

Energy from Waste  
Combined Heat and Power Facility  
North Yard, Devonport

## Alternative Sites Appraisal

May 2011

Prepared for



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# 1 Introduction

## 1.1 Background

MVV Environment Devonport Ltd (MVV) has been awarded the South West Devon Waste Partnership's (SWDWP) residual waste treatment contract. The SWDWP is a collaboration that has been established between Plymouth City Council, Torbay Council and Devon County Council to provide a long term solution to deal with the waste from the southwest Devon area that cannot be recycled, reused or composted.

MVV proposes the construction of an Energy from Waste (EfW) facility, incorporating Combined Heat and Power (CHP) technology, on land known as North Yard in the northeast of Her Majesty's Naval Base (HMNB) Devonport, Plymouth. The proposed EfW CHP facility will have capacity to process up to 265,000 tonnes of waste per annum.

## 1.2 The Site

The majority of the Site on which the EfW CHP facility itself will be constructed is currently used for storage purposes. The planning application boundary extends into land including 'Blackies Wood' – a Biodiversity Network Feature and Local Greenscape Area – which will be used for ecological and landscape enhancement.

The site is not allocated for waste management use in the Plymouth Waste DPD, April 2008.

## 1.3 Plymouth City Council Site Assessments – the 'Entec Report'

In 2005, Plymouth City Council (PCC) commissioned Entec Ltd. to undertake a site search exercise to identify sites within PCC's administrative area with the potential to accommodate waste management facilities. Following this exercise a report was produced detailing the method of site assessment used and the conclusions reached. The report is dated 11 July 2005 and is titled: *Plymouth Waste Local Development Document: Search for Potential Waste Management Sites. Supporting Document for the Waste Core Strategy and Waste Local Development Preferred Options Report*. Herein, the document shall be referred to as the 'Entec Report'.

As a result of the site assessments, the Entec Report identified 13 sites with some potential for waste management use, of which 5 were concluded to have potential for use as strategic sites for recovery. These findings were used to inform site allocations in the Plymouth Waste DPD.

The North Yard Site was not included for assessment in the Entec Report. As such, the potential of the Site to be used for waste management development has not yet been properly assessed in the planning process.

The purpose of this report is to update the site identification and assessment process undertaken by Entec, to take into account new policy on sustainable locations for waste management facilities that has been published since Entec carried out its study.

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This report applies the assessment methodology used in the Entec Report to the Site and considering whether the Site would have been identified as having potential for waste management development had it been included in the site assessments undertaken by Entec.

This report also applies the assessment methodology in the Entec report to seven additional sites, one within Plymouth and six that are relatively close to Plymouth but outside Plymouth City Council's administrative boundary. This list of sites considered was established in consultation with Plymouth City Council.

The Entec methodology was applied by qualified planning professionals, using professional judgement, based on the description of the methodology in the Entec Report.

## 2 Site Assessment

### 2.1 Introduction

Section two of the Entec Report sets out site selection criteria used in the assessment, explaining that a three-stage approach is used, with stage 1 relating to inclusionary criteria, stage 2 being exclusionary criteria and stage 3 being discretionary criteria. This report describes the application of this methodology to the North Yard Site according using the Site Assessment Proforma set out in Appendix C of the Entec Report and the professional judgement of the URS Scott Wilson project team.

Section four of the Entec Report explains the sources of data that were considered at each assessment stage. It should be noted that not all of the sources of information used in the Entec Report have been available for this new assessment, but this is not considered a significant impediment to the analysis of the North Yard Site or its comparison with others. Table 1 presents a summary of the assessment of the North Yard site against the Entec Report criteria.

### 2.2 North Yard Site Assessment

**Table 1: Assessment Summary**

<b>Stage 1 Inclusionary Objective: Unallocated site with existing industrial use / vacant and undeveloped site larger than 1.0 hectare</b>	
<b>Relevant Stage 2 Exclusionary Objectives:</b>	<b>Severity</b>
Development Site entirely within Flood Zone 1. Small section of access road within Flood Zone 2, although because the proposed development is classified in PPS25 as being "less vulnerable" and mitigation measures are available it is not considered that this should exclude the site from consideration.	<5%
<b>Relevant Stage 3 Discretionary Objectives</b>	<b>Severity</b>
Partially affected by Biodiversity Network Feature and Local Greenscape Area.	20% (determined using professional judgement in the absence of a clear rationale)
The southern/central part of Site currently in storage and distribution use. Part of the site is affected by 'Blackies Wood' Biodiversity Network Feature and Local Greenscape Area. The impact on this feature would need to be assessed. The site is available for development.	

### **Stage 1 Notes:**

The North Yard Site meets the inclusionary criteria set out in the Entec report, paragraph 2.2.3 under a combination of the following categories:

- Unallocated sites with existing industrial uses; and
- Vacant and undeveloped sites larger than 1.0 hectare.

The Site also accords with the additional criteria for selection of strategic sites for recovery set out in section 2.3 of the Entec Report as it is greater than 2 hectares in area.

### **Stage 2 Notes:**

The Development Site itself is not constrained by any of the exclusionary criteria outlined in paragraph 2.2.4 of the Entec report and no exclusionary features are shown within (or close to) the Site by Figure 5.3 of the Entec report.

Part of the access road to the Development Site falls within Flood Zone 2. Section 2.2.4 of the Entec report states that sites constrained by EA flood risk areas (Zones 2 and 3) should be ruled out from consideration. However, given that only the proposed access road lies within an EA flood risk area and is an existing access route that largely consists of made ground, and the proposed development is classified in PSS25 as being "less vulnerable", it is considered that development of the Site for waste management use would not have an unacceptable risk on flooding and a development at the Site would not be at unacceptable risk from the impacts of flood water. As such, the Site is therefore not considered to be entirely constrained and should not be ruled out at this stage. This is consistent with the approach applied in the Entec report to Chelson Meadow (Site E01), Moorcroft Quarry (E02), British Gas Site, Breakwater Road (E19), Prince Rock Depot (E47), Ernsettle Playing Fields (E54) and Southway Redevelopment Area (E55), all of which are identified as being at least partially constrained by Stage 2 criteria in Appendix F of the Entec report. In particular, part of the British Gas Site, Breakwater Road (E19) is situated within Flood Zone 2, yet the site is not ruled out at Stage 2 of the Entec report.

### **Stage 3 Notes:**

Although not identified on Figure 5.3 of the Entec Report, a Biodiversity Network Feature and Local Greenscape Area known as 'Blackies Wood' is located partially in the northern part of the Site.

**Table 2: Detailed Assessment**

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		A	Although trees are present within the Blackies Wood part of the site, these will not need to be lost to accommodate development. No TPO applies.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		A	No PROWs identified.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha.  <u>Local Facilities</u> Site area below 1 ha.		A	The Site is available for development (MVV has negotiated the terms of a lease). The Site measures approximately 7 Ha, the majority of which is previously developed land.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		A	Compatible with nearby employment uses and would create new jobs during construction and operation.

Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		A	Good access potential.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		A	Good access to principal road network.
Amenity	1. To minimise potential detrimental impacts of noise/ vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Sensitive receptors close but not adjacent to site. Mitigation possible.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Sensitive receptors close but not adjacent to site. Mitigation possible.
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	C	Sensitive receptors close but not adjacent to site. Mitigation possible.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Sensitive receptors close but not adjacent to site. Mitigation possible.
	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	C	Sensitive receptors close but not adjacent to site. Mitigation possible.

Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	B	The Site can be developed without any unmanageable impact on protected species.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	B	The Site can be developed without any unmanageable impact on wildlife corridors.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Some adverse effects on views from individual properties, but impact of development on the visual amenity of the area as a whole limited to "significant but manageable" due to particular topography and vegetation.

### Assessment Criteria

The criteria used of the above assessments are outlined below:

#### Traffic & Transportation 1

- E - Access poor/visibility/not solvable
- D - Access poor/visibility/not solvable without 3<sup>rd</sup> party land
- C - Access poor - could be mitigated through minor works
- B - Access acceptable - improvement to standard through minor works possible
- A - Access good - no works required

#### Traffic & Transportation 2

- E - Access > 1 km, via narrow roads, through residential areas/sensitive land uses
- D - Access via narrow roads and through residential areas/sensitive land uses
- C - Access via narrow roads or through residential areas/sensitive land uses
- B - Access good roads and avoiding residential areas/sensitive land uses
- A - Access < 1 km+, via good roads, avoiding residential areas/sensitive land uses

#### Amenity 1 to 5

- E - Poor. Sensitive uses adjacent to site. No mitigation possible.

- D - Poor. Sensitive uses adjacent to site. Some mitigation possible.
- C - Poor. Sensitive uses close to site. Mitigation possible.
- B - Sensitive uses ~ 250 m from site. Some mitigation required.
- A - Sensitive uses > 250 m from site. No mitigation required.

The Entec report does not specify assessment criteria for land use, physical size, or economic considerations, however, Plymouth City Council has subsequently confirmed that the assessment criteria used by Entec was as follows:

#### Land Use 1 to 3

Will the use of the site for waste purposes impact on assets of importance?

- E - The impact would be unmanageable
- D - The use of the site for waste purposes would present a significant and probably unmanageable impact
- C - The use of the site for waste purposes would present a significant but manageable impact
- B - The use of the site for waste purposes would have some impact but it would be manageable
- A - The use of the site for waste purposes would have no impact

#### Physical Size

Whether the site is suitable in terms of size as indicated by the ODPM / EA or by bidders

- E - The size of the site would prohibit its use for waste
- D - The size of the site would present significant problems
- C - The size of the site would not present any significant problems
- B - The size of the site is almost ideal
- A - The size of the site is ideal and within parameters determined

#### Economic

Will the use of the site for waste purposes impact upon employment uses in the area? Is the proposal likely to conflict with owner aspirations regardless of the prevailing uses or allocations.

- E - The impact on employment would be unmanageable
- D - The use of the site for waste purposes would present a significant and probably unmanageable impact
- C - The use of the site for waste management would present a significant but manageable impact on employment uses
- B - The use of the site for waste purposes would have no impact
- A - The use of the site for waste purposes would advance employment uses

#### Nature Conservation

Will the use of the site for waste purposes impact on wildlife or an area where nature is of importance?

- E - The impact on nature conservation would be unmanageable

- D - The use of the site for waste purposes would present a significant and probably unmanageable impact
- C - The use of the site for waste purposes would present a significant but manageable impact on nature conservation
- B - The use of the site for waste purposes would have some impact but it would be manageable
- A - The use of the site for waste purposes would have no impact on nature conservation

#### Landscape and Visual Impact

The impact of the siting of such a facility would have on the visual amenity of the area the site is located in.

- E - The visual impact would be unmanageable e.g. AONB
- D - The use of the site for waste purposes would present a significant and probably unmanageable impact on visual amenity
- C - The use of the site for waste purposes would present a significant but manageable impact on the visual amenity of the area
- B - The use of the site for waste purposes would have some impact but it would be manageable
- A - The use of the site for waste purposes would have no impact on visual amenity

## 2.3 North Yard Site Assessment Conclusion

Following the application of the site assessment methodology used in the Entec Report to the North Yard Site (using available data), it is considered that the Site is likely to have been included in the list of potential strategic and local waste management facilities identified in section 7.1.1 of the Entec Report.

However, the Entec Report then applies an additional criterion to further refine the list of sites having some potential to accommodate a strategic site for recovery, specifically to consider those within 250m of residential properties. It is understood that this criterion was derived from a report<sup>1</sup> published around the time of the original assessment that was referenced in the Companion Guide<sup>2</sup> to PPS10. It is important to stress that it was not an exclusionary threshold.

Potential amenity impacts have been considered in detail in the Environmental Statement that accompanies the planning application for the EfW CHP facility. The Planning Application Supporting Statement draws together the conclusions of the Environmental Statement and concludes that with embedded good design, landscaping and acoustic mitigation schemes, the proposed development would be unlikely to have an unacceptable amenity impacts and that the proposed development will be in accordance with criterion 4 of Policy W7 of the Plymouth Waste DPD.

<sup>1</sup> Office of the Deputy Prime Minister (2004) *Planning for Waste Management Facilities: A Research Study*. Page 155.

<sup>2</sup> Department for Communities and Local Government (2006) *Planning for Sustainable Waste Management: A Companion Guide to PPS10*.

## 2.4 Assessment of Other Sites

Tables 3 and 4 provide a summary of the assessment of the sites considered to have potential for an EfW CHP facility. The majority of these sites were assessed in the Entec Report so the results have simply been brought through to Table 3 and 4. However, seven additional sites were assessed, one within Plymouth and six that are relatively close to Plymouth (within the Waste Collection Authority areas to be serviced by the SWDWP residual waste treatment contract) but outside Plymouth City Council's administrative boundary. This list was produced in consultation with Plymouth City Council officers. A detailed assessment of those sites not originally considered in the Entec Report, is presented in tabulated form in Appendix 1.

The North Yard Site passed Stages 1, 2 and 3 of the Entec methodology. In the detailed site assessment for the North Yard Site, the following grades were awarded against the 15 criteria tested:

- 7 A's
- 2 B's
- 6 C's
- 0 D's
- 0 E's

The sites with the fewest number of A's (3) were Plymbridge Industrial Estate, Heathfield Industrial Estate and Wrangaton. The site with the greatest number of A's (12) was Chelson Meadow.

Fourteen of the sites were awarded an 'E' score (i.e. adverse impacts likely and no mitigation possible).

This assessment demonstrates that the North Yard site, along with a number of other sites, should not be excluded from consideration as a suitable location for an EfW CHP facility. The selection of a preferred site, either for allocation in a development plan, or by a developer to be considered against Policy W7 of the Plymouth Waste DPD, should be made dependent on a range of factors including those subject areas and objectives identified in the Entec Report, but also on deliverability and other sustainable waste management matters not considered in the Entec Report. Section 3 of this report considers this in more detail.

**Table 3: Stage 1, Stage 2 and Stage 3 Assessments**

Subject Area	North Yard, Devonport	E01, Chelson Meadow, Waste management	E02, Moorcroft Quarry, Billacombe	E07 Land off St.Budeaux By Pass, St Budeaux	E14, Plymbridge Industrial Estate	E19, British Gas Site, Breakwater Road	E21, Water Treatment Works, Glacis Park, Tavistock Road	E47, Prince Rock Depot	E48, China Clay Works, Coypool	E50, Land at Estover Gate	E52, Land at Burrington Industrial Estate	E53, Employment Land Commitment, Ernesettle	E54, University of Plymouth Playing Fields	E55, Southway Redevelopment Area	E57, Plymouth Airport Redevelopment Area	E58, Forder Valley	E60, Agaton Farm, Ernesettle	South Yard	New England Quarry	Heathfield Landfill Site	Heathfield Industrial Estate	Crowndale Tavistock	Langage	Wrangaton
Stage 1 Inclusionary Objective	Unallocated site with existing industrial use / vacant and undeveloped site larger than 1.0 hectare	Existing Waste Facility	Existing Waste Facility / Operational Quarry	Greenfield Employment Zone	Employment Allocation	Employment Allocation	Existing Waste Facility	Unallocated Site in Existing Employment Use	Unallocated Site in Existing Employment Use	Unallocated Site in Existing Employment Use	Greenfield Employment Commitment	Greenfield Vacant Playing Fields	Planned Redevelopment of Employment Use	Unallocated Site in Existing Employment Use	Greenfield Planned Employment Allocation	Greenfield Vacant Playing Fields	Not allocated. Site proposed by SITA at ISOS stage of SWDWP procurement but bid withdrawn	Allocated for strategic waste management in Devon County Waste Local Plan	Allocated for strategic waste management in Devon County Waste Local Plan	Allocated for strategic waste management in Devon County Waste Local Plan	Allocated for strategic waste management in Devon County Waste Local Plan	General industrial estate / science park area suggested for allocation but not allocated <sup>3</sup>	Allocated for strategic waste management in Devon County Waste Local Plan	
Stage 2 Exclusionary Objectives (severity)	Access route partially within Flood Zone 2 (<5%)	Mixed use allocation. (partial) (<2%)	Major Aquifer (100%)	-	-	Major Aquifer (100%)	-	Major Aquifer (100%)	-	-	RNAD Explosive Arc (yellow zone) (20%)	CAA Airport Protection Zone (<5%)	-	-	-	Site located within Devonport AAP area but not specifically allocated. Potential conflict with AAP objectives	Periphery within Flood Zone 3 (10%)	Corner within Flood Zone 2 (5%)	-	Periphery within Flood Zones 2 and 3 (10%)	Entirely within AONB (100%) – based on this the Entec criteria require that this site no longer be considered	-	-	

<sup>3</sup> A general area, not a specific site, was suggested by an objector to the Devon County Waste Local Plan but a site was not eventually allocated. There has therefore been uncertainty about which site(s) to consider at Langage. The existing industrial estate / science park is more established at the western end and has progressively developed eastwards, so it seems reasonable to assume a location on the eastern side for the purposes of this exercise.

Stage 3 Discretionary Objectives (severity)	Biodiversity Network Feature (20%)	Floodplain Zone 1 (partial) (<2%)	Greenscape (partial) (<20%)	Greenscape (partial) (<10%)	Floodplain Zone 1 (partial) (5%)	Floodplain Zone 1 (partial) (40%)	Floodplain Zone 1 (35%)	Greenscape (partial) (<2%)	CAA Consultation Zone (100%)	CAA Consultation Zone (100%)	BAA Birdstrike Consultation Zone (100%)	RNAD Explosive Arc (purple zone) (100%)	Greenscape (Sports Pitches) (100%)	CAA Consultation Zone (100%)	RNAD Explosive Arc (purple zone) (100%)	Greenscape (100%)	Affected by Greenscape (100%)	Route to A38 approximately 5km, depending on route taken	Partly within County Wildlife Site (30%)	Partly within County Wildlife Site (15%)	Adjacent to railway Adjoins Haz Installation Consultation Zone	N/A	-	-
	Local Greenscape Area (20%)	Greenscape (partial) (<5%)	BAA Birdstrike Consultation Zone (100%)	Area containing archaeological features (5%)	Public right of way (5%)	Records of Features of Archaeological Value	Mineral Consultation Area																	

**Table 4: Summary of Detailed Site Assessments<sup>4</sup>**

Subject Area	Objectives	North Yard, Devonport	E01, Chelson Meadow, Waste management	E02, Moorcroft Quarry, Billacombe	E07 Land of St.Budeaux By Pass, St Budeaux	E14, Plymbridge Industrial Estate	E19, British Gas Site, Breakwater Road	E21, Water Treatment Works, Glacis Park, Tavistock Road	E47, Prince Rock Depot	E48, China Clay Works, Coypool	E50, Land at Estover Gate	E52, Land at Burrington Industrial Estate	E53, Employment Land Commitment, Ernesettle	E54, University of Plymouth Playing Fields	E55, Southway Redevelopment Area	E57, Plymouth Airport Redevelopment Area	E58, Forder Valley	E60 Agaton Farm, Ernesettle	South Yard	New England Quarry	Heathfield Landfill Site	Heathfield Industrial Estate	Crowndale Tavistock	Langage	Wrangaton
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	A	A	A?	D	A	A	A	A	C	A	A	C	A	A	A	A	A	A	C	C	C	-	B	C
	2. To avoid impact upon public footpaths and public rights of way.	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	-	B	A
	3. To protect the best and most versatile agricultural land.	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	-	C	A
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	A	A	A	A	A	A	A	A	E A	E A	A	A	A A	A A	A A	A A	A	A	A	A	A	-	A	A

<sup>4</sup> The detailed site assessment for North Yard, Devonport can be found in the main body of this report, above. The detailed site assessments for those sites E01 to E58 can be found in the original Entec Report. The detailed site assessments for South Yard Devonport, New England Quarry, Heathfield Landfill Site, Heathfield Industrial Estate, Langage and Wrangaton can be found in Appendix 1 to this report. A detailed site assessment has not been undertaken for Crowndale Tavistock since it did not pass the Stage 2 criteria.

Economic	1. To avoid detrimental impact on employment uses.	A	A	A	B	C	C	A	A	C	C	A?	A	C	C	C	D	B	A	A	C	-	A	B	
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	A	A	C	C	A	D	A	A	C	A	A	A	A	B	D	A	B	C D	A	B	-	A	B	
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	A	B	B	D	B	B	C	B	C	B	E	B	B	C	B	D	B	E	E E	E	C	-	B	D
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	C	A?	B	C	B	B	C	C	A	C	C	D	A	B	C	C	D	C	C	C	C	-	C	B
	2. To minimise potential detrimental impacts of odour.	C	A?	B	C	B	B	C	C	A	C	C	D	A	B	C	C	D	B	C	C	C	-	C	B
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	C	A?	B	C	D	B	C	C	C	D	C	D	A	D	D	C	D	B	C	C	C	-	C	B
	4. To minimise any potential detrimental effects to air quality.	C	A?	B	C	B	B	C	C	A?	C	C	D	A	B	D	C	D	C	C	C	C	-	C	B
	5. To minimise any potential detrimental effects from bioaerosols.	C	A?	D	E	E	E	E	E	A	E	E	E	A?	E	E	E	E	C	C	C	C	-	C	B
Nature Conservation	1a). To minimise the impact on wildlife interests. (presence of protected species)	B	-	-	C	A	A	A	A	-	A	A	-	-	A	C	C	C?	A	C	C	D	-	B	B
	1b). To minimise the impact on wildlife interests. (location of wildlife corridor)	B	A	A	C	C	C	A	A	A	A	A	A	B	A	C	B	B	A	C	C	D	-	C	B

Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	C	D	A	C	B	B	C	C	B	A	B	D	D	A	C	D	D	C	C	C	C	-	C	D
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## 3 Sustainability and Energy Use

### 3.1 Introduction

Since the Entec report was prepared, Planning and Climate Change Supplement to Planning Policy Statement 1 (the PPS1 Supplement) (2007) has been published. Under the section 'Selecting Land for Development', paragraph 24 of the PPS1 Supplement sets out a number of criteria that local authorities should take into account when selecting land for development. One of the criteria given is:

*"the extent to which existing or planned opportunities for decentralised and renewable or low-carbon energy could contribute to the energy supply of development"*

The ability of sites to contribute to decentralised and renewable low-carbon energy was not considered as part of the site identification and assessment criteria used in the Entec Report. However, given updated national policy, this should be a consideration of all future work on the allocation of sites.

In order to address this, the following sections of this report appraise the potential of key sites to provide development that contributes to the provision of decentralised and low-carbon energy. In the case of sites for waste management development, this would most likely relate to the use of heat and power produced from waste material. As such, key sites' potential for Combined Heat and Power (CHP) is appraised below.

### 3.2 CHP Appraisal: Methodology

The CHP appraisal takes a similar approach to the methodology described in the Entec report. Criteria that impact on a site's ability to provided CHP have been identified by Scott Wilson and a grading system established. The criteria and grading sub-criteria were established in consultation with Plymouth City Council officers and are described in Section 3.3, below.

The sites to be assessed against the CHP criteria have also been agreed with Plymouth City Council officers and include:

- North Yard, Devonport;
- Most of the sites not ruled out following the application of Stage 1 and 2 criteria in the Entec report; and
- Some sites from outside the boundary of Plymouth that were not considered in the Entec report but which are allocated for strategic waste management use by Devon County Council.

#### **Limitations**

The CHP appraisal is based on publically available information and records and information within the Entec report, which does not include detailed locational and boundary information for each of the sites appraised.

### 3.3 Criteria

The criteria used to appraise the potential of a site to support CHP development are described in the following paragraphs. The criteria relate to the 'heat' element of CHP as the transfer of useful heat from source to users is often a more complex and challenging process than the transfer of electricity to the National Grid.

#### **Criterion 1: Distance between heat source and heat user(s) (as a measure of economic feasibility)**

- E – Greater than 5km from significant heat user(s)
- D – Greater than 2km to 5km from significant heat user(s)
- C – Greater than 1km to 2km from significant heat user(s)
- B – Greater than 500m to 1km from significant heat user(s)
- A – Within 500m of significant heat user(s)

##### *'Significant' heat users*

A District Energy Study of the City of Plymouth was produced by ICE (UK) Ltd. in January 2010<sup>5</sup> to assess the energy needs and suitability for district CHP schemes of Devonport, Plymouth City Centre and Derriford. In 2008, Entec UK Ltd. produced a report reviewing the potential for EfW-CHP development in Plymouth<sup>6</sup> on behalf of Plymouth City Council. Information from these reports enabled Scott Wilson to identify what are defined for the purposes of this exercise as potential 'significant' users of heat:

- HMNB Devonport Dockyard (identified by ICE and Entec);
- Devonport housing and other uses (identified by ICE);
- Derriford area (Derriford Hospital identified by Entec, wider Derriford area including other industrial and commercial uses identified by ICE);
- City centre, specifically Civic Centre and University of Plymouth (identified by ICE);
- Sherford – planned settlement of 5500 homes plus associated infrastructure with resolution to grant planning permission;
- Plymstock – new settlement of 1600 homes plus associated infrastructure with planning permission to southeast of city (identified by Entec).

Significant heat users have been discussed with Plymouth City Council officers and the above list has been agreed as being accurate and suitable for the purposes of this CHP appraisal.

#### **Criterion 2: Steam or hot water distribution network at heat user(s)**

- E – No steam or hot water distribution network/infrastructure in place and retrofitting considered technically and/or economically prohibitive
- D – New steam or hot water distribution network/infrastructure could be designed into new heat user(s) but space is limited (e.g. urban area)
- C – New steam or hot water distribution network/infrastructure could be retrofitted to existing heat user(s) and space is available to do this (e.g. industrial area/business park)
- B – New steam or hot water distribution network/infrastructure could be designed into new heat user(s) that are planned but not yet constructed
- A – Existing steam or hot water distribution network/infrastructure in place at existing user's Sites

<sup>5</sup> ICE (UK) Ltd. (2010) *City of Plymouth District Energy Study, Feasibility Study for an Energy Services Company in Plymouth*, Plymouth City Council.

<sup>6</sup> Entec UK Ltd. (2008) *Review of EfW-CHP Potential*, Plymouth City Council.

#### **Criterion 3: Route between heat source and heat user(s)**

- E – Significant and insurmountable land ownership, engineering and/or environmental constraints
- D – A number of severe land ownership, engineering and/or environmental constraints
- C – Some moderate land ownership, engineering and/or environmental constraints but not insurmountable
- B – Some minor land ownership, engineering and/or environmental constraints
- A – Free from significant land ownership, engineering and environmental constraints

#### **Criterion 4: Progress towards contract for purchase of heat**

- E – No progress
- D – Potential heat user(s) identified by supplier
- C – Discussions commenced with heat user(s)
- B – Detailed negotiations underway with heat user(s)
- A – Heads of Terms agreed for purchase of heat between supplier and heat user(s)

### 3.4 CHP Appraisal: Findings

**Table 5: CHP Appraisal Results**

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat	
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale
-	North Yard, Devonport	A	Within 500m of HMNB Devonport (North) and Devonport Housing and other uses (North).	A	Existing steam distribution network/infrastructure at HMNB Devonport.	A	Route likely to be within land under the ownership of a single organisation (MoD). Short distance to travel. No significant environmental constraints identified.	A	Heads of Terms agreed.
E01	Chelson Meadow, Waste Management	B	Approximately 1km from Plymstock development.	B	New Plymstock development could design in heat distribution network.	C	Land ownership unknown – likely several owners. Direct route through or around quarry. Indirect route along Billacombe Road may be possible, but longer.	E	No proposals known.
E02	Moorcroft Quarry, Billacombe	B	Approximately 1km from Plymstock development.	B	New Plymstock development could design in heat distribution network.	B	Land ownership unknown, but likely to be small number of owners given short distance.	E	No proposals known.
E07	Land off St. Budeaux By Pass, St. Budeaux	C	Approximately 2km from HMNB Devonport.	A	Existing steam distribution network/infrastructure at HMNB Devonport.	C	Land ownership unknown but likely many urban/residential owners. Required to cross over or under railway line.	E	No proposals known.

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat	
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale
E14	Plymbridge Industrial Estate	D	Approximately 3.5km from Plymstock development.	B	New Plymstock development could design in heat distribution network.	D	Land ownership – likely several owners. Route would be required to cross dual carriageway road, River Plym and railway line. Route also potentially constrained by Saltram House Registered Park & Garden, Efford Marshes Local Nature Reserve and Laira Battery and Efford Fort.	E	No proposals known.
E19	British Gas Site Breakwater Road	D	Approx 2.5km from Plymstock development.	B	New Plymstock development could design in heat distribution network.	C	Land ownership unknown – likely many urban/residential owners. Requirement to cross A379 dual carriageway.	E	No proposals known.
E21	Water Treatment Works, Glacis Park, Tavistock Road	B	Approximately 750m from Derriford Hospital.	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space likely to be available.	B	Land ownership unknown - likely small number of urban owners. Relatively short distance. No significant environmental constraints identified.	E	No proposals known.
E47	Prince Rock Depot	C	Approximately 1.5km from Civic Centre and/or University of Plymouth.	C	Retrofitting heat distribution infrastructure to Civic Centre and/or University of Plymouth likely to be possible.	D	Land ownership unknown but likely several urban owners. Route through densely built up city centre area.	E	No proposals known.
E48	China Clay Works, Coypool	D	Approximately 2.5km from Derriford Hospital.	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space likely to be available.	D	Land ownership unknown – likely many urban owners. Direct route would cross River Plym and constrained by Bircham Valley local nature reserve. Indirect route along A38 to Manadon then north may	E	No proposals known.

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat		
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale	
							be possible, but longer.			
E50	Land at Estover Gate	B	Likely to be within 1km of Derriford heat user(s).	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space likely to be available.	B	Land ownership unknown - possibly several urban owners depending on precise route and destination of heat. Short distance. No significant environmental constraints identified.	E	No proposals known.	
E52	Land at Burrington Industrial Estate	C	Approximately 1.75km from HMNB Devonport.	A	Existing steam distribution network/infrastructure at HMNB Devonport.	C	Land ownership unknown but likely many urban owners. Required to cross over or under railway line.	E	No proposals known.	
E53	Employment Land Commitment, Ernesettle	D	Approximately 2.5km from HMNB Devonport.	A	Existing steam distribution network/infrastructure at HMNB Devonport.	D	Land ownership unknown - likely many urban/residential owners. Required to cross A38 dual carriageway and required to cross over or under railway line.	E	No proposals known.	
E54	University of Plymouth Playing Fields, Ernesettle	D	Approximately 2.5km from HMNB Devonport.	A	Existing steam distribution network/infrastructure at HMNB Devonport.	D	Land ownership unknown - likely many urban/residential owners. Required to cross A38 dual carriageway and required to cross over or under railway line.	E	No proposals known.	
E55	Southway Redevelopment Area	C	Approximately 1.5km from Derriford Hospital.	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space available.	B	Land ownership unknown. Possibly several urban areas depending on precise route and destination of heat. Relatively short distance. No significant environmental constraints identified.	E	No proposals known.	

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat		
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale	
E57	Plymouth Airport Redevelopment Area	B	Likely to be within 1km of Derriford heat user(s).	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space available.	B	Land ownership unknown - possibly several urban areas depending on precise route and destination of heat. Relatively short distance. No significant environmental constraints identified.	E	No proposals known.	
E58	Forder Valley	D	Approximately 2.5km from Derriford Hospital.	C	Retrofitting heat distribution infrastructure to Derriford Hospital and other users likely to be possible and space available.	C	Land ownership unknown – likely several urban owners. Potential route constrained by Bircham Valley local nature reserve.	E	No proposals known.	
E60	Agaton Farm, Ernsettle	D	Approximately 2.5km from HMNB Devonport.	A	Existing steam distribution network/infrastructure at HMNB Devonport.	D	Land ownership unknown - likely many urban/residential owners. Required to cross A38 dual carriageway and required to cross over or under railway line.	E	No proposals known.	
-	South Yard	A	Within 500m of HMNB Devonport (South) and Devonport Housing and other uses (South).	A	Existing steam distribution network/infrastructure at HMNB Devonport.	A	Route likely to be within land under the ownership of a single organisation (MoD). Short distance. No significant environmental constraints identified but this part of the dockyard is significantly more densely developed (and is further from the strategic road network).	E	No proposals known.	
-	New England Quarry	D	Approximately 3km from Sherford.	B	New Sherford development could design in heat distribution network.	C	Land ownership unknown - likely several agricultural owners given location and distance. Route would cross small	C	Letter from developer of Sherford supporting the principle of using heat generated from proposed New England Quarry	

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat		
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale	
-							tributary of River Yealm. Route potentially constrained by Wasteberry Camp Scheduled Monument, although avoiding this feature should be possible.		Resource Recovery Centre submitted with planning application for the latter. No evidence of more detailed negotiations found.	
-	Heathfield Landfill Site	E	More than 5km from "significant heat user" as defined in this study.	C	Retrofitting heat distribution infrastructure to Heathfield Industrial Estate likely to be possible and space available.	D	Route would need to cross River Teign and A38 dual carriageway. Also, there are significant clay workings along the route and proposals nearby for the expansion of Newton Abbot.	E	No proposals known.	
-	Heathfield Industrial Estate	E	More than 5km from "significant heat user" as defined in this study.	C	Retrofitting heat distribution infrastructure to Heathfield Industrial Estate likely to be possible and space available.	B	Land ownership unknown - possibly several urban areas depending on precise route and destination of heat. Relatively short distance. No significant environmental constraints identified.	E	No proposals known.	
-	Crowndale, Tavistock	E	More than 5km from "significant heat user" as defined in this study.	-	N/A	-	N/A	-	N/A	
-	Langage	C	Approximately 1.5km from Sherford.	B	New Sherford development could design in heat distribution network.	C	Land ownership unknown – likely to be several agricultural owners and potentially	E	No proposals known.	

Site No.	Site Name	Criterion 1: Distance between heat source and user(s)		Criterion 2: Steam or hot water distribution network at heat user(s)		Criterion 3: Route between heat source and heat user(s)		Criterion 4: Progress towards purchase of heat	
		Grade	Rationale	Grade	Rationale	Grade	Rationale	Grade	Rationale
-	Wrangaton	E	More than 5km from "significant heat user" as defined in this study.		N/A		urban/residential owners depending on route. Requirement to cross A38 dual carriageway.		N/A
		D	There may be some heat users in Ivybridge, approximately 4km away, but these are not expected to be on a significant scale.	-		-	N/A	-	

### 3.5 CHP Conclusion

The CHP appraisal demonstrates that the 'North Yard' and 'South Yard' sites have by far the greatest potential for effective use of CHP. This is largely due to their proximity to the existing steam distribution network at HMNB Devonport. The sites also benefit from being close to the only existing heat user that would be likely to be able to make use of all of the heat produced by an EfW CHP facility of the scale proposed. Indeed:

*"...the most likely site to match heat output from the EFW is the Devonport Dockyards. No other single site would appear to be exactly matched to the heat supply output from either EFW facility"* (Review of EFW-CHP Potential Entec UK Ltd, 2008, Section 4.1)

The 'North Yard' site also benefits from positive advanced negotiations over the use of heat, with heads of terms having been agreed between supplier and user.

The 'South Yard' part of the dockyard is significantly more densely developed than the 'North Yard' and is further from the strategic road network.

Some other sites also show potential for CHP, but in most cases there would be constraints to overcome in terms of delivering heat to users or retrofitting the necessary infrastructure to existing buildings.

## 4 Conclusion

Following the assessment of the North Yard site for its potential for waste management use, it is concluded that it is likely that, had the site been considered, it would have been identified in the Entec Report as being potentially suitable for waste management development, including EfW development.

The selection of a preferred site, either for allocation in a development plan, or by a developer to be considered against Policy W7 of the Plymouth Waste DPD, should be made dependent on a range of factors including those subject areas and objectives identified in the Entec Report, but also on deliverability and other sustainable waste management matters not considered in the Entec Report.

The Entec Report did not consider sites' potential for sustainable energy use as part of its assessment criteria. This omission is likely to be due to the different planning policy landscape and sustainability agenda at the time that report was produced. Had this been considered, the North Yard Site would have been included in a list of sites with potential to locate a recovery facility, due to the presence of the existing steam distribution network at HMNB Devonport which would be readily accessible a short distance from the North Yard Site. The only alternative site with comparable CHP potential is the South Yard site in Devonport which could also benefit from access to the existing HMNB Devonport steam distribution network, although this part of the dockyard is significantly more densely developed and is further from the strategic road network. All other sites considered within this report had lower potential for effective use of CHP.

An assessment of whether the North Yard site is an acceptable location for an EfW facility to deliver the SWDWP contract is made in the planning application and supporting documents, including the Environmental Statement. Potential amenity impacts have been considered in detail in the Environmental Statement. The Planning Application Supporting Statement draws together the conclusions of the Environmental Statement and concludes that with embedded good design, landscaping and acoustic mitigation schemes, the proposed development would be unlikely to have an unacceptable amenity impacts and that the proposed development will be in accordance with criterion 4 of Policy W7 of the Plymouth Waste DPD.

## Appendix 1: Additional Detailed Site Assessments

### Detailed Assessment: South Yard, Devonport

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		A	No trees at the site.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		A	No public footpaths identified.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha.  <u>Local Facilities</u> Site area below 1 ha.		A	Site thought to be approximately 3.5 ha.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		B	Likely to be compatible with nearby industrial / dockyard / employment uses.
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		B	Immediate site access appears to be sufficient or has potential for improvement, but details and land ownership unknown.

	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		E	Access partly through residential area. Distance to A38 approximately 5km depending on which route.
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	c	School and residential properties within approximately 300m of the Site. Residential property close to site access.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	B	School and residential properties within approximately 300m of the Site.
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	B	School and residential properties within approximately 300m of the Site.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	c	School and residential properties within approximately 300m of the Site. Residential property close to site access.
	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	c	Workplaces adjacent. School and residential properties within approximately 300m of the Site.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	A	Site unlikely to contain protected species given industrial surroundings but possible.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	A	Site unlikely to be part of wildlife corridor.

Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Site located on waterfront, but surrounded by other industrial uses.
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### Detailed Assessment: New England Quarry

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		C	Trees around the periphery of the site but these could be avoided. No TPOs apply.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		A	No PROWs identified.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha. <u>Local Facilities</u> Site area below 1 ha.		A	Allocated site is 19.5 ha, a large proportion of which would be considered previously developed.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		A	No adjacent employment uses.

Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		C D	Access via Smithaleigh along unsuitable rural roads.  Any new access direct from A38 at Lee Mill likely to require 3 <sup>rd</sup> party land.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		E E	Access via Smithaleigh approximately 2.4 km along unsuitable rural roads.  Any new access direct from A38 at Lee Mill approximately 1.2 km.
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	One residential property to immediate south of site, another approximately 300m west. Mitigation considered possible.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	One residential property to immediate south of site, another approximately 300m west. Mitigation considered possible.
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	C	One residential property to immediate south of site, another approximately 300m west. Mitigation considered possible.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	One residential property to immediate south of site, another approximately 300m west. Mitigation considered possible.

	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	C	One residential property to immediate south of site, another approximately 300m west. Mitigation considered possible.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	C	Allocated site partly within County Wildlife Site but this could be avoided and/or mitigated.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	C	Allocated site partly within County Wildlife Site but this could be avoided and/or mitigated.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Any stack likely to be visible from Smithaleigh, Lee Mill and other locations nearby. Could possibly be visible from A38.

### Detailed Assessment: Heathfield Landfill Site

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		C	Trees around the periphery of the site but these could be avoided. No TPOs apply.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		C	Public right of way around the periphery but could be avoided.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.

Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha.  <u>Local Facilities</u> Site area below 1 ha.		A	Allocated site is 92.9 ha, a fair proportion of which would be considered previously developed.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		A	In keeping with existing waste management uses within the allocated site.
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		A	Existing route already used to access landfill and composting facility.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		E	Access to A38 approximately 2.5 km.
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 10) of properties within 250m, including at Gappah and Fosterville. Mitigation considered possible.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 10) of properties within 250m, including at Gappah and Fosterville. Mitigation considered possible.

	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	C	Relatively small number (approximately 10) of properties within 250m, including at Gappah and Fosterville. Mitigation considered possible.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 10) of properties within 250m, including at Gappah and Fosterville. Mitigation considered possible.
	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	C	Relatively small number (approximately 10) of properties within 250m, including at Gappah and Fosterville. Mitigation considered possible.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	C	Allocated site partly within County Wildlife Site but this could be avoided and/or mitigated.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	C	Allocated site partly within County Wildlife Site but this could be avoided and/or mitigated.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Any stack likely to be visible from Gappah, Fosterville and other locations nearby. Could possibly be visible from A38. Public right of way within allocated site.

## Detailed Assessment: Heathfield Industrial Estate

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		C	Trees present on site. Presence of TPO unknown.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		A	No public footpaths identified.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha. <u>Local Facilities</u> Site area below 1 ha.		A	10.4 ha.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		C	Land identified for freight interchange facility.
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		B	Access from A38 via main estate road.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		C	Access from A38 via main estate road passing adjacent to residential area.

Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Residential properties within 250m on Brow Hill and other roads.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Residential properties within 250m on Brow Hill and other roads.
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	C	Residential properties within 250m on Brow Hill and other roads.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Residential properties within 250m on Brow Hill and other roads.
	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	C	Residential properties within 250m on Brow Hill and other roads.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	D	Part of Site is a County Wildlife Site. Rare, protected plant species present on part of the site.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	D	Part of Site is a County Wildlife Site.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Any stack likely to be visible from Heathfield and other locations nearby. Would probably be visible from A38.

### Detailed Assessment: Langage

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		B	Some trees along field boundaries to the north, east and south, although these could most likely be avoided. TPO at western end of industrial estate adjacent along boundary with Plymouth, although unlikely that development would be at western end.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		B	Two small public footpaths within existing industrial estate but in western end of estate so unlikely would be affected.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		C	Much of the land to the east of the industrial estate is currently in agricultural use, Grade III.  A
Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha.  <u>Local Facilities</u> Site area below 1 ha.		A	Unknown but likely to be such a landholding available within industrial estate / science park.

Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		A	Waste management use not inconsistent with existing industrial estate, science park and recently constructed power station.
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		A	Access considered good. Relatively recent works at Deep Lane junction made to improve access to power station.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		B	Access from A38 approximately 1.5km on good roads.
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 5) of properties within 250m. Mitigation considered possible.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 5) of properties within 250m. Mitigation considered possible.
	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	C	Relatively small number (approximately 5) of properties within 250m. Mitigation considered possible.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	C	Relatively small number (approximately 5) of properties within 250m. Mitigation considered possible.

	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	C	Relatively small number (approximately 5) of properties within 250m. Mitigation considered possible.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	B	Unknown but possible given within / adjacent to rural area.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	C	Hedgerows present but could be avoided / mitigated.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		C	Any stack likely to be visible from nearby properties at Langage, Chaddlewood, Hemerdon and Sparkwell. Likely to be visible from A38.

### Detailed Assessment: Wrangaton

Subject Area	Objectives	Indicators	Thresholds of Concern	Opportunities	Grading	Rationale
Land Use	1. To avoid the loss or damage to protected trees and groups of trees.	Existence of TPO.	Any loss or damage.		C	Trees present on periphery and within western end of site. Presence of TPO unknown.
	2. To avoid impact upon public footpaths and public rights of way.	Existence of public footpath and public rights of way.	Any direct/ indirect impacts.		A	No public foot path identified.
	3. To protect the best and most versatile agricultural land.	Agricultural land quality.	Avoidance of Grades I, II and IIIa.		A	Not agricultural land.

Physical Size	1. To ensure site is physically large enough to accommodate facilities.	Land available for development – preferably previously developed or existing redundant buildings.	<u>Strategic Facilities</u> Site area below 2 ha.  <u>Local Facilities</u> Site area below 1 ha.		A	4.7 ha.
Economic	1. To avoid detrimental impact on employment uses.	Nature and character of existing employment uses.	Any direct/indirect effects.		B	Identified as Development Policy Area, adjacent land identified for employment development – uses not incompatible.
Traffic and Transportation	1. To ensure site is physically accessible to a standard acceptable to the highway authority.	Adequate unconstrained highway frontage.	Any direct/ indirect impacts.		B	Road access considered acceptable in highways terms.
	2. To promote sites in locations that avoid access through residential areas and sensitive land-uses.	Residential areas and sensitive land-uses.	Any direct/ indirect impacts.		D	Restricted access at Wrangaton Junction, therefore use of South Brent Junction and 'U-turn' required for access from A38. Route would travel through Wrangaton village which has a 30 mph restriction.
Amenity	1. To minimise potential detrimental impacts of noise/vibration.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	B	Limited residential properties nearby.
	2. To minimise potential detrimental impacts of odour.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	B	Limited residential properties nearby.

	3. To minimise potential detrimental impacts of nuisance (vermin, pests, litter, lighting pollution).	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone	B	Limited residential properties nearby.
	4. To minimise any potential detrimental effects to air quality.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Any direct/ indirect impacts.	General amenity exclusion zone.	B	Limited residential properties nearby.
	5. To minimise any potential detrimental effects from bioaerosols.	Location of sensitive land uses (e.g. residential, schools, hospitals).	Composting Facility located within 250 m of workplace or boundary of dwelling.	General amenity exclusion zone.	B	Limited residential properties nearby.
Nature Conservation	1. To minimise the impact on wildlife interests.	Presence of protected species	Any direct/ indirect impacts.	Enhancement of habitat.	B	Presence of protected species unknown. Partially undeveloped land could be of ecological value.
		Location of wildlife corridor.	Any direct/ indirect impacts.	Enhancement of corridor.	B	Presence of protected species unknown. Partially undeveloped land could be of ecological value.
Landscape and Visual	1. To prevent the creation of unacceptable visual impacts.	Magnitude and sensitivity of potential receptors.	Many viewers affected and moderate/serious change in view from residential/public open space/ right of way.		D	Site adjacent to Dartmoor National Park to the north and near to AGLV to south. Likely to be visible from A8.

