

5.10 Amenity

A review has been undertaken of the potential general amenity implications of the proposed scheme. The issues usually associated with a scheme of this nature include the effects of litter, vermin, general waste handling, traffic, noise, odour and air quality on the local environment.

The assessment considers each of these, whether there is likely to be a potential impact either during construction or operations, and if there is, how that impact can be managed. The design of the facility incorporates a number of elements that will ensure that issues will not arise. In addition, the site will be managed in accordance with good waste management practice in accordance with the terms of the site's Environmental Permit which will be issued by the Environment Agency.

In view of the mitigation measures it is considered that the development will not give rise to any unacceptable impacts in terms of amenity.

5.11 Carbon Footprint

An assessment has been undertaken of the carbon footprint savings that the proposed EfW will make as opposed to the current method of waste disposal in Cardiff: landfill. The modelling of the Carbon Footprint has been based on the Environment Agency's Life Cycle Assessment Tool, and the results indicate that the energy from waste process generates a lower carbon footprint than landfill. The production of carbon is associated with the issue of climate change.

The expected carbon dioxide saving of the Trident Park EfW is based on the potential of the facility to generate electricity and heat, and the recovery of metals and bottom ash from the process. The key element is the energy saving. The proposed generation of the electricity alone will provide over 30% of Cardiff's domestic electricity demand.

The assessment concludes that the treatment of 350,000 tonnes of residual waste through an EfW facility results in an avoided burden of between -44,000 tonnes and -131,000 tonnes of carbon dioxide, depending on whether the facility generates electricity only, or recovers heat (with a suitable industrial or district heating end user), or uses a combination of the two. When compared to landfill (the baseline scenario), an overall carbon saving of between -108,000 tonnes and -196,000 tonnes would be achieved in the year 2013. it can therefore be concluded that the proposed facility will result in a negative carbon footprint, that is, an overall reduction in global CO_2 emissions.

6.0 CONCLUSIONS

This Non-Technical Statement summarises the information submitted in support of a planning application by Viridor Waste Management Limited for an Energy from Waste and recycling facility at Trident Park, Ocean Way, Cardiff. The facility will accept approximately 350,000 tonnes of residual waste each year from residents and businesses across Cardiff and South East Wales.

The Environmental Impact Assessment process has considered the full range of environmental issues as established during an extensive scoping exercise that included both formal scoping with the planning authority, and subsequent engagement with statutory and non-statutory stakeholders. This has been supplemented by the outcome of the formal determination process associated with the previous planning application refused by Cardiff Council in July 2009.

The findings of the EIA for the facility concluded that having taken into account the proposed mitigation the effects of the development are not considered to be significant. The impacts which could be considered to be contentious (landscape and visual, air quality/human health) have been fully mitigated as a result of the iterative design process and through careful consideration of emissions control and abatement techniques and high quality architectural and landscape design.

In respect of air quality, assessments have focused on the principal emissions to air, including:

- Air Quality Strategy and Waste Incineration Directive (WID) Pollutants from the EfW Stack;
- Air Quality Strategy Pollutants from vehicles;
- dust and litter emissions during the construction and operational phases; and
- odours and bioaerosols arising from the waste treatment process.

The findings of the assessment demonstrated that the proposed development will not give rise to significant adverse air quality effects for either human or ecological receptors in either the short-term or the long-term.

In respect of the landscape and visual impact the proposed development is located within an established industrial area and the scale and design of the building have taken into account this location. A high-quality design is proposed to ensure that the development reflects its location and the prevailing style of Cardiff and Cardiff Bay. Additional mitigation is offered in the form of on-site landscaping measures that increase the interest in the appearance and have the potential to enhance nature conservation.

The potential impact of the development on issues such as noise, site conditions, the water environment, nature conservation and cultural heritage, were also subjected to detailed assessments. The conclusion in respect of each of these is that the nature of the development and the design process has ensured that there are no adverse impacts on any of these issues.

With regards to the carbon footprint, the assessment demonstrated that the development will have a negative carbon footprint. This overall reduction in carbon emissions will make a significant contribution to reducing the emission footprint of waste management, especially in comparison to the current waste disposal route.

In terms of other benefits the facility will:

- provide a safe and sustainable alternative to landfill for residual wastes from local home and business, (i.e. left over after recycling And composting has been carried out);
- enable national targets on landfill diversion to be met or even exceeded and therefore costly fines avoided;
- offset the significant economic impact of landfill tax which will otherwise be passed on to local tax payers and businesses;
- result in a significant export of energy to the National Grid (some 30 MW) reducing the need to produce electricity from non renewable (fossil) sources;
- minimise energy use and carbon emissions during construction and operation;
- have the potential to supply heat and power to local homes and businesses which will improve resource efficiency and offset reliance on fossil fuels;
- be in close proximity to waste arisings yet distant (at least 500 metres) from residential properties;
- redevelopment of brownfield land;
- enable the potential energy source to act as a catalyst for future economic growth in the area;
- to provide employment for 50 new and permanent staff and 250 temporary staff during the construction period in an area subject to a significant economic downturn; and
- enable the local economy to benefit from additional employment and be sustained by wages and salaries received and spent in the local economy by people directly employed on the operational side and through the use of local services.

The facility will not have an adverse impact on the environment and will make a significant beneficial contribution to waste management in Cardiff and South East Wales, ensuring that residents and businesses meet their obligations to reduce the amount of waste that is sent to landfill. The urgent need for proven treatment capacity is exacerbated by the imminent closure of Lamby Way landfill site, Cardiff's sole waste disposal facility.

The proposal is in compliance with the intentions of national and local authorities to promote sustainable methods of waste management and the EfW facility proposed at Trident Park will deliver the infrastructure required to drive forward sustainable waste management both in Cardiff and South East Wales as a whole. In taking account of the minimal environmental

impact and the benefits associated with the proposal, it is considered that the planning application should be supported.

Closure

Copies of the complete Trident Park EfW Planning Application, including the Environmental Statement and all supporting information can be purchased in the form of either a hard copy or on a CD.

In order to maximise the availability of the ES, a disk of the contents will be available for £5.00 from the offices of SLR Consulting Limited at:

Fulmar House,

Beignon Close,

Ocean Way,

Cardiff CF24 5HF

(02920 491010)

This office is located within 500 metres of the application site. The entire content of the ES has been be posted on the dedicated web-site (http://www.viridor-consultation.co.uk/cardiff) and can be downloaded free of charge.

The full set of paper application documents will also be available for purchase from the same address as above upon payment of £500.00 (incl. postage).

This Non-Technical Summary is available free of charge from Cardiff Council, SLR Consulting Limited or the web-site.

All cheques should be sent in advance and made payable to SLR Consulting Limited.

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