Proposed Energy Recovery Centre
Micheldever Rail Sidings

Non Technical Summary

July 2012

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Introduction

1 This document comprises a Non Technical Summary (NTS) of an Environmental Statement and has been prepared by SLR Consulting Limited (SLR) on behalf of Clean Power Properties Limited and Network Rail Infrastructure Limited (the applicant). This NTS is part of a package of documents being submitted to Hampshire County Council in support of a planning application in respect of land at Micheldever railway sidings, Micheldever Station. The planning application is for the construction and operation of "*Energy Recovery Centre*" (ERC) incorporating both Advanced Conversion Technology (ACT) and an Anaerobic Digestion (AD) plant, together with ancillary facilities.

Planning and EIA

2 The European Environmental Impact Assessment Directive[1] (the "EIA Directive") requires that, before granting 'development consent' for projects, including development proposals, authorities should carry out a procedure known as environmental impact assessment (or "EIA") of any project which is likely to have significant effects on the environment. In the UK, development consent includes the grant of planning permission.

3 An Environmental Statement (ES) is a report of an EIA that is required to be submitted with a planning application.

4 Under the EIA legislation, the planning application for Micheldever railway sidings is to be accompanied by an ES.

Application Submission Package

5 This NTS comprises Volume 4 of a larger multi volume submission to accompany the planning application. In addition to the formal planning application forms and certificates, the full submission comprises:

- Volume 1: Planning Supporting Statement;
- Volume 2A: Environmental Statement (ES);
- Volume 2B: ES Technical Appendices
- Volume 3: Design and Access Statement; and
- Volume 4: A Non Technical Summary of the ES.

6 The NTS is a formal part of the ES. It provides, in non-technical language, a brief summary of the likely significant effects that the proposed development would have on the environment.

Overview of the application

7 The development of the ERC would consist of the following:

- 8 megawatt (MWe) Pyrolysis Advanced Conversion Technology (ACT) plant with front end autoclave plant, which would require 100,000tpa of non hazardous Municipal Solid Waste (MSW) and Commercial and Industrial (C&I) Waste; and
- 2MWe AD facility which would require approximately 54,000tpa of organic, digestible waste (food waste, green waste etc).

8 The proposed ERC is located at National Grid Reference SU 51981 43525 and consists of approximately 3 Hectares (6 acres) of land to the north of Micheldever Station and to the south of the A303, and is referred to in this document as the application site. It comprises previously developed land which was used for the storage of fuels as part of a rail served oil terminal

1. Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, as amended by Council Directive 97/11/EC and Article 3 of Council Directive 2003/35/EC. Consolidated version at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1985L0337:20030625:EN:PDF

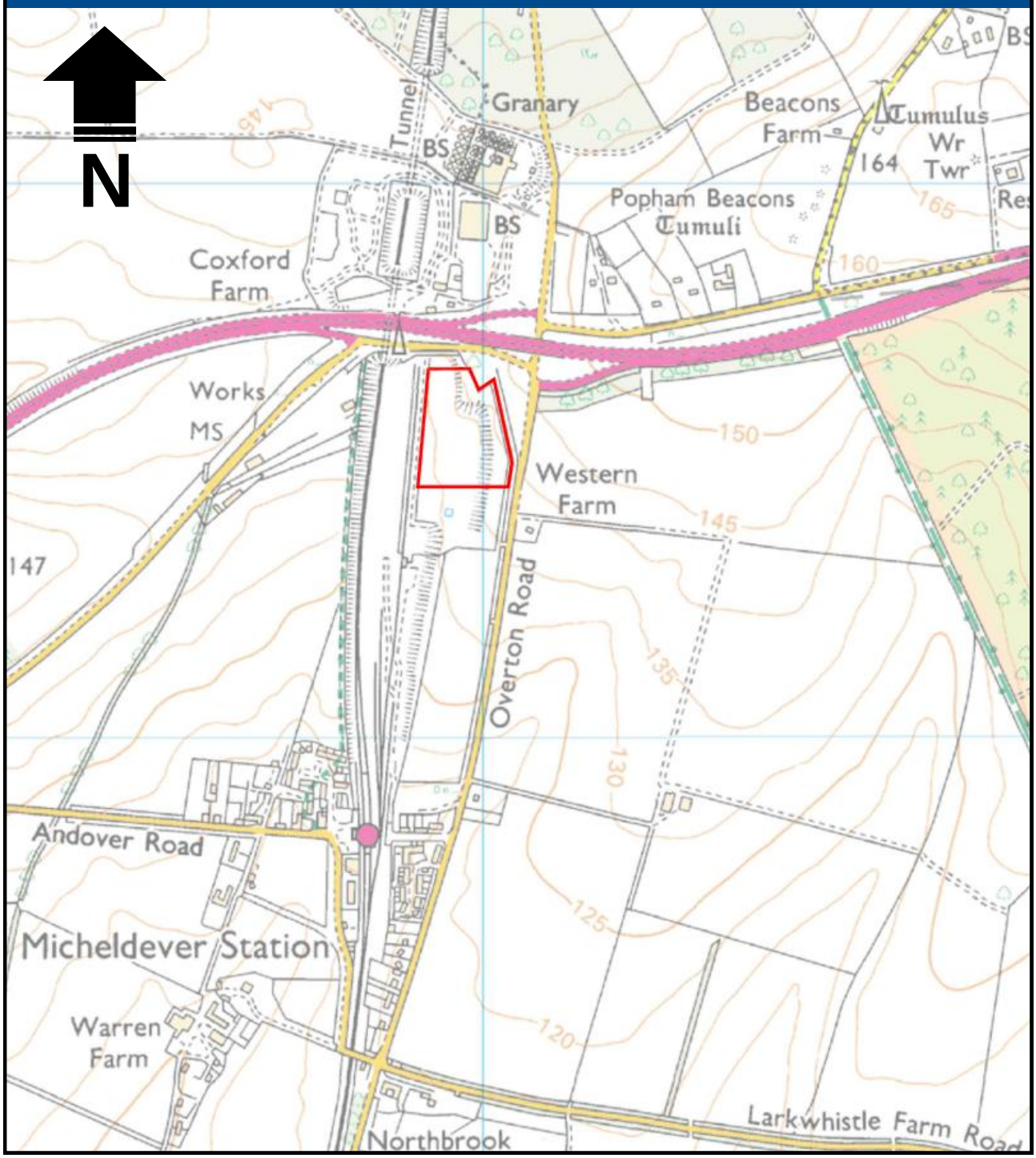
The Site

8 The application site comprises previously developed land which was previously part of the rail served oil terminal. This former development is responsible for the change in levels across the application site which vary from 141-140m AOD adjacent to the Overton Road to around 125m to 131m AOD where the fuel tanks are located.

9 Land immediately adjoining the application site is identified in the Draft Hampshire Minerals and Waste Plan as potentially suitable for use as an aggregate rail depot and as having some potential for waste uses.

10 Micheldever Oil Terminal SINC lies within the site. It has been designated for its species-rich unimproved chalk grassland and was last surveyed in 1992 (it was designated in 1995).

Figure 1 – Site Location (not to scale)



The Proposed Development

11 The proposed development would consist of the following:

- a 8MWe Pyrolysis Advanced Conversion Technology (ACT) plant with front end autoclave plant, which would require 100,000tpa of residual non hazardous Municipal Solid Waste (MSW) and Commercial and Industrial (C&I) Waste; and
- a 2MWe AD facility which would require approximately 54,000tpa of organic, digestible waste (food waste, green waste etc).

12 The proposed purpose designed waste reception and processing building is 130 metres long and 40 metres wide. It is 9 metres high to the ridge.

13 Ancillary and support infrastructure would include:

- weighbridge and offices – for monitoring and recording all wastes coming onto and leaving the ERC;
- a gasmeter for gas storage (6m diameter and 9m high);
- a stack for the pyrolysis ACT plant (20m high and max 120cm diameter);
- Three gas engines (housed within the building;
- a stack for each of the gas engines (20m high and max 100cm diameter) arranged in a group within an architecturally designed enclosure;
- an emergency flare;
- an electricity substation (5m by 3m and 3m high)
- two AD digester tanks (20m diameter) and two AD digestate tanks (25m diameter) all 9.5m high;
- 250m^2 of solar panels situated on the roof; and
- new access road and car parking for visitors and staff.

14 Buildings and operational areas would be situated on an impermeable concrete pad. A significant amount of water from the operations would also be re-circulated through the process. There would be no discharges to controlled waters. Rainwater falling onto buildings would be harvested for use in steam generation.

15 The above has been summarised into the following description of the development:

"***The construction and operation of a 8 MWE Pyrolysis Advanced Conversion Technology (ACT) plant including a 2 MWE Anaerobic Digestion Plant associated office, visitor centre, with new access road and weighbridge facilities, solar panels, associated landscaping and surface water attenuation features"***

New Site Access

16 The existing access onto New Road which currently serves the rail sidings site is not considered suitable for traffic associated with the application site.

17 It is therefore proposed to construct a new priority T-junction onto Overton Road some 230 metres south of the A303 over bridge.

18 All traffic would be required to enter and leave the application site from the north towards the A303.

19 No traffic to the south would be permitted.

20 The proposed improvements would be undertaken within highway land and are proposed to be dealt with by way of an associated highways agreement.

Hours of Operation and Staffing

21 The waste management processes would take place 24 hours a day, seven days a week. Deliveries would be restricted to a 10 hour working day and take place Mondays to Fridays (08.00 to 18.00 hours) and Saturday mornings only (08.00 – 13.00 hours).

22 The development would employ three administration staff to work during typical office hours (9am to 5pm) and a further 28 staff would be split into four groups of seven. Each group would be made up of four sorting staff and three plant operatives, with each group working 12-hour shifts on a rotational programme of four days on/four days off. Hence, there would be 10 staff on-site during the day and seven during the night shift.

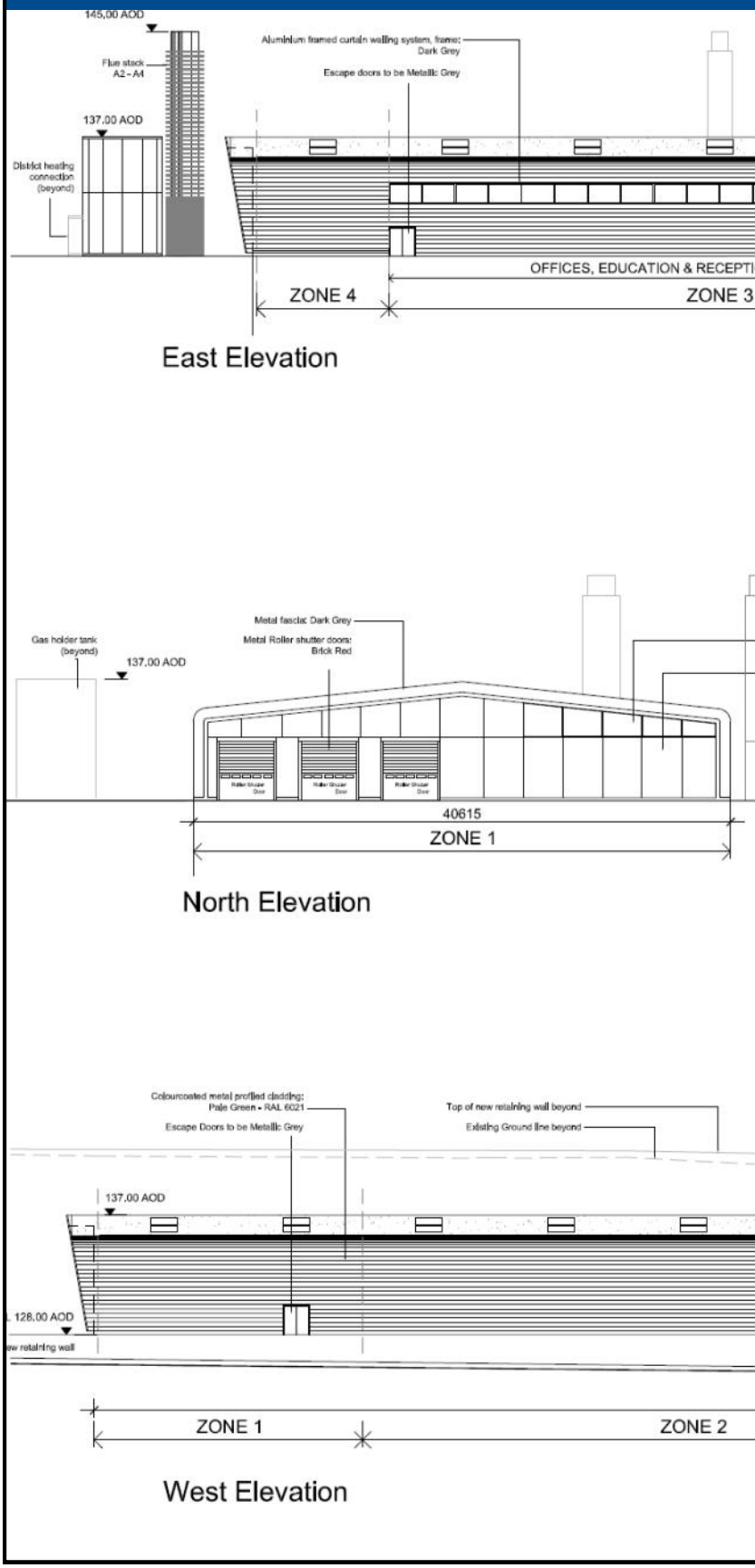
Grid Connection

23 An underground grid connection to the

The Proposed Development

substation at Overton has been identified and the proposed route would follow public highways. It is considered that in the event this connection is installed by a statutory undertaker then the works would be permitted development, under Part 17 Class G of the General Permitted Development Order.

Figure 2 – Elevations of Proposed Buildings (n



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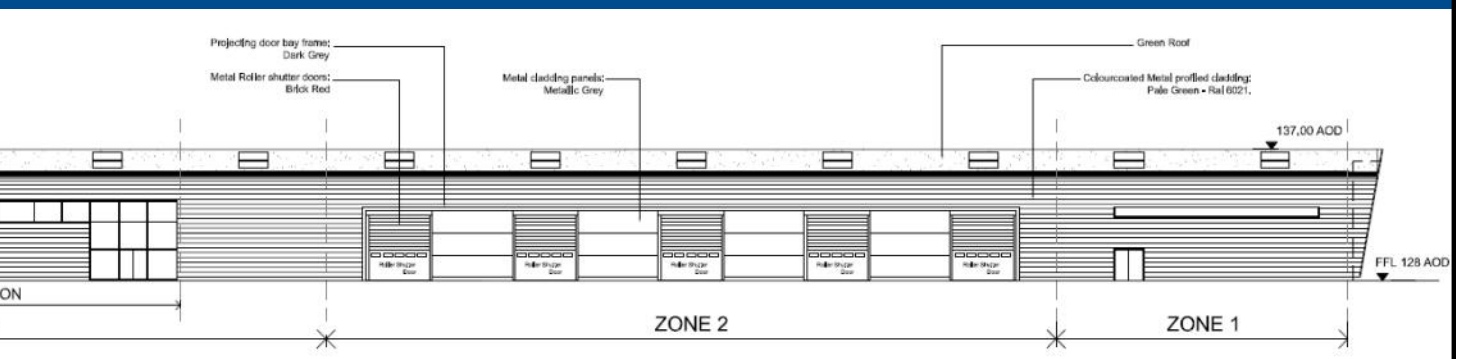
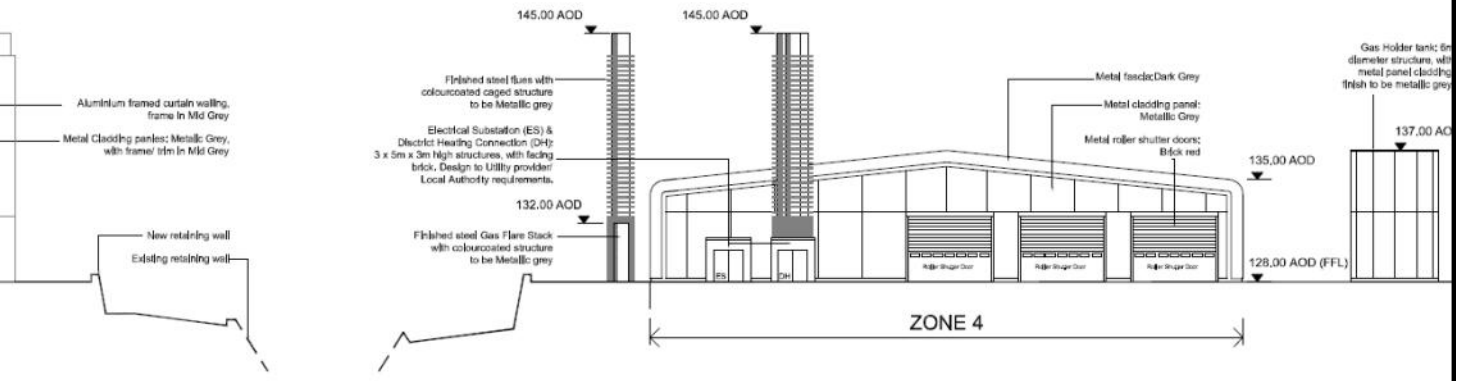
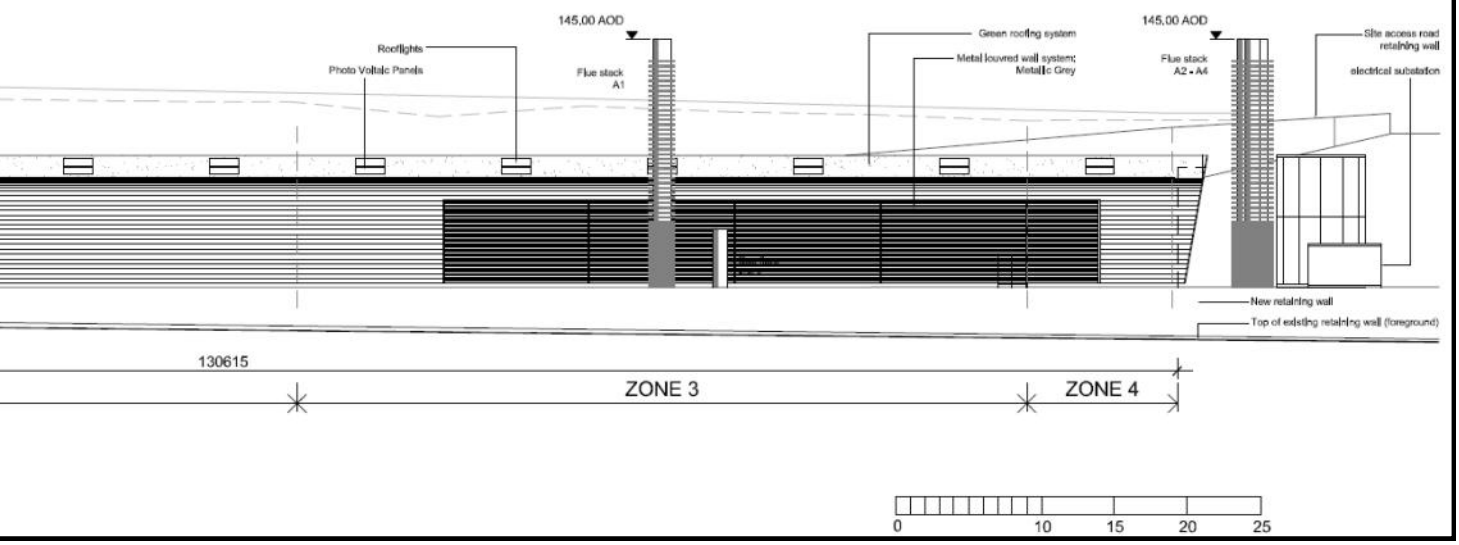


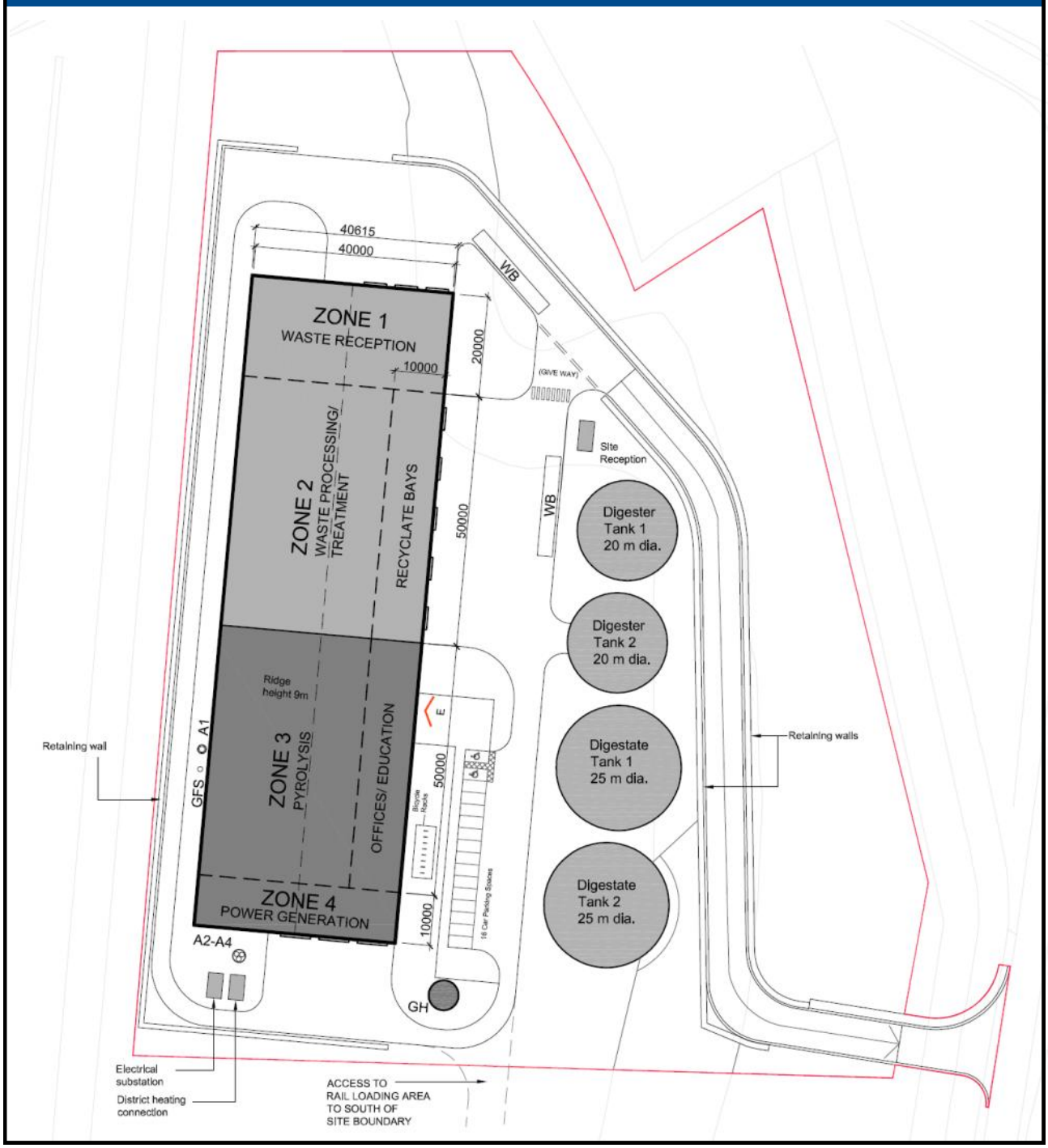


South Elevation



The Proposed Development

Figure 3 – The Proposed ERC



Policy Background

24 The Government is committed to a plan led system, with the Development Plan forming the basis of all planning decisions. Legislation confers a presumption in favour of development proposals which accord with the Development Plan, unless material considerations indicate otherwise.

25 The planning application will therefore be determined in accordance with prevailing policies at national and local level. National planning policies comprise the National Planning Policy Framework and Planning Policy Statement 10 "*Planning for Sustainable Waste Management*". Local policies translate national strategic issues into site specific proposals through the Development Framework comprising:

- The South East Plan 2008 – Regional Spatial Strategy for the South East.
- Hampshire, Portsmouth, Southampton and New Forest National Park Minerals and Waste Core Strategy 2007;
- Draft Hampshire Minerals and Waste Plan (2011) not yet adopted; and
- Winchester District Local Plan Review- saved policies (Adopted 2006)

26 The application is generally free from land use planning constraints; however, it is affected by a local ecological designation (Micheldever Oil Terminal SINC) This designation has been taken into account within the ES.

27 There are a range of material considerations, including, but not limited to:

- Waste Strategy (2007);
- Government Review of Waste Policy in England, (2011);
- EN-1 Overarching National Policy Statement for Energy (2011);
- EN-3 Renewable Energy (2011);

28 The Development Framework seeks to reconcile the development needs of society against safeguarding the environment and amenity of local communities. In so doing, the Development Framework sets out a series of Policies which seek to guide developments in terms of acceptable limits and design, whilst ensuring interests of archaeological, cultural heritage, ecological interest and importance are protected, and that the local amenity and environment of communities are not derogated through pollution to air, land or water.

29 The development Framework also seeks to provide guidance on the location of new development.

30 At the same time, consideration has been given to policies relating to the provision of energy. National Policy and guidance indicates that obtaining energy from waste falls within the scope of "*renewable energy*", which forms an integral part of the government's overall energy strategy.

31 Through the EIA process, it has been able to demonstrate that the development proposals would not conflict with the stated aims and policies of the Development Framework.

Alternatives

32 The proposed development has evolved over a number of design iterations, responding to local authority planning and development aspirations and taking account of the applicant's development objectives, design aspirations and prevailing environmental constraints.

33 The evolution of the proposed development has therefore responded to a variety of design and environmental issues as described above and the resultant proposals are considered to offer the most advantageous design solution.

Potential Environmental Effects

34 One of the main aims of the EIA (please refer to Volume 2a) is to assess the proposals and ascertain what the likely significant environmental effects would be. Where significant effects are identified, mitigation measures to avoid, offset or reduce the significant adverse effects of the development are considered. As such, the EIA forms part if an iterative design process.

35 These measures can relate to any of the three key phases of the project: design, construction or operation.

Traffic and Transport

Potential Environmental Effects

36 An assessment of the potential impacts of the proposed development on the local highway network has been undertaken, as reported in Chapter 6 of the ES.

37 The only sensitive area in the locality of the application site is the settlement of Micheldever Station. The impact of the development would be limited to a nominal increase in traffic by staff of the facility which confirms that the effect of such movements would be significantly below the 10% threshold identified above.

38 Consequently, it is concluded that there would be no discernible impact of the development in this location and it therefore follows that any environmental impacts as a result of the proposed development traffic would not be significant.

39 The proposed access would operate well within the theoretical capacity limitations. The assessment suggests that the junction would operate with around 60% reserve capacity. Moreover, the results confirm that there would be no material queuing of vehicles on Overton Road that would cause significant delay to existing traffic.

40 In view of the low magnitude in the change in traffic and the lack of exposure to vulnerable road users, allied with the fact that the highway network would continue to operate well within its available capacity, it is concluded that there would be no material or significant worsening of highway safety risks as a result of the proposed development.

Summary of Mitigation Measures

41 It is proposed to construct a new priority T-junction onto Overton Road some 230 metres south of the A303 over bridge. The arrangement includes a 15 metre radius with 1:10 taper over a 25 metre section, which is designed to accommodate the swept-paths of goods vehicles turning left onto Overton Road. A smaller 6 metre radius restricts inbound movements from the south to light vehicles only. In addition, Overton Road would be widened to 7.3 metres around the proposed access.

42 The new junction has been designed for a 50mph design speed and thus the visibility envelope created at the junction is 160 metres from a 2.4 metre set-back position. In order to facilitate visibility in the vertical dimension, it is proposed to reconstruct the part of Overton Road where a crest and hidden dip currently limit forward visibility along the road. In so doing, the proposals would help to alleviate an existing deficiency in the road network and thus afford a wider benefit to the community.

43 In order to mitigate the impact of construction traffic during network peak hours, a Construction Phase Travel Plan would be developed and implemented by the successful contractor. Elements of this specific plan would include:

- coordination of car share for construction personnel;
- implementation of contractor operated mini bus service as necessary;
- restriction of unnecessary vehicle movements during the day; and
- co-ordination of deliveries to arrive outside of peak times where appropriate.

44 With implementation of these measures, it can be expected that the volume of light vehicle trip generation can be brought down below the levels assessed for the operational phase of the development.

45 In addition a travel plan would be prepared which would be aimed at encouraging staff to travel to and from the development using sustainable non -car travel modes.

46 As part of the Plan, a Travel Plan Coordinator (TPC) would be appointed who would have the responsibility for inducting new staff to the travel plan and highlighting to them the health and environmental benefits associated with travelling to work by modes other than car.

47 The TPC would provide copies of the travel

plan to all members of staff and updated versions would be provided if and when required. The TPC would also be responsible for maintaining a database of all staff addresses, contact details and work patterns.

48 The TPC would regularly review this database to identify where opportunities exist for staff to share their journey to work through car sharing. This would be supplemented by details of web based car share clubs such as www.2carshare.com and www.nationalcarshare.co.uk which would be provided within the Plan. This would increase the potential for staff to car share with employees of any business located nearby.

49 Car sharers would also be guaranteed a lift home in case of emergency or if the driver of the car share vehicle is required to leave work outside of the agreed hours. This would allay fears amongst potential car sharers of being stranded.

50 The proposed development includes 16 parking spaces and this figure reflects operational car parking demand for staff and visitors. It also includes an allowance for shift changeovers in order to avoid overspill parking on the internal circulation roads or loading/unloading areas while the shifts are changing. Of the 16 car parking spaces, electric vehicle charging points (EVCP's) would be provided at a 20% active/20% passive ratio to encourage the uptake of electric vehicles

Air Quality

Potential Environmental Effects

51 An assessment of the air quality impacts associated with the proposed development has been undertaken. The assessment, contained in Section 7 of the ES has considered:

- construction dust;
- combustion pollutants from stacks serving the ACT and AD processes;
- Air Quality Strategy Pollutants from vehicle exhausts during construction and operation; and
- odour and dust emissions during the operational phase.

52 The assessment of construction dust has found that some mitigation measures would be required (primarily during earthworks) due to the proximity to ecological receptors. However with adoption of these measures the residual impact is considered to be insignificant.

53 The additional traffic associated with both the construction and operation of the proposed ERC is below the recognised criteria for assessment (classified as 'neutral') and therefore the impact associated with vehicle exhaust emissions is considered to be insignificant.

54 In terms of process emissions (odour, combustion pollutants and dust) from the proposed development during operation, the permit would not be approved by the EA unless they are satisfied that operations would not cause significant pollution to the environment (including offence to human senses) or harm human health.

55 Given the low potential identified for the release of odour and dust from the proposed development with the extensive designed-in mitigation measures appropriately designed and effectively employed, the residual impact is considered to be insignificant.

56 The findings of the detailed dispersion modelling assessment of combustion emissions from the stacks serving the processes at the proposed ERC has found that for all pollutants the maximum predicted long-term and short term impacts on air quality and sensitive ecosytems would be classified as insignificant.

57 In summary the proposed development is not predicted to lead to exceedences of applicable air quality standards for either human or ecological receptors.

Summary of Mitigation Measures

58 In order to control potential impacts during the construction phase, the following mitigation measures are proposed:

- vehicles would be sheeted to prevent loss of materials off-site;
- storage locations for all materials that create dust, including soil, would be located away from development boundaries as far as practicable;
- regular inspection of local roads to check for dust deposits and any deposits removed;
- use of water as a dust suppressant as and when required; and

- a trained site manager (or his deputy) would be on site during working hours to be responsible for proper implementation of dust mitigation measures.

59 The environmental design measures to mitigate the risk of odour generation and release during the operation of the proposed ERC are as follows:

- enclosure of the handling and sorting of wastes within a building;
- fast acting roller action doors to ensure effective containment within the building;
- adoption of good housekeeping measures which would minimise the magnitude of odour generation, to include regular cleaning of waste reception area and minimise the storage time of raw waste;
- extraction of air from within reception building and effective odour abatement;
- vented steam from enclosed autoclave process directed to pyrolysis units for effective thermal abatement;
- anaerobic digestion process undertaken within sealed tanks and biogas directed to CHP facility; and
- provision of back-up odour control plant to provide abatement of odour from reception area when pyrolysis units and gas engines are inoperable.

60 In respect of combustion emissions the filtration unit removes all particulate materials to below 5mg/m^3 prior to discharge to atmosphere. Abatement plant for oxides of Nitrogen with a maximum potential reduction efficiency of 95% would be fitted and EU Directive 2000/76/EC on the Incineration of Waste (known as the Waste Incineration Directive) requires flue gases to be retained at temperature of 850°C for a period of 2 seconds.

61 All emissions from the pyrolysis plant would be monitored using continuous emissions monitors (CEMS) located on an exhaust stack and the CEMS would be WID compliant and monitor particulates, oxides of Nitrogen, carbon monoxide, and Volatile Organic Contaminants (through surrogate monitoring of carbon monoxide). The continuous monitor would operate on a 24-hour basis and would include the facility for on-line monitoring of the gas concentrations.

Noise

Potential Environmental Effects

62 The assessment has considered both the potential for the construction and operational proposals to give rise to noise impacts at the closest noise-sensitive receptors.

63 The assessment, set out in Chapter 8 of the ES, has found that:

- construction noise levels are predicted to be well below the recognised 70dB criterion adopted for this assessment at all receptors;
- when assessed against the existing ambient noise levels construction traffic movements would have no impact at any other receptor locations assessed;
- the assessment has shown that the worst-case operational noise rating levels generated by the proposed ERC, with the doors open, would lead to a situation between marginal significance and complaints likely during the night-time at Western Farm. In order to mitigate the likelihood of complaints all doors at the facility would remain closed at night; and
- when assessed against the existing ambient noise levels site-related operational traffic movements would have a minor, barely perceptible, impact at Western Farm on Sunday, at The Boundary on Sunday and during the week with no impact at any other receptor locations assessed.

64 Based on the results of the assessment, noise should not pose a material constraint for the proposed development.

Summary of Mitigation Measures

65 The assessment of construction noise has shown that the adopted criterion is unlikely to be exceeded at the nearby noise-sensitive receptors.

66 The adoption of Best Practicable Means is usually the most effective means of controlling noise from construction sites. In addition, the following measures would be considered, where appropriate:

- phasing the works to maximise the benefit from perimeter structures;

- any compressors brought on to site would be silenced or sound reduced models fitted with acoustic enclosures;
- all pneumatic tools would be fitted with silencers or mufflers;
- any deliveries would be programmed to arrive during daytime hours only.
- care would be taken when unloading vehicles to minimise disturbance to local residents;
- delivery vehicles would be prohibited from waiting within the site with their engines running;
- all plant items should be properly maintained and operated according the manufacturers' recommendations in such a manner as to avoid causing excessive noise. All plant would be sited so that the noise impact at nearby noise-sensitive properties is minimised;
- local hoarding, screens or barriers would be erected as necessary to shield particularly noisy activities; and
- problems concerning noise from construction works can sometimes be avoided by taking a considerate and neighbourly approach to relations with local residents. Works would not be undertaken outside if the hours agreed with the local authority.

67 The assessment has shown that noise generated by construction traffic movements would have no impact at the receptor locations assessed therefore no mitigation measures are considered necessary.

68 In order to mitigate the likelihood of complaints during the operational phase it is proposed that all doors at the facility remain closed at night.

Water Environment

Potential Environmental Effects

69 Without the incorporation of mitigation measures the construction and operation of the proposed ERC has the potential to impact on groundwater quality. This would be from the risk of contaminated runoff being generated from the following potential sources:

- accidental spillage of raw materials, fuels and lubricants, required over the short term by construction plant and over the longer term from operation of the facility and from the vehicles moving around the site, including the accidental spillage of potentially polluting liquids;
- potential release of fire fighting water in the unlikely event of a fire at site;
- increase in suspended solids; and
- the change in land use may result in contaminated runoff from the weighbridges and vehicle movement areas.

70 During the construction phase, the potential for pollution of any groundwater by raw materials, fuels, other liquids and runoff from the operational site would be limited by best practice techniques and inherent compliance with appropriate regulations.

71 The likelihood of groundwater contamination due to a leak or spill of pollutants during construction or contaminated runoff during operation of the site is therefore considered to be low due to the short period during which there is a risk, the limited quantities of pollutants being handled or stored at any one time, and the significant vertical distance between site ground levels and the underlying groundwater table.

72 The potential for pollution of any groundwater by raw materials, fuels, other liquids and runoff from the operational site would be limited by robust site practices. The likelihood of groundwater contamination due to a leak or spill of pollutants during construction or contaminated runoff during operation of the site is therefore considered to be medium due to the significant vertical distance between site ground levels and the underlying groundwater table.

73 During the operational phase, it is considered that the potential for occurrence of pollution of potable groundwater in the chalk aquifer is medium.

74 Owing to the significant vertical distance between site ground levels and the underlying groundwater table, contaminants would tend to be hydraulically separated from the aquifer and the travel time through the intermediate geology would provide a degree of mitigation.

75 In the event of a fire at the ERC there is potential, without mitigation, for uncontrolled discharge of contaminated water from site which could infiltrate to groundwater. The likelihood of this occurring is low due to the fire suppression

measures inherent provided as part of the proposed scheme.

76 Given the site setting it is considered that the proposed development would have a limited impact on the groundwater flow regime for the following reasons:

- the significant depth below ground level to the underlying Aquifer;
- the lack of groundwater abstractions within 2km of the application site;
- the presence of made ground and structures beneath western areas of the baseline site; and
- the shallow foundations of the proposed building.

77 During the construction phase, in the short term, hydrocarbon pollution from untreated runoff associated with roads and car parking areas could cause issues for surface water quality without suitable mitigation but due to the significant lateral distance (in excess of 3.5km) between the site and the nearest surface water receptor the magnitude is assessed low.

78 During the operational phase, hydrocarbon pollution from untreated runoff associated with roads and car parking areas could cause issues for surface water quality without suitable mitigation.

79 It is considered that there is a high probability of increased surface water runoff during the short, medium and long term and the significance of this impact has the potential to be medium in the absence of mitigation.

80 The development of the site would not potentially lead to an increase in population within a flood risk area during the construction and operation phases as the site lies in the low probability of occurrence Flood Zone 1. A detailed assessment of the flood risk to the site is presented in the Flood Risk Assessment (see Technical Appendix 9 Volume 2B).

Summary of Mitigation Measures

81 Various best practice techniques would be incorporated within the management procedures for construction and operation activities on site in order to protect the water environment from pollution incidents. The mitigation measures can be summarised as follows:

- during construction there would be heavy plant and machinery required on site and as a result it is appropriate to adopt best working practices and measures to protect the water environment, including those set out in the Environment Agency's Pollution Prevention Guidance (PPG1);
- also n accordance with the EAs guidance (PPG2) all above ground on-site fuel and chemical storage would be bunded;
- an emergency spill response kit would be maintained on site;
- a vehicle management system / road markings would be put in place wherever possible during construction and operation to reduce the potential conflicts between vehicles and thereby reduce the risk of collision; and
- a speed limit would be enforced on site to reduce the likelihood and significance of any collisions.

82 All discharges from highway and hardstanding areas would be appropriately treated prior to release to ensure that any discharge meets the required environmental quality standards as to be set out within the discharge consent.

83 Appropriate proprietary pollution control measures (e.g. silt traps, trapped gullies, petrol interceptors) would be incorporated within the surface water drainage network prior to discharge to the infiltration basin and infiltration swale facilities.

84 All rainwater falling directly onto the building roof areas would be harvested, treated, and reused within the process for steam generation.

85 Living 'green' roof technology would be provided to intercept roof runoff and provide a degree of treatment prior to reuse.

86 All process water used by the plant would be recycled and recovered within the central water treatment and recovery plant. The plant has been designed to recover all grey water as well as utilise all water from the building operations, internal drains and rainwater.

87 For the remainder of the application site it is proposed to provide Sustainable Drainage Systems (SuDS) in the form of a infiltration basin, porous paving across selected parking bays, infiltration swales and filter drains / soakaways, sited to complement the proposed development layout and the existing topography.

Where appropriate, SuDS features would include marginal planting around the basal perimeter of the basins and within carefully profiled pools in order to enhance water quality and biodiversity offering. Similarly, planting would be specified along selected, carefully profiled sections of the swales.

88 SuDS features would be maintained and managed by an appropriate management company (to be established by the applicant) over the lifetime of the development, but would be managed sympathetically in line with ecological and habitat constraints.

89 Robust flood mitigation measures are proposed in order to adequately manage and reduce risks to an acceptable level for the lifetime of the proposed development. Details of the proposed mitigation measures are summarised below:

- Finished floor levels should be elevated a minimum of 150mm in relation to immediately adjacent external ground levels in order to prevent the ingress of overland flow into the proposed buildings by providing a level differential above any shallow overland flood flow route;
- Proposed highways / drainage would be designed in accordance with latest Sewers for Adoption criteria, incorporating appropriate overland flood flow routes for the conveyance of excess floodwater towards areas of low vulnerability land use;
- Where vulnerable development may be affected by overland flows, or where overland flows emanate from off-site areas, it is proposed that carefully sited / orientated landscape buffers, cut-off drains, filter strips, and swales be provided to stem the overland progress of excess floodwater.

90 SuDS facilities, in the form of an infiltration basin, infiltration swales, porous paving, and filter drain / soakaways in conjunction with carefully profiled landscape areas are proposed in order to retain floodwater onsite for up to and including the critical 1% annual probability storm event incorporating an allowance for climate change (applied as a 20% uplift in peak rainfall intensity) over the lifetime of the proposed development. The outline SuDS mitigation strategy and overland flow mitigation measures are presented within the FRA.

91 Due to the low residual risk of flooding from an event exceeding the proposed design criteria no specific flood resilience measures are necessary.

Land Quality

Potential Environmental Effects

92 It is acknowledged that further detailed ground investigations would be required before a remediation strategy for the site can be developed.

93 Two forms of assessment have been carried out by SLR:

- the first, a land quality assessment, takes account of the proposal to construct commercial buildings and the likely impact of contamination identified at the site on humans, the built environment and Controlled Waters, followed by measures to mitigate the risks to these receptors.
- the second, the Development Impact Assessment, discusses the potential impacts of the proposed development on soils and near surface geological deposits via erosion, disaggregation, compaction and pollution.

94 With respect to geology, ground conditions and land quality it is concluded that, should appropriate mitigation measures be implemented (following completion of ground investigations and development/implementation of a remediation strategy), there would be no significant residual impacts or cumulative effects associated with the proposed redevelopment.

Summary of Mitigation Measures

95 At present there is no site specific data relating to soil and groundwater quality. It would therefore be necessary to obtain such information as part of ground investigations at the application site. These investigations would serve several purposes, namely to obtain information in relation to the shallow and deeper soil quality at the site, to obtain information on groundwater quality under the site, to obtain information in relation to petroleum vapour risks associated with soil and groundwater at the site, to obtain information for use in geotechnical assessment of the foundation and paved areas design and to facilitate soils handling either on or off site as part of the development.

96 Depending upon the results of ground

investigations, it may be necessary to implement a programme of soil/groundwater remediation and/or to incorporate appropriate protection measures within buildings to protect building integrity and human health.

97 Such measures could include soil excavation, groundwater treatment, vapour extraction, installation of impermeable barriers within buildings or a combination of approaches.

98 The presence of former fuel storage tanks under part of the application site indicates further assessment of the potential risks to buildings and their occupants would be required. However, overall it is considered unlikely that the safety and integrity of the proposed development would be compromised by the presence of the former fuel tanks in the western area of the application site, although it is acknowledged that the inclusion of appropriate vapour protection measures may be appropriate within buildings.

99 Additional mitigation measures include:

- Institute procedures for the storage and handling of:
  - ⇒ all hazardous materials;
  - ⇒ construction wastes; and
  - ⇒ fuels.
- Ensure that:
  - ⇒ spill response kits are provided;
  - ⇒ vegetation is removed only if required;
  - ⇒ the extent to which large areas of bare soil are expose to the wind is minimised;
  - ⇒ stockpiles are grassed or covered to prevent erosion;
  - ⇒ soil is excavated in order of horizons and each soil-type is kept in separate piles;
  - ⇒ water is directed away from slopes using a surface water drainage system;
  - ⇒ siltation traps are installed in watercourses/ditches, if necessary;
  - ⇒ wide tyres / tracks are fitted to construction plant;
  - ⇒ the site road network is limited to a few main tracks; and that compacted areas are tilled once activities have ceased.

Landscape

Potential Environmental Effects

100 A landscape and visual assessment of the proposed development has been completed in accordance with accepted guidance. The application site is set down in the landscape and enclosed by mature tree belts adjacent to an area safeguarded as a rail-head aggregates depot.

101 There are no national landscape designations within the 6km study area. The site itself is designated as an SINC for its calcareous grassland habitats and there is a group tree preservation order along the eastern boundary.

102 The landscape surrounding the application site is consistent with the key characteristics for the "*North Dever Downs Character Area*" and "*Open Arable Character Type*" as set out in the published assessments. For example the rolling and relatively large fields with straight boundaries, strong field boundaries, with tall, thick hedges, a relatively high proportion of hedgerow trees and small assorted semi-natural ancient woodlands give a degree of visual enclosure. There are long panoramic views of open farmland, contained by distant woodland to the east and north and a well-treed railway embankment running in a north-south direction, which is a visually prominent feature within the area. The wider area has a remote, rural character, although the A303 and railway detracts from this to the north of the area.

103 However, more locally the application site and adjacent railway sidings contrast with the character of the wider study area. The site consists of bare ground (with large areas of species-rich unimproved chalk grassland), has an engineered, linear form (with the railway sidings cutting into the sites topography) and although there is some natural regeneration and mature trees/woodland plantation around the periphery of the site, the character is of a largely abandoned/ derelict state. Overall the character of the site is of "*Previously Developed Land*".

104 The proposed development would alter the landscape character of the site to '*Active Industrial Land'* and thus constitute a few changes to its fabric and therefore of a slight to moderate and neutral effect.

105 The effect on the wider landscape resource (North Dever Downs Landscape Character Area) would be very limited, due to the small footprint of

the site and its existing condition; but also limited visibility. The majority of the fabric and views from the published Landscape Character Area would remain intact. Overall there would be no significant landscape effects.

106 The viewpoint assessment identified a localised significant adverse visual effect, immediately adjacent to the isolated residential property at Western Farm, at Viewpoint 5 east of the application site. This very restricted viewpoint position would receive views of the site entrance, vehicle movements and associated tree loss.

107 All other representative viewpoints in the study area, as agreed with the local planning authority, were less than significant and either neutral in nature, or considered to be none resulting from the final development design, degree of screening and nature of landscape mitigation.

Summary of Mitigation Measures

108 The assessment has indicated that the building would be set down and hidden from the majority of views.

109 A detailed scheme for materials to be used for the building would be submitted and agreed with the local planning authority.

110 At this stage, it is proposed that the colour of the building and tanks would be similar to the colours found locally, such as “red brick, flint and slate” as mentioned in the North Dever Downs Landscape Character Area, or from natural materials such as exposed chalk and green vegetation.

111 Areas of chalk grassland would be retained, as much as practicable, within the margins of application site. Areas vulnerable to construction traffic would be protected during the construction period.

112 The internal vehicle access route would cut through native shrub/scrub planting. The existing tree belts to the north of the application site would be retained and protected during the construction period. Areas that are subject to removal due to construction would be replanted with similar plant specimens.

113 Additional woodland and scrub planting would be introduced to the periphery of the site boundary. The main aim of the landscape treatments to this area is to compliment and extend the adjoining existing habitats outside the application boundary.

114 A small number (three) of trees and scrub adjacent to Overton Road would be felled to accommodate the new junction to the site and allow for sufficient visibility splays. Compensatory planting would be carried out as near as possible to the trees to be removed.

Ecology

Potential Environmental Effects

115 An Extended Phase I Habitat survey has been undertaken of the application site. In addition, a detailed survey of the grassland botanical resource was undertaken, along with work on bats, reptiles, birds and invertebrates.

116 The application site is wholly contained within Micheldever Oil Terminal SINC and comprises calcareous grassland, scrub and bare ground mosaics.

117 The ecological evaluation identified the following receptors of ecological importance within the site:

- Micheldever Oil Terminal SINC supports species-rich calcareous grassland plant communities;
- Slow worm;
- roosting bats in trees assumed present for the purposes of mitigation;
- commuting / foraging bats;
- Dormouse assumed present for purposes of mitigation (present locally);
- Nesting peregrine falcon;
- Nesting birds; and
- Invertebrate assemblage.

118 The assessment of impacts upon receptors within and around the application site identified a range of potential impacts, i.e. habitat loss, fragmentation, hydrological, dust, noise and visual impacts; that could result from the construction and operation of the proposed development.

119 Residual impacts of the proposed development have been highlighted with specific regard to habitat loss from the Micheldever Oil Terminal SINC. Residual habitat loss associated with Micheldever Oil Terminal SINC has been

quantified at 0.25 ha of calcareous grassland, although this does not take into account areas of calcareous grassland which attempts to re-instate would be made as part of the proposed conservation management programme, see below.

120 The implementation of the conservation management plan would help to secure the presence of calcareous grassland at the SINC in the long term. At present this residual impact is considered to be of minor significance in the short term.

Summary of Mitigation Measures

121 It is proposed that a green roof is installed upon the main building of the proposed development to replace the calcareous grassland lost. The green roof would be vegetated using the seed bank, propagules and root fragments contained within the habitats which would be lost to the development.

122 A full habitat creation and management plan for the green roof would be provided. In total 0.75ha of calcareous grassland is due to be lost to the proposals and it is anticipated that approximately 0.5ha of calcareous grassland could be re-instated upon the green roof.

123 In addition a conservation management programme would be implemented in selected areas post-planning, in order to enable retained habitats to maintain their biodiversity interest over the long-term and to selectively commence scrub removal (where conflicts with dormouse and nesting birds are not identified), in order to open up the habitats for re-instatement of calcareous grassland.

124 It is proposed that this management plan would also be implemented across the southern section of Micheldever Oil Terminal SINC which is outside of the application site.

125 The removal of scrub would allow for the re-instatement of calcareous grassland within the SINC. The introduction of a conservation management programme at the SINC would be considered to be a positive impact upon an ecological receptor of County value.

126 In order to minimise the potential for impacts upon individual slow worms, it is proposed that a scheme of habitat modification is introduced prior to any ground preparation works. Habitat modification would comprise the phased removal of suitable habitats, namely grassland, by or under the direction of a suitably qualified ecologist. Modification would be carried out from within the development footprint towards the eastern grassland habitats, in order to encourage slow worms to migrate in this direction. Modifications would ideally be timed to be undertaken during periods of the day and weather conditions where slow worms would be most active (notably the middle part of the day during warm sunny weather). Where slow worms are recorded in habitat to be modified, their movement by hand may also be necessary.

127 All trees required to be removed to facilitate the new access would be subject to a climbing inspection by a licensed bat ecologist at an appropriate time of year. In the event that roosts are found, bats would need to be first excluded prior to felling / surgery under the aegis of an appropriate licence issued by Natural England and an appropriate method statement. Mitigation for roost loss would include such measures as fitting one-way exclusion devices prior to felling or surgery; ‘soft-felling’ limbs (i.e. lowering to the ground and leaving in situ for a 24 hour period for bats within crevices to disperse); provision of 20 bat boxes of various types (wooden, woodcrete, crevice, cavity and hibernation boxes) and retention of the original roost feature where possible by strapping cut sections to retained trees within the tree belt so as to maintain the overall roost resource available.

128 The licence to facilitate the removal of dormouse habitat would be applied for. The appropriate application would also comprise a method statement designed to protect dormouse during habitat removal and mitigate for the loss of dormouse habitat.

129 Standard methodologies would be followed in this plan, with above ground habitat removed during the winter period and below ground habitat, such as root stumps removed in May to avoid any hibernating individuals.

130 It is proposed that 0.3ha of scrub would be lost to the proposed development, of which approximately 0.1ha is considered optimal (in the eastern section of the site).

131 This scrub habitat would be ideally be replanted within the application site, using species suitable for dormouse and appropriate to the substrates and species already present.

132 However, a balance would have to be struck

between replanting of dormouse habitat, without impacting upon the existing calcareous grassland. In this case the re-planted dormouse habitat would be incorporated into the conservation management programme so as to only replace dormouse habitat in areas where sub optimal scrub species have already been removed.

133 Construction activities likely to disturb nesting peregrine falcon would commence outside the nesting season, which is typically February to June, so as to avoid disturbance during the breeding season. If the birds then choose to nest at the site following start of works it would be assumed that disturbance levels are tolerable to this species. It is proposed to incorporate at least three artificial Peregrine nest sites within the development.

134 Two of which would be attached to the western aspect of the ACT building, one at each end. The third would be attached to the flue stack in a south east facing direction.

135 The box in this location would be attached in such a way that it was not directly touching the flue stack, to minimise the transfer of any fluctuations in heat from the chimney to the nest box. This would provide alternative nesting sites, in addition to the cliff face already present.

136 To avoid destruction of any wild bird nests, scrub or trees would be removed outside the breeding season (March to August) where possible. If active bird nests are observed in any habitat scheduled for destruction, operations within that area would cease immediately and would not recommence until the breeding attempt has concluded to avoid committing an offence.

Cultural Heritage

Potential Environmental Effects

137 The cultural heritage of the application site was assessed in the context of the surrounding area.

138 Data was gathered from a variety of sources so that a model for the site's historical development could be constructed, and its potential historic value understood.

139 This confirmed that there are no designated sites that would be impacted upon by the proposed development.

140 A large proportion of the western part of the application site has been disturbed through extensive groundworks associated with the previous use of the site as a rail linked oil terminal.

141 The archaeological potential of the eastern, potentially undisturbed part of the application site has been shown to be high, with Iron Age settlement and agricultural activity demonstrated in the adjacent fields to the east. This archaeological potential is also supported by the evidence demonstrating activity throughout the prehistoric and historic periods, but most notably, the wealth of evidence for prehistoric occupation of the surrounding landscape, displayed by settlement, agrarian and burial remains.

Summary of Mitigation Measures

142 An archaeological site investigation and watching brief would be commissioned as part of a pre-development condition to ensure that the extent and importance of any archaeological remains which might exist within the application site (particularly within the eastern part) are recorded

Summary and Conclusion

This NTS summarises the key elements of the planning application by Clean Power Properties Limited and Network Rail Infrastructure Limited (the Applicant) for a development comprising Advanced Conversion Technologies and Anaerobic Digestion (AD) technologies at the Micheldever railway sidings.

The proposed development would make a significant contribution to waste management in this part of Hampshire and the surrounding area and maximise the recovery of recyclates and energy from waste.

The introduction of an ACT pyrolysis plant and an AD plant into the area would continue the move away from reliance on landfill towards a solution by which the recovery of recyclates is maximised.

This process would generate significant amounts of energy to be harnessed for use within the development and for surplus export to the National Grid.

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