



**New England Resource Recovery Centre
New England Quarry, Nr. Lee Mill, Devon**

Sustainability Appraisal

APPENDIX 14-1

Viridor

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solutions for today's environment

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1.0 INTRODUCTION

In respect of the proposed development at New England Quarry, Viridor is committed to ensuring that the proposed scheme accords with the general principals of sustainability during the design process, the facility's construction and throughout its operational life.

This report represents an assessment of generic sustainability indicator criteria set out in relevant national and regional policy.

As part of the planning submission Devon County Council has identified that a sustainability assessment is required for this type of development:

All applications should be supported by a statement which sets out, amongst other things:

- the energy efficiency of the proposed development, covering both; operational energy and CO₂ issues and consideration of options for renewable energy;
- the environmental implications of the use of the building materials (and use of recycled materials) proposed in the development;
- use of sustainable drainage systems and water efficiency; and
- use of previously developed sites/existing waste management facilities.

Where appropriate a BREEAM (Building Research Establishment Environmental Assessment Method) rating should also be provided for the built aspect of the development and an initial BREEAM assessment is included at Appendix 4.

1.1 Defining Sustainable Development

One of the key aims of the New England Resource Recovery Centre project is the promotion of sustainability development, which can be defined as:

“...development that meets the needs of the present without compromising the ability of future generations to meet their own needs”¹

1.2 Key principles of Sustainable Development

1.2.1 Fossil Fuels

One of the key principles of Sustainable Development is the reduction of use of fossil fuels for energy and the replacement of these non-renewable resources with renewable sources of energy in order to reduce the effects of climate change in the future. Fossil Fuels are a finite resource and as such cannot be considered sustainable; the burning of fossil fuels for energy also releases carbon dioxide a “greenhouse gas”, into the atmosphere, changing the gaseous makeup of the atmosphere and leading to climate change.

The Carbon Footprint of the Energy from Waste facility has been assessed through a WRATE analysis, the results of which are included within Section 14.

¹ Brundtland 1987

1.2.2 Embodied Energy

Another related issue of significance is that of embodied energy, the energy which is encapsulated within a building or development, through its design, materials transportation and construction. As well as relating to energy, the concept of sustainability in construction also relates to the use of materials in construction, promoting the wise-use and conservation of finite materials such as mined materials minerals and the conservation of renewable materials such as timber.

1.2.3 Effective Waste Management

Effective waste management can slow the depletion of finite resources through aggregate recycling and other initiatives and ensure the indefinite sustainability of renewable resources through forestry management.

1.2.4 Reduction of Waste

Reduction of waste is another key principle of sustainable development. The primary focus is the National Waste Strategy, which sets the context for consideration of waste management through the development plan framework. The hierarchy of waste management technique is:

- reduction of waste at source;
- reuse;
- recovery (including recycling, composting and energy recovery); and
- environmentally sensitive disposal.

For sustainable development to be increasingly successful, waste management should move increasingly up the list towards the first option.

1.2.5 Considering Pollution

Pollution is also a key issue which is encapsulated within sustainable development, from the local scaled pollution caused by toxics materials used for construction, which can have a negative impact on human health, to the global scale issues of ozone depletion in the atmosphere due to the release of certain chemicals into the atmosphere. As is already widely documented, this depletion of the ozone layer poses significant risks to human health.

1.2.6 Efficient use of land

The efficient use of land to meet the demand of modern society with minimal impact on the natural environment; for example by situating employment within walking distance of residential areas to minimise car use or by situating waste management facilities close to the waste source to minimise transport emissions; is also a key objective of sustainable development.

1.2.7 Biodiversity

Biodiversity is a term used to describe the variety of life present within an area, and is key to the conservation of the natural environment. The retention of the delicate balance of flora and fauna is promoted by sustainable development in recognition of the role that ecological systems play in the "life support" systems. An example of this is the management of the atmosphere oxygen-carbon dioxide balance of plant life. Biodiversity is also considered to be an important aesthetic, economic and social value embedded within today's society.

1.2.8 Social and Economic

Social and Economic concerns are also implicit within the concept of sustainable development, these include the provision of essential services, the promotion of social inclusion and the justification of development through conformity with social, cultural and economic needs, while ensuring that ecological objectives are not compromised.

2.0 STRUCTURE OF SUSTAINABILITY APPRAISAL

The structure of this sustainability appraisal is set out below:

The Applicant – The sustainability credentials of the principal developer are considered in respect of management systems and operational record.

This provides the background against which the likelihood of compliance with sustainability indicators and criteria can be appropriately assessed;

Policy – consideration is given to the legislative and planning content within which the SA is undertaken;

The Proposal – full details of the scheme are included in the planning application and associated documentation. Within this report, a synopsis of the scheme is provided as it relates to sustainability issues;

BREEAM Review – A provisional BREEAM: Industrial Assessment was undertaken and is submitted at Appendix 2. A review is hereby included in relation to the key sustainability indicators;

Sustainability Indicators – Sustainability Criteria have been used for comparison in order to examine the proposed development at National and Regional Level.

3.0 THE APPLICANT

The consideration of sustainability in any development is heavily dependant on the key operating company. The manner in which the design, construction and operation of a major scheme is undertaken, implemented and managed sets the standards by which environmental issues are taken into account.

In respect of the New England Resource Recovery Centre development proposals, responsibility for the plant ultimately falls to Viridor. Viridor have assembled a team that has incorporated sustainability indicators and targets as a fundamental and integral part of the design process.

3.1 Environmental Management

Viridor has a company mission statement that states:

“Viridor has two primary environmental aims. The first is to maximise efficient use of resources through re-use, recycling and recovery where economically and environmentally beneficial. The second is to safely and efficiently dispose of the wastes produced by householders and businesses in our society in a manner that protects the environment and human health².”

The importance of continuous monitoring and improvement in assessing and minimising negative environmental impacts and maximising positive ones is recognised by Viridor. The company have been instrumental in developing the performance indicators of the waste industry as proposed by the Green Alliance, and report their performance against these annually, in addition to their own formal Environmental Management System.

Viridor's sites are registered to EN ISO 14001, the highest international standard for environmental management, this ensures that the company is working to best practice standards in environmental management and is also implementing a programme of continual improvement in environmental performance, providing assurance to customers and communities alike.

The Pennon Group, Viridor's parent company also produces an annual report detailing its impacts, both positive and negative, on the natural and social environment. The 2007 report provides information both on Pennon group as a whole, as well as Viridor's performance in the areas of corporate responsibility in social and environmental issues.

Viridor is fully supportive of the Government's aim to move towards more sustainable waste management through waste minimisation, reuse, recycling and energy recovery. It is also committed to the concept of corporate environmental and social responsibility. Specifically, Viridor's aims are as follows:

- regularly monitor and review performance and set clear objectives and targets to ensure continuous improvement in health and safety, environmental and welfare performance and quality service provision;
- reduce negative impacts on the environment and augment positive impacts whilst taking all necessary steps to prevent pollution;

² www.viridor-waste.co.uk

- identify and implement health and safety, environmental and welfare service quality improvement schemes to the benefit of employees, customers and stakeholders wherever possible;
- use energy and natural resources more efficiently and encouraging the development and use of alternative fuels and recycled products;
- promote and encourage waste awareness and prevention, re-use, recycling and good practice;
- all operating units will have appropriate arrangements and resources in place to implement an Integrated Management System (IMS) with clear management responsibilities and documented procedures;
- identify and comply with all applicable legislation, including environmental, health and safety and other requirements including recognised industry best practice;
- require all employees to be aware of their responsibilities for health and safety, environmental and quality issues;
- proactive consultation and dialogue with the public, stakeholders and employees on the company's environmental, health and safety performance, and service quality;
- continue to support and serve the wider community in which the company operates and the socio-economic groups from which it employs. This includes supporting employees in parish, local or regional government; trusteeships or governorships of local and regional bodies, trusts and institutions; charitable or voluntary work and supporting the armed services (territorial or reservists); and
- effectively communicating this policy to all employees, external resources, members of the public and other stakeholders.

This Policy Statement and IMS are periodically reviewed in order to ensure continued suitability and to identify and fulfil opportunities for improving its effectiveness.

Through these specific objectives, Viridor works closely with its public and private sector partners to help achieve the government's targets in respect of waste management and sustainability targets as set out in national, regional and local policies.

4.0 CONSIDERING POLICY

4.1 International Policy

The following International policies provide the overarching European framework for waste to the United Kingdom;

- European Community (EC) Landfill Directive 199/31/EC; and
- EC Framework Directive for Waste 75/442/EEC as amended by 91/156/EEC

4.2 National Planning Policy

The following national Planning Policy has been taken into consideration;

- Planning Policy Statement 1 (PPS1): Delivering Sustainable Development 2005;
- Planning Policy Statement 7 (PPS 7): Sustainable Development In Rural Areas 2004;
- Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation 2005;
- Planning Policy Statement 10 (PPS10): Planning for Sustainable Waste Management 2005;

- Planning Policy Statement 12 (PPS12): Local Development Frameworks 2004;
- Planning Policy Guidance 13 (PPG13): Transport, 2001;
- Planning Policy Guidance 15 (PPG15): Planning and the Historic Environment 1994 ;
- Planning Policy Guidance 16 (PPG16): Archaeology and Planning 1990;
- Planning Policy Statement 22 (PPS22): Renewable Energy, 2004
- Planning Policy Guidance Note 24 (PPG24): Planning and Noise, 1994;
- Planning Policy Statement 25 (PPS25): Development and Flood Risk; and
- Waste Strategy (2007).

4.3 Regional Planning Policy

The following Regional Policy has been taken into consideration;

- Regional Planning Policy Guidance for the South West (RPG10);
- Devon Structure Plan (2004); and
- Draft Regional Spatial Strategy for the South West (RPS10) (2006-2026)

4.4 Local Planning Policy

The following Local Policy has been taken into consideration;

- The Devon County Waste Local Plan (June 2006);
- South Hams Local Plan (April 1996); and
- South Hams Core Strategy (December 2006)

5.0 THE PROPOSAL

This planning application has four main elements to it and as such each one is described in turn:

- Energy from Waste Facility with the ability to handle 275,000 tonnes per annum of municipal and commercial and industrial waste (tpa) with associated offices, visitor centre, waste sorting building, welfare and parking facilities;
- Incinerator Bottom Ash Facility (IBA), (62,500 tpa) treatment and recycling facility;
- Non Hazardous Landfill (40,000tpa);
- New Access Road linking in to the A38 at Lee Mill;

Auxiliary and support infrastructure which, in addition to the process plant, make up the EfW facility include:-

- Bridge Crossing over River Yealm;
- Weighbridge: for monitoring and recording all wastes coming onto and leaving the site;
- Workshops;
- Offices and visitor centre;
- Chimney Stack;
- Waste sorting building;
- Transformer House: contains the metres, circuit breakers and step-up transformers necessary to export electricity; and
- Storage bays

The application site is located at New England Quarry sandwiched between the settlement of Lee Mill to the north, and the settlement of Yealmpton to the south.

5.1 Sustainable Development in Design

The concept of sustainable development is intended to bring into consideration the relationship between environmental, social and economic systems. It is a philosophy of approach and many of the principles and approaches inherent in sustainable development are already adopted in the design of the proposed Facility at New England Quarry.

Careful Incorporation of design measures which increase the sustainability of the development can therefore improve the environmental and socio-economic performance of the development, and thus increase the quality of life for the surrounding communities.

This sustainability appraisal explains how the proposed Energy from Waste facility meets the recommended guidance regarding sustainable development. This compliance is the result of the integration of sustainable principles into the design of the facility from the inception of the project along with ongoing adjustments and modifications resulting from consultation between Viridor and the environmental assessment and design teams. Suggestions and comments have been fed into the design, with the aim of improving its performance against these published criteria.

5.2 Site Selection

The preliminary phase of the site consideration and identification process has reviewed the potential for locating a sub-regional residual waste facility within the entire South West Devon Partnership area of South-West Devon, Plymouth and Torbay. This element of the assessment has involved an initial appraisal of those sites that are known to be potentially available for B2 suitable use within the region and considers each in general environmental

and amenity terms. The refined list of sites was subjected to a selection process based on a scoring matrix. The principle of this system has been based on the application determination criteria set out in PPS10, and applies a scoring mechanism to the following issues:

- Proximity to Housing;
- Proximity to Road Network;
- Proximity to Rail Network;
- Existing Land Use;
- Ecology;
- Air Quality;
- Water Environment; and
- Heat User

The results of the site selection are included in Appendix 14-2.

5.3 Site Description

The application site includes the mothballed New England quarry to the west of the Yealm. This includes the old weighbridge area and site access (circa 38m AOD) point close to Popple's Bridge which lies on the banks of the Yealm close to the rivers flood level. Above this area and to the north on the upper valley side, accessed by a steep narrow haul road is the main quarrying void, consisting of a water filled void (water level circa 49m AOD) and a series of semi circular quarry faces and benches rising to approximately 77m AOD.

To the east of the quarry void the land falls steeply down to the River Yealm, this retains its natural woodland cover along its banks. While to the west of the quarry void the land merges with the dissected plateau above the river valley, with a high spot of 81m AOD. North of the quarry void (at an average level of 60m AOD) is a large, un-vegetated, and gently sloping area formerly used as a stocking area. Scrub vegetation has colonised the edge of the old stocking area, merging with the surrounding woodland. Beyond the scrub areas lies the site boundary.

5.3.1 Access

A new access road is proposed into the site from a newly created from the A38 which runs past the site north of the proposed development. The proposed new access road is a combination of 8m width from the Lee Mill interchange, to the woodland then narrowing to 4m width through the dense woodland prior to the bridge where it becomes slightly wider (the bridge will have a single crossing). The proposed access road length is 1,200m long.

5.4 Project Development

The site will be developed in four phases, comprising of an initial phase of construction, a phase of site landscape works and initial landfill development, a phase of operational landfill, and a final phase of landscape completion and restoration.

Phase 1 would take approximately 30 months and would involve the following components:

- construction of the access road from the proposed northern access point, around the edge of the landfill area to the east of the River Yealm, and south towards the EfW site;
- construction of the proposed bridge across the River Yealm and extension of the access road up to the EfW platform area;

- the regrading of the old stock pile area to form a roughly level platform for the EfW construction;
- extension of the EfW platform into the existing quarry void; and
- construction and commissioning of the EfW.

Phase 2 will include the gradual infill of the landfill void and the contiguous operation of the EfW.

Phase 3 would include the final capping and restoration of the landfill void including seeding and planting. Extensive details of this are included within the Landscape ES Section (See Volume 3) as well as drawings located in Volume 2.

6.0 PRE BREEAM ASSESSMENT WORK

To ensure compliance with best practice and Viridor's own corporate responsibility procedures, the company intends that the design, construction and commissioning of the EfW facility will be as environmentally sustainable as is practically possible. To this end Viridor have elected to implement the Building Research Establishment's Assessment Method for Industrial Buildings (BREEAM: Industrial) to guide the design, ensure appropriate construction techniques are employed and to provide a quantitative assessment of the finished building's performance with regard to environmental sustainability.

The BREEAM: Industrial rating assesses the environmental sustainability of a development in nine key technical areas:

- management of the development;
- health and well-being of the occupants;
- energy efficiency;
- transport considerations;
- efficiency of water consumption;
- selection of appropriate construction materials and their responsible sourcing;
- waste management;
- efficiency of land use and ecological concerns; and
- the minimisation of pollution.

6.1 Summary of Pre BREEAM Industrial Scores

The report conducted constitutes an assessment of the probable outcome of the BREEAM: Industrial assessment and is based upon such knowledge of the current design proposals as is available. The report does not constitute a formal assessment and, whilst likely to be an accurate estimate, the final score is liable to change.

BREEAM: Industrial assesses the environmental sustainability of a development in nine key technical areas: management of the development; health and well being of the occupants; energy efficiency; transport considerations; efficiency of water consumption; selection of appropriate construction materials and their responsible sourcing; waste management; land-use and ecological concerns; and the minimisation of pollution.

The BREEAM: Industrial assessment awards ratings to developments in six brands, Unclassified, Pass, Good, Very Good, Excellent or Outstanding, according to their points score, as follows.

Table 1-1 BREEAM Ratings

Rating	Score
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45

Rating	Score
Pass	≥ 30
Unclassified	<30

Table 1-2 Initial BREEAM Industrial Assessment.

Technical area	Points achieved
Management	10.80
Health and Wellbeing	10.38
Energy	17.42
Transport	3.64
Water	5.00
Materials	5.68
Waste	6.43
Land Use and Ecology	4.00
Pollution	7.78
Total:	71.13

6.2 Conclusions

It should be noted that the Scoping Opinion required the proposal to strive towards an Excellent rating. This initial assessment has concluded that a realistic score would be Excellent. As the scheme progresses, is constructed and becomes operational, scores may be amended that improve the environmental efficiency. Similarly, mitigation measures may be introduced that increase the scores. The purpose of the BREEAM system is to respond to changes in construction and mitigation techniques, and the updating of the BREEAM score will reflect this.

With regard to BREEAM, there is no statutory obligation to consider it or to achieve a certain rating. Local authorities are within their rights for development to achieve a certain grade but the scheme is independent and run by the Building Research Establishment as an aspirational, and essentially voluntary, target for developers

7.0 NATIONAL SUSTAINABILITY CONTEXT

7.1 Sustainability Guidelines and Indicators

Sustainability criteria have been used for comparison in order to examine the proposed development. These indicators have been sourced from:

- National indicators for sustainable development as stated in One Future – Different Paths;
- UK Government sustainable development strategy, Securing the Future

The indicators found in the national guidance above are not site-specific, and provide a broad synthesis of the government guidelines currently in place. The indicators that have been identified in these documents are integral to the communication of sustainable development, they help to review progress through comparison with baseline figures, highlighting where the challenges are, as well as helping people to understand what sustainable development means globally, nationally, regionally and locally in their communities and for themselves as individuals.

In the policy above, the proposed development at New England Quarry was compared against the guidelines and its compliance with the principles within each of these was reported. The results of this assessment are presented in tabular form in the remainder of this report.

7.2 Scope of the Report

The remainder of this report details the compliance of the proposed development against the sustainability indicators put forward on a national, regional and local level through the development plans detailed earlier. The sustainability has been assessed based on consultations with Viridor along with information published by the Applicant through their environmental management system, as well as information sourced from the results of technical assessments carried out as part of the Environmental Impact Assessment (EIA) reported in various chapters of the Environmental Statement.

Where specific measures are proposed by Viridor in order to promote sustainable development at the proposed site, and these relate to indicators in policy documents, reference to these measures is made. Where specific information is not available, information on the existing operations of the Applicant is provided to show the envisaged compliance to indicators. Where the development is deemed not to have any impact on the promotion of a specific indicator, this is also mentioned.

This appraisal aims to demonstrate how sustainability principles have been incorporated into all aspects of the proposed facility, including design, specification, construction and operation.

7.3 Considering Planning Policy Statement 1 (PPS 1)

PPS1 outlines that planning shapes the places where people live and work. It also sets out that sustainable development is the core principle underpinning planning.

The approach to sustainable development contained within PPS 1 is set out below:

- promoting national, regional, sub-regional and local economies;
- promoting urban and rural regeneration;

- promoting communities which are inclusive, healthy, safe and crime free;
- bringing forward sufficient land of a suitable quality in appropriate locations to meet the needs for housing;
- industrial development, retail, commercial and leisure and recreational development;
- providing improved access for all to jobs, health, education, shops, leisure and community facilities, open space, sport and recreation;
- focusing developments that attract a large number of people in existing centres;
- reducing the need to travel and encouraging sustainable patterns of transport development promoting efficient use of land;
- enhancing and protecting biodiversity, natural habitats, the historic environment and landscape and townscape character; and
- addressing the impacts of climate change, managing pollution and the safeguarding of natural resources

In the context of the above, PPS1 states that planning authorities should demonstrate how their plans integrate the various elements of sustainable development to achieve outcomes which enable social, environmental and economic objectives to be delivered together..

7.4 UK National Indicators for Sustainable Development

7.4.1 *Securing the Future (2005)*

The UK Government sustainable development strategy, *Securing the Future (2005)*, outlined a set of national indicators, which are crucial for the monitoring of the success of the policy, and the progress that is being made towards the targets set. These indicators can be used for monitoring specific issues such as greenhouse gas emissions and unemployment figures, as well as creating overviews of progress for broad priority areas.

The Government strategy identifies 68 national indicators covering a wide range of issues, ranging from those of everyday concern such as health, housing, jobs, crime, education and the local environment, to issues on a more global scale such as climate change and energy, sustainable consumption and production, protecting our natural resources and enhancing the environment and creating sustainable communities and a fairer world.

Twenty of these indicators are grouped into a subset branded “UK Framework Indicators” shared by UK Government and the devolved administrations in Scotland, Wales and Northern Ireland.

The Twenty Indicators are:

- Greenhouse gas emissions;
- Resource use;
- Waste;
- Bird populations;
- Fish stocks;
- Ecological impacts of air pollution;
- River quality
- Economic output;
- Active community participation;

- Crime;
- Employment;
- Workless households;
- Childhood poverty;
- Pensioner poverty;
- Education;
- Health inequality;
- Mobility;
- Social justice;
- Environmental equality;
- Well being

Securing the Future also supports the development and effective use of renewable energy where they are demonstrated to be economically attractive and environmentally acceptable; this includes Energy from Waste. The document also identifies the need for the planning system to take account of new waste management technologies, including energy recovery from waste.

7.5 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a key component of sustainable development, it aims to assess the effect that a plan or programme is likely to have on the environment prior to its implementation. SEA establishes important new methods for protecting the environment and extending opportunities for participation in public body decision-making.

8.0 REGIONAL SUSTAINABLE CONTEXT

Regional versions of the UK Government's indicators of sustainable development were first published on 13th December 2005 to help provide a perspective of sustainable development in each region.

To support the new UK Government Sustainable Development Strategy "Securing the Future" (2005), there is a suite of 68 national sustainable development indicators.

The application site falls within the South West region of the United Kingdom.

8.1 The Regional Sustainability Framework (RSF)

Regional Sustainable Development Framework (RSDF) for the South West is currently being reviewed and updated.

The existing Regional Sustainable Development Framework, "A Sustainable Future for the South West" was produced in December 2000 by Sustainability South West, on behalf of the Government Office for the South West and endorsed by the South West Regional Assembly.

The framework contains 15 crosscutting themes, each with objectives and a suggested indicator. The themes are:-

1. Health and Well-being
2. Economic Development
3. Climate Change
4. Development and Planning
5. Regional Inequality and Access
6. Sustainable Communities
7. Biodiversity and Landscapes
8. Learning and Skills
9. Transport
10. Natural Resources and waste
11. Business and Work
12. Culture and Heritage
13. Food and Farming
14. Tourism
15. Coast and Maritime Environment

The framework also contains a checklist based on 15 principles of sustainability, such as local needs, safety and democracy. This checklist can be used to appraise projects, policies and decisions.

As such this checklist has been used at the application site to successfully appraise from a sustainability standpoint.

8.1.1 Indicators

Indicators are an important monitoring and reporting tool and can help assess progress towards sustainable development. Headline indicators are used to give a broad overview and additional indicators can be used to give a higher level of detail.

Indicators generally relate to one of the three pillars of sustainable development, namely social progress, economic growth and environmental protection although they can relate to more than one issue – for example traffic volume.

For each theme within the Regional Sustainable Development Framework progress is being measured using a headline indicator. The South West Regional Observatory studies have been used to analyse data and will be working to identify suitable alternatives where data is currently unavailable at a regional level.

The indicators have been used to assess the proposed development at New England Quarry and to ensure the project is in compliance with the notion of sustainability (See Appendix B)

9.0 LOCAL SUSTAINABILITY DEVELOPMENT CONTEXT

The following documents have been taken into consideration with regard to sustainability in the local context:

- Strategic sustainability appraisal of Torbay and South Devon Joint Sub Regional Study (September 2005);
- South Hams Sustainability Appraisal
- Torbay LTP Sustainability Appraisal
- SWRSS Strategic Sustainability

The following key objectives have emerged from the above documentation:

- Ensure access to learning, training, skills and knowledge for all
- Reduce the crime and the fear of crime
- Promote stronger more vibrant communities
- Increase access to and participation in cultural activities
- Improve resident and visitor access to local services and facilities
- Provide the required infrastructure and services in line with the rate of population increase

- Minimise pollution (land, water, air, light, noise)
- Reduce non-renewable energy consumption and 'greenhouse' emissions
- Keep water consumption within local carrying capacity limits (taking account of climate change)

- Minimise environmental impacts of mineral extraction

One of the important factors in managing waste is to ensure the carbon emissions from the various processes are minimised. A modern EfW plant can reduce carbon emissions by up to 40% relative to landfill.

Using waste to produce heat and electricity provides a reliable and environmentally sustainable local solution to help meet the future energy needs of the community.

10.0 CONCLUSIONS

The development at New England Quarry has been assessed thoroughly against sustainability principles at a national, regional and local level, this assessment has found that the development is able to comply with the principles and objectives of sustainable development, and contribute towards them in many ways. The planning and design of the facility have incorporated key principles of sustainability from the outset, and best practice and guidance have been used to aid aspects of the facility's design.

To ensure that the construction and operation of the facility takes place in as sound a manner as possible, the development will be continuously monitored from the outset of construction and throughout its operational life to ensure that the principles and objectives of sustainability are adhered to and that the environmental performance of the facility is maximised.

10.1 The Nature of the Facility

The facility is designed as a Waste Management facility, by its nature it contributes to sustainability principles in a number of ways. Firstly, the unsustainable practice of landfilling waste, particularly biodegradable waste, will be significantly reduced or halted, reducing greenhouse gas emissions significantly through avoiding methane release from landfill.

The development will reduce the dependence on landfill whilst ensuring that adequate landfill capacity is maintained and that energy in the form of landfill gas is recovered and utilised.

Secondly, the production of electricity from waste will reduce demand for non-renewable fossil fuels in the area, reducing releases of greenhouse gases further as a result of the extremely high efficiency of the Energy from Waste Facility.

Waste produced by South West Devon is currently disposed of mostly by landfill would also be moved up the "waste hierarchy", representing an increase in sustainability from "environmentally sensitive disposal" in landfill to "energy recovery" by using the combustion of the residual waste from the local area to produce electricity.

10.2 Site Design

The facility has been designed with sustainability principles at the forefront of the design process, where possible, sustainably sourced, recycled and recyclable materials have been specified, and principles such as waste minimisation and local sourcing of materials will also be adhered to. These will be done in an effort to reduce the "embodied energy" of the development, the energy associated with the sourcing, manufacture and construction of a facility. Where specialist materials are required, such as insulants and refrigerants, these will be manufactured using materials with minimal environmental impact.

The application site has been designed such that it does not affect the surrounding area adversely, with measures such as a Sustainable Drainage System (SuDS) incorporated into the design to avoid runoff from the site into nearby surface and ground water.

The overall design is to provide a final landform that is appropriate to the local landscape character and maximises the efficiency of the EfW development.

10.3 Environmental Management

Environmental management of the construction and operational period of the development will be conducted in line with highest international standards and best practice guidelines, in

accordance with the company policy and existing operations of Viridor Waste Management and the Pennon Group. The management scheme employed will include a number of schemes including the highest recognised international standard, ISO 14001, the Considerate Employers Scheme as well as other individual policies adopted by the contractors responsible for construction and other aspects of the facility.

Waste minimisation principles will be used during construction, as well as the recycling of materials left over following construction. Pollution from the facility to air, water and land will be avoided through good practice on site, and by accordance with mitigation and risk avoidance recommendations laid out in the Environmental Statement. Any waste resulting from the construction of the development that is not re-useable or recyclable will be treated and disposed of according to guidance and best practice methodologies. The site will be managed such that levels of noise, traffic and other potential annoyances will be kept within limits prescribed by relevant guidance and legislation at the nearest sensitive receptors. Biodiversity in the area will be ensured not to be affected by the development, and due to sensitive landscaping, is hoped to be improved on the site. All aspects of the environmental impact of the development, both in construction and operation, have been assessed as part of the Environmental Impact Assessment, the results of which are documented in their relevant chapters of the Environmental Statement.

Appendix A – Compliance of proposed development with national sustainability indicators

Aim	Indicator	Compliance of proposed development at NERRC with Indicator
Contributing to Sustainable Development at a global level	Greenhouse gas emissions;	<p>The EfW will divert waste away from landfill;</p> <p>Landfill gas will be recovered and used to generate electricity; and</p> <p>In compliance with the waste hierarchy</p>
A diverse competitive , high added value economy	Resource Use;	<p>The facility will cause a reduction in non-renewable resource use, through providing electricity, offsetting traditional fossil-fuel fired means of generating power;</p> <p>Recycling bottom ash from the EfW will also reduce the speed of depletion of limited mineral reserves.</p>
Action on our Environment	Waste;	<p>The issue of diminishing landfill capacity in the area will be addressed as well as the problems associated with greenhouse gas release from landfilled biodegradable matter. The facility will help South West Devon achieve landfill diversion targets and avoid an increase in Landfill Tax.</p>
Action on our Environment	Bird Populations/Fish Stocks	<p>The proposed restoration will provide long term habitat replacement;</p> <p>A comprehensive Ecological study has been undertaken as part of the Environmental Impact Assessment, the results of which are included in the Environmental Statement.</p>

Aim	Indicator	Compliance of proposed development at NERRC with Indicator
Action on our Environment	Ecological impacts of air pollution, air quality	<p>A full assessment of the potential impacts of air pollution from the facility has been undertaken. The emissions to the air from a facility such as the EfW proposed are highly regulated by the European Waste Incineration Directive, and as such, through effective emissions scrubbing technology.</p> <p>It is predicted that the effect of the facility on air quality and ecology will not be significant.</p>
Action on our Environment	River Quality	<p>A full assessment of the current condition of and potential effects to the ground and surface water on the site has been carried out, and effective mitigation measures to prevent contamination have been proposed. As a result of this it is predicted that the development will have no effect on the quality of nearby water resources and in particular the River Yealm.</p>
A diverse, competitive, high added value economy	Economic Output	<p>The Proposed development will improve the economy of the area, by both providing a number of jobs for the area and as an electricity supplier. Also it is expected that Council-Tax payers money will be redirected to more beneficial purposes through the reduction in landfill tax costs faced due to the facility diverting waste away from landfill.</p>
Action on social justice that tackles poverty	Active Participation Community	<p>Viridor undertook a number of public exhibitions at which</p>

Aim	Indicator	Compliance of proposed development at NERRC with Indicator
		<p>members of the public had the opportunity to find out more about the proposals and share their views with the Viridor team.</p> <p>The aim of the exhibitions has been to present the proposed development to the public and involve the community on the decision making process before submission of the planning application.</p>
Action on Social Justice that tackles poverty	Crime	No effect is predicted
Action on Social Justice that tackles poverty	Employment	<p>New jobs will be created during the construction and operation of the EfW, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.</p>
Action on Social Justice that tackles poverty	Childhood poverty / Pensioner Poverty/ Social Justice	<p>No effect on this indicator is predicted, other than the effect of a slightly improved economy due to the development.</p>
A Place which values its children and where young people want to live	Education	<p>Viridor is committed to providing education to local communities on the nature of its activities, within the proposed facility; there will be a visitor centre which will provide an educational experience with regard to sustainable waste management.</p>
Supporting people to live healthy and independent lives	Health Inequality	<p>The Human Health Assessment conducted has revealed that no effect on this indicator is predicted, other than the effect of a</p>

Aim	Indicator	Compliance of proposed development at NERRC with Indicator
		slightly improved economy due to the development.
Action on our Environment	Mobility	No effect is predicted
Contributing to sustainable development at a Global Level	Environmental Quality	A high quality design and choice of materials; Landfill landform to ascertain high quality final landscape;
Supporting people to live healthy and independent lives	Well Being	No effect on this indicator is predicted, other than the effect of a slightly improved economy due to the development. This is supported by the Human Health Assessment.

Appendix B - Compliance of proposed development with **regional** sustainability indicators

Cross Cutting Sustainability theme for the South West	Indicator	Compliance of proposed development with sustainability indicator
1. Health and Well Being	Gap in infant and early childhood death and illness between socio economic groups	A human health risk assessment has been prepared Results from generic quantitative risk assessment indicate that indirect, long-term exposure to all persistent contaminants

Cross Cutting Sustainability theme for the South West	Indicator	Compliance of proposed development with sustainability indicator
		<p>emitted from the proposed EfW facility and subsequently deposited to soil does not pose a health risk to downwind receptors. This conclusion is deemed to be robust as it is based on a worst case scenario and there is a large margin of safety (>10,000) between the highest predicted soil concentrations and soil assessment criteria that are protective of the most sensitive human receptors.</p>
2. Economic Development	<p>Proportion of households in the South west with an income of less than 50% of the national average</p>	<p>New jobs will be created during the construction and operation of the RRC, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.</p> <p>It is considered that there will be a positive net effect economically throughout the region with the proposed investment at the application site.</p>
3. Climate Change	<p>Minimum of 11-15% of electricity production to be from renewable sources by 2010</p>	<p>Section 14 of the Environmental Statement considers the possible climate change impacts derived from the construction and operation of the proposed development.</p> <p>A review of alternative technologies concluded that EfW technology is not likely to have a significant impact on climate change and performs better than landfill and alternative waste</p>

Cross Cutting Sustainability theme for the South West	Indicator	Compliance of proposed development with sustainability indicator
		<p>treatment facilities such as Mechanical Biological Treatment (MBT).</p> <p>The NERRC will generate electricity and have the potential to generate heat; the electricity can either be sold back into the national grid or like the heat, sold onto nearby users, offsetting running costs.</p>
4. Development and Planning	% of new development on brownfield land	<p>The RRC is being developed on an existing quarry site. Previous development has taken place on the site subsequently ensuring the site falls into the category of brownfield land and as such in accordance with indicator.</p>
5. Regional Inequality and Access	% population living in 10% most deprived wards nationally	<p>There will be a positive net effect economically throughout the region with the proposed investment at the application site.</p>
6. Sustainable Communities	Housing deprivation and Access to services	<p>The RRC will have the capacity to provide heat.</p>
7. Biodiversity Landscapes	and Bird populations in the UK and South West	<p>A comprehensive ecological impact assessment has been prepared taken into account biodiversity and landscape issues at the site. A comprehensive mitigation strategy programme has been prepared.</p>
8. Learning and Skills	Adult literacy levels	<p>The associated visitor centre at the site provides a chance for adults/children to learn about the process and the importance of the waste hierarchy.</p>

Cross Cutting Sustainability theme for the South West	Indicator	Compliance of proposed development with sustainability indicator
9. Transport	Traffic volumes	A comprehensive Transport Assessment has been undertaken which has carefully assessed the impact the proposal would have on the surrounding road network.
10. Natural Resources and waste	Waste management targets	Will help comply with SWDWP targets
11. Business and Work	The level of SME creation and survival	<p>New jobs will be created during the construction and operation of the RRC, these would be both directly in the facility or indirectly through contractors, suppliers and other involved parties, as well as through increased expenditure in the locality.</p> <p>It is considered that there will be a positive net effect economically throughout the region with the proposed investment at the application site.</p>
12. Culture and Heritage	The net loss of historical/cultural assets	The potential impact of the proposed development on cultural heritage resources has been assessed. Key mitigation measures proposed are firstly the landfill restoration scheme which would match the general character of the surrounding historic landscape, including that of the pre-extraction layout within the development site, whilst not being an exact replacement of it. Over time the proposed extensive planting scheme would assist

Cross Cutting Sustainability theme for the South West	Indicator	Compliance of proposed development with sustainability indicator
		in decreasing the developments visual impact and that of the proposed RRC.
13. Food and Farming	% of the region farmed organically	N/A
14. Tourism	% of tourist trip to the South West by car	The A38 which bypasses the application site to the north is a gateway to many tourist destination hot spots in the south west. It is considered that the high quality innovative design of the NERRC will provide passes by with an interesting visual to indulge upon.
15. Coast and Maritime Environment	Bathing water quality	Careful consideration has been given to surface water runoff at the site and especially the sites relationship it has with the River Yealm.