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Environmental Statement
Non-Technical Summary

Proposed 45MWe Renewable Energy Plant

Land at Clarence Works, off Port Clarence Road, Port Clarence, Stockton-on-Tees

For Port Clarence Energy Limited

VAT NO 936 957 958 COMP REG NO 665 4110

PRISM PLANNING
TEL 01325 740 610 FAX 01325 740 619
ADMIN@PRISM-PLANNING.COM PRISM-PLANNING.COM

Environmental Statement
Non Technical Summary

Site

Land at Clarence Works, off Port Clarence Road, Port Clarence, Stockton-on-Tees

Prepared by

Rod Hepplewhite BSc (Hons) MRTPI
Principal Planning Consultant

Project

Planning Application:
Proposed 45MWe Renewable Energy Plant

Approved by

Steve Barker BSc (Hons) MRTPI DMS
Managing Director

Client
Port Clarence Energy Limited

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1. Introduction

1.1. An Environmental Statement (ES) has been prepared on behalf of Port Clarence Energy Limited to accompany the planning application submitted to Stockton-on-Tees Borough Council regarding the proposed development of land at Clarence Works, off Port Clarence Road, Port Clarence to provide a 45MWe renewable energy plant (a biomass power station burning waste wood as its main fuel).

1.2. The complete ES includes twelve technical topic chapters.

6. Ground Conditions
7. Water Resources
8. Ecology
9. Landscape and Visual Impact Assessment
10. Heritage Assessment
11. Noise
12. Air Quality
13. Traffic & Transportation
14. Waste Management
15. Socio-Economic Effects
16. Sustainable Development
17. Cumulative Impacts

1.3. These technical chapters contain the detailed analysis of the anticipated effects (impacts) of the development upon the site and surrounding area together with proposed ways in which any harmful effects may be reduced or overcome (mitigation).

1.4. This statement has been prepared having regard to the relevant regulations and summarises the work that has been undertaken to identify and mitigate the potential impacts of the proposals within and around the application site. The Environmental Impact Assessment Regulations requires the ES to provide a robust assessment of environmental impact of the development, with particular regard to the key effects identified.

1.5. The application submission comprises the following documents:

- Planning application form and notices
- Architectural drawings
- Planning Statement
- Design and Access Statement
- Statement of Community Involvement
- Transport Assessment
- Travel Plan
- Environmental Statement (ES)
- Flood Risk Assessment

2. Site Description

2.1. The application site, which extends to an area of some 5.33 hectares (13.17 acres), is located on land at Clarence Works, to the north west of Koppers UK, Port Clarence on the north side of the River Tees. The land is derelict and unused.

2.2. The north west boundary of the site is formed by a railway line devoted to industrial cargo traffic. Further to the north lies an area of salt marsh and sunken brine pools that make up much of the natural habitat of the area. The Transporter Bridge stands some 880m to the west south west of the site. Middlesbrough Football Club's Riverside Stadium is situated almost directly to the south of the site on the south bank of the River Tees, some 780m from the site. An aerial photograph of the site and surrounding area is provided below.

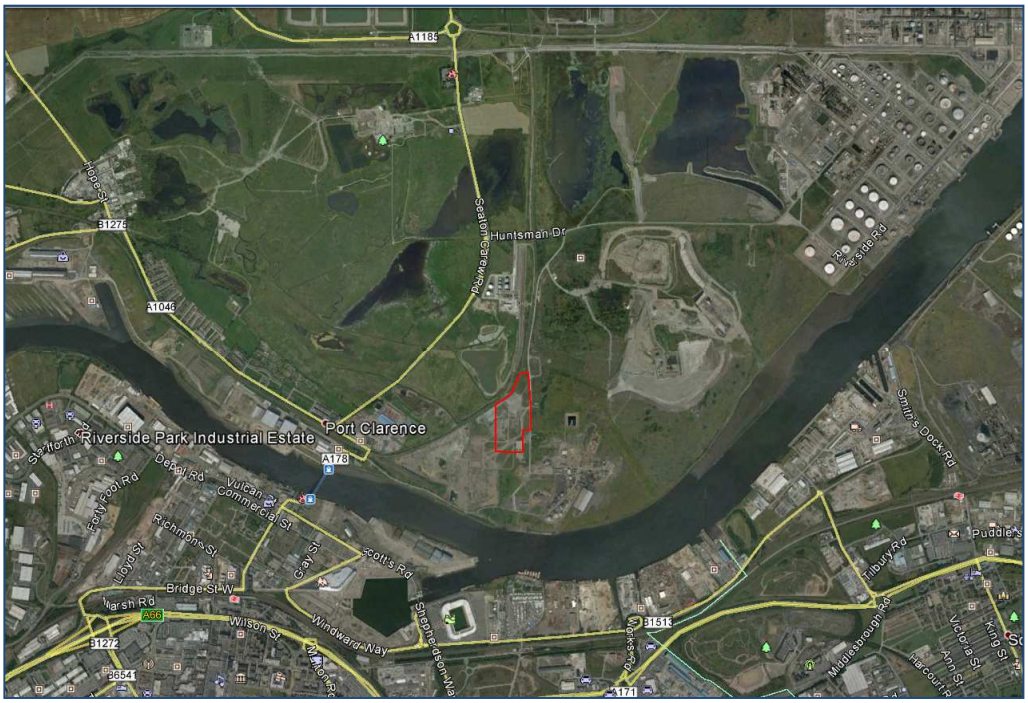

Figure 1 Site Location. Source: Google Earth.

2.3. Clarence Works is an industrial area with a long history of heavy industry and port related works. The last previous use for the site was as a workshop, but this ended over 50 years ago. Prior to that the site was used as a steel production plant. The site and land surrounding has a long and complex industrial history, including: chemical manufacturing; railways; iron works; coal storage, petroleum oil and gas refining; and petroleum, oil and gas storage. Koppers UK, previously known as Bitmac, is a bitumen processing plant.

2.4. The land has undergone partial clearance and remediation in advance of redevelopment but has stood vacant for some time, appearing as an industrial wasteland. The site consists of large areas of hard standing, bare rock/ rubble

intersected by gravel access tracks and some unimproved grassland. There are also two redundant buildings within the site area, both in poor condition. The application site may be described as brownfield land.

2.5. The site is presently accessed from the east via a private road which leads to Huntsman Drive which in turn leads to A178, linking northwards to the A1185 and from there westwards towards the A19, A689 and A1(M). This is the designated HGV route from the A19 and A1(M) to Seal Sands.

Previous Permission

2.6. The site has previously benefited from a planning permission for a biomass power station of similar size to that currently proposed, albeit that the buildings for that project were sited to the south of those of the current proposal. That consent was granted to Bio Energy Investments Ltd on 18th March 2010 and referred to a 49MW biomass fuelled plant (SBC ref: 09/3050/EIS). It was intended that the plant would be fuelled by imported pine kernel and palm shells or other food manufacturing by-products, with the feedstock being delivered over the nearby Koppers Quay to the south of the site.

2.7. The previous project failed to reach financial closure and the planning permission has since expired. That project was very ambitious in its design, being architect–led with insufficient attention being paid to requirements of the industrial process rather than being process-led with design following process. Ultimately, the project proved to be too expensive and was not acted upon as the financial institutions were unwilling to lend on it.

3. Project Description

3.1. Planning permission is being sought for a renewable energy plant on the site. The proposal refers to a 45MWe biomass project burning waste wood as its main fuel. The plan indicating the red line application site boundary is provided below.

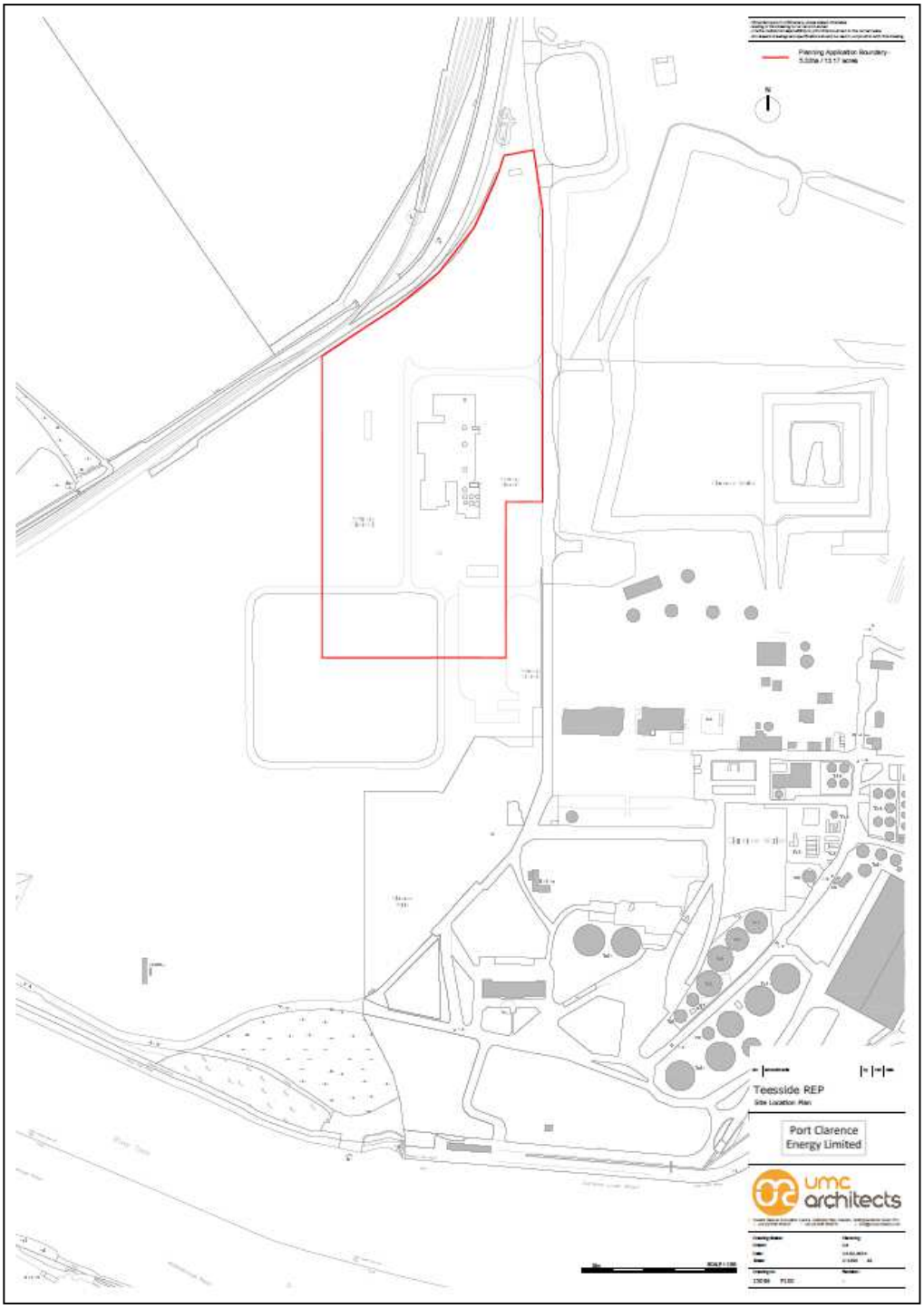

Figure 2: 'Red Line Plan', the application site

3.2. The development will be based around 3 main buildings comprising the turbine hall and boiler house, a fuel reception area and a fuel storage barn. Other main features of the plant include a stack (chimney) of approximately 105m in height and an air cooled condenser with additional ancillary infrastructure including:

- External fuel reception area
- 2 vehicle weighbridges
- Offices, control room and staff welfare facilities
- Site fencing and security barrier
- External hard standing areas for vehicle manoeuvring/parking
- Internal access roads and car parking
- Radiator fans
- Sedimentation tank
- Water tank
- Ammonia tank
- Flue gas treatment equipment
- Bottom ash storage and transfer area
- Fly ash silo
- Lime silo
- Transformers
- Grid connection compound
- New areas of landscaping and planting

3.3. Vehicular access to the site will be taken from the east via a private road that links to Huntsman Drive to the north, which then links to the A178 and in turn with the A1185 HGV route into Seal Sands from the A689, A19 and A1(M). A secondary pedestrian, cycleway and emergency access is available from the quayside road that links the site back to the A1046 Port Clarence Road.

3.4. The plant will have an internal vehicular circulation road that will allow the delivery of fuels and the export of ash residue. A perimeter one-way system will be operated on the site to link all the building functions. Leading from the perimeter circulation road will be access spurs and service areas located as appropriate to serve the particular operational areas / processes. A total of 23 car parking spaces are proposed for staff and visitors to the site.

3.5. The plant will burn approximately 325,000 tonnes of waste wood per annum. It is anticipated that the feedstock will be principally delivered on curtain sided HGVs capable of carrying around 20 tonnes each, resulting in approximately 60 fuel deliveries per day. The feedstock will be unloaded either in the covered or open aired fuel reception area before being transported via enclosed high level conveyors, firstly to a covered fuel storage area and then onto the boiler to be burned.

3.6. The waste wood will mainly be sourced from areas to the south of the site, up to 150 miles away, and will come from a variety of sources including construction and demolition sites, municipal collections, civic amenity sites and packaging.

3.7. Exhaust gases from the boiler are cleaned using Best Available Technology before being emitted via the stack. Water is heated to steam via a series of heat exchangers and fed to the turbine to generate electricity which is transmitted to the

national grid. On exiting the turbine, steam is cooled via the air cooled condenser ready to be re-circulated.

3.8. Ash that is generated from the combustion process will be recycled for masonry block manufacture for use in the construction industry or for re-use in the chemical industries. It is anticipated that waste heat from the combustion process can be used by local industry for process or space heating requirements.

3.9. An average of 200 people will be employed on-site during construction but this can be expected to rise to 350 during the peak period when the mechanical and electrical installation activities take place. Approximately 50 local full time jobs will be created in the operation of, and fuel supply to the plant.

3.10. The total capital cost of the plant is expected to be in the order of £160 million with 25% anticipated to be spent on locally sourced goods and services.

3.11. Construction of the plant will take approximately 30 months with construction work expected to commence 6 months after the grant of planning permission. It is therefore anticipated/hoped that the development will be complete by June 2017 and operational almost immediately thereafter following test firing etc. The plant will have an expected operating lifespan of 25 years before decommissioning, typical of many renewable energy projects. The site is in close proximity to the high voltage National Grid transmission line, which facilitates a ready grid connection.

4. Summary of Environmental Effects

Introduction

4.1. A series of technical assessments have been undertaken (Chapters 6-17 in Part 2 of the Environmental Statement) to assess the potential environmental impacts of the proposed development. This section provides an overall summary of the potential environmental impacts for each of the 12 technical topics, which appear in the same order as they do in Part 2 of the ES. The impacts of the proposals are described in accordance with terminology set out by the Institute of Environmental Management and Assessment and the language used in the report stems from their recommendations.

Ground Conditions

4.2. The geotechnical and environmental consultancy, Geo Environmental Engineering, undertook a contaminated land preliminary risk assessment of the site. This found elevated levels of soil and groundwater contamination within the site. As a result the site is currently considered to pose a potential risk to the proposed end users (those working at the renewable energy plant) and to the environment (shallow groundwater and nearby surface water features). Geo Environmental advise that further site investigation works will be necessary to clarify the extent of soil and groundwater contamination and to monitor potentially harmful ground gas from the numerous sources that were identified. Until appropriate investigation works have been completed, as a precautionary measure, it has been assumed that ground gas protection will be required in the proposed building.

4.3. It is considered that some form of treatment or further on-site risk assessment may be required with respect to soil and groundwater contamination as part of the development. Geo Environmental advise that remediation of a site like this would not be unusual when taking into consideration the various historical site uses of potentially contaminative concern.

4.4. It is anticipated that any large buildings proposed will require piled foundations, subject to a detailed foundation assessment by a structural engineer. Similarly, it is considered that further investigatory works will be required to aid the design of the internal roads. At this stage, due to the potential issues of soil and groundwater contamination it is considered unlikely that on site soakaways will suitable for the management of surface water.

4.5. Geo Environmental have recommend that the developer adopt a watching brief during the development works to ensure that if made ground and/or visual/malodorous evidence of potential contamination are identified then works should be stopped, the Local Authority notified and advice should be sought from an appropriately qualified and experienced geo-environmental engineer.

4.6. Subject to the recommendations set out in their assessment, Geo Environmental are content that there is nothing to suggest that existing ground conditions would prevent the proposed development from proceeding.

4.7. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 6, Ground Conditions, of the ES.

Water Resources

4.8. An assessment of the local hydrology and hydrogeology of the application site and surrounding area has been undertaken to identify potential hydrological and hydrogeological impacts associated with the proposed renewable energy plant. A Flood Risk Assessment (FRA) has also been prepared to accompany the planning application submission.

4.9. The River Tees, a major water course, is situated approximately 410m south of the site. A small watercourse, Holme Fleet, runs in a south easterly direction and connects into a culvert approximately 200m from the north-western site boundary. There are a number of wet and/or damp surface areas, associated with changes in slope and areas of low lying ground in and around the application site. These are exhibited as surface flushes (areas of ground permanently saturated at the lower end of a slope) as well as temporary wet or marshy areas. Geological records show the site to be immediately underlain by made ground materials used to reclaim ground from the estuary. The made ground underlain by superficial deposits of estuarine alluvium; these deposits are typically comprised of sands, silts and clays. Bedrock beneath the site is shown to be comprised of strata of the Mercia Mudstone Group.

4.10. The principal impacts of this development will occur during the construction phase, when there will be the most activity on site. The impacts will mainly take the form of increased sediment loading of surface water run-off, which may include disturbed contaminants. Soil compaction could increase surface water run-off. Mitigation measures have been recommended to prevent potentially contaminated surface water percolating into the underlying superficial deposits and the significance of this impact is deemed as being negligible, providing best practice is followed.

4.11. Inherent site design will ensure all water from the roof of the superstructure and hardstanding areas is collected separately and remains within a closed loop system on site (an attenuation pond is proposed). The River Tees at this point is tidal and a free discharge is permitted and therefore the impact upon River Tees at this point is also negligible.

4.12. As advised in the FRA, the application site is located within Flood Zone 1 and therefore at very low risk of flooding, being located outside the 1 in 100 and 1 in 1000 year fluvial floodplains and the 1 in 200 year tidal floodplain as shown by the Flood Maps on the Environment Agency website.

4.13. The FRA also indicates that the risk of flooding from sewers, overland flow and groundwater is low. The FRA further advises that there are no local site-specific risks that would adversely affect the Flood Zone categorisation. Similarly there are considered to be no significant increased offsite flooding risks as a result of the development. Accordingly, the site is considered suitable for the type of development proposed.

4.14. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 7, Water Resources, of the ES. The Flood Risk Assessment is provided as a separate document.

Ecology

4.15. The ecological assessment of the potential impacts arising from the proposed development noted that the application site has not been designated as being of international or national ecological importance and found that it is of low ecological value. However, it was noted that there are 4 sites of international or national ecological importance (i.e. covered by RAMSAR, Special Protection Area (SPA), Special Area of Conservation (SAC) or Site of Special Scientific Interest (SSSI) designation) within 3km of the site. The closest are the Teesmouth & Cleveland Coast SPA/ Ramsar and the Tees & Hartlepool Foreshore and Wetlands SSSI (both 460m to the north west of the site). In addition there is the Saltholme RSPB Reserve (non-statutory designation), which lies less that 100 m to the north of the site. The Reserve is of high importance to resident and wintering wetland and wading birds due to the presence of a series of open ponds and lakes with surrounding grassland habitat.

4.16. Due to the close proximity of the development site to the adjacent RSPB reserve and the habitats on site, the main impacts of the development were concluded to be to bird species and invertebrates, with the greatest potential for impacts being during the construction phase and less once the development is operational.

4.17. To mitigate impacts during the construction phase it has been recommended that site clearance, removal of scrub habitat and the strimming of the thick grassland be carried out outside of the bird-nesting season (i.e. not between 1st March and 31st August), to encourage dispersal of bird species, invertebrates, small mammals and amphibians. It has been recommended that the retained grassland be kept short (less than 10cm) to prevent the colonisation of dense grassland and other notable food species.

4.18. To mitigate construction impacts on the nearby Saltholme RSPB Reserve together with the Teesmouth & Cleveland Coast SPA/ Ramsar and the Tees & Hartlepool Foreshore and Wetlands SSSI, it has been recommended that construction work should commence outside of the nesting season. Similarly, as the surrounding habitats and SPA are of higher importance to wintering birds, it is considered preferable that the development commences outside of this period. Therefore, it is highly recommended that if construction is scheduled to commence after the

beginning of November then no percussive piling activities commence until the following March/April to minimise disruption to the over wintering birds.

4.19. As part of the development, a mitigation and enhancement package has been developed to offset those impacts that may arise from the proposed works. The following is a concise breakdown of such items:

- Attenuation pond and watercourse: to be enhanced for wildlife:
  - Aquatic planting
  - Sculpted for water storage as well as providing a benefit for wildlife
- Creation of habitat piles for shelter and refuge
- An area of species-diverse scrub to be planted (along boundary) for the key benefit of birds and invertebrates
- Grassland creation.

4.20. During discussions, the RSPB highlighted the potential impact of the built development to bird flight lines. Noting the concern, it is proposed that a 2-year monitoring period (including both winter and summer surveys) will be conducted, post development, to review the impact of the development on flight path and dispersal impacts. The data collected will be reviewed, impacts assessed and retrospective mitigation used where required.

4.21. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 8, Ecology, of the ES.

Landscape and Visual Impact

4.22. The potential effects of the proposed biomass plant on the landscape character and visual amenity of the surrounding area have been determined. Cumulative landscape and visual effects, from the combination of the proposed development and other projects of a similar scale (existing and proposed) have also been considered.

4.23. It is considered that the new industrial buildings that will comprise the proposed biomass power plant will be in keeping with the scale of the surrounding landscape.

4.24. The assessment concluded that the proposed development will not give rise to any significant adverse impacts on landscape character or on visual amenity.

4.25. Similarly, it was concluded that Cumulative impacts on the landscape character and visual amenity will not be significant.

4.26. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 9, Landscape and Visual Impact Assessment, of the ES.

Heritage Assessment

4.27. There are no designated heritage assets within the site. That is to say there are no listed buildings or scheduled ancient monuments within the site and the site does not lie within a conservation area. However, the iconic Grade II* listed Transporter

Bridge and associated Grade II assets is located some 880m to the south-west of the site, spanning the River Tees.

4.28. Following careful analysis it was concluded that no significant impacts on the setting and significance of the Transporter Bridge, will result from the construction of the proposed development.

4.29. Three non-designated Post-Medieval archaeological remains have been recorded within the study site relating to former industrial land uses. These comprise the site of the Port Clarence Iron Works, the former Saltworks to the north-east of the Port Clarence Iron Works, and the site of Old Cottages, a terrace of workers cottages.

4.30. The heritage assessment concluded that there was little chance of below-ground artefacts (Post-Medieval or otherwise) remaining within the site due to subsequent re-development and partial remediation of the site. Although the proposed development will impact on the undesignated asset and any associated previously unrecorded remains of archaeological interest, it is considered that they would not be of sufficient significance to preclude development, should such archaeological remains be present.

4.31. Significantly, the assessment acknowledged that the proposed renewable energy plant development presents an opportunity to continue the historic industrial land use of the site. Acknowledging the industrial character of the site and its surroundings and the industrial appearance of the Transporter Bridge, it is considered that the position and layout of the development within the site has been drawn up in an appropriate response to the sensitivity of the Transporter Bridge. Furthermore, it is considered that appropriate design consideration has been given to scale, massing and external materials of the various elements of the proposed development to demonstrate that it respects significance and setting of the Transporter Bridge.

4.32. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 10, Heritage Impact Assessment, of the ES.

Noise

4.33. The aim of the noise assessment was to identify the nearest residential properties (noise and vibration sensitive receptors) to the application site and assess the significance of the potential impact of the proposed biomass power station on these receptors.

4.34. A baseline noise survey has been undertaken at a location considered representative of the closest residential receptor to the proposed REP in order to establish the existing level of background noise.

4.35. A quantitative assessment of noise associated with the construction phase of the development site has identified that negative effects may occur at the closest sensitive receptors to the development site. A number of mitigation measures have

been identified with a view to minimising the effects to negligible significance from construction noise. Such measures generally involve the treatment of noise at source through the appropriate selection, maintenance and siting of plant as well as adoption of operational measures with the timing and routing of deliveries and the implementation of local hoarding and screens.

4.36. The assessment of potential groundborne vibration levels associated with the proposed REP during the construction phases has been undertaken. This identified negligible impact the closest receptor.

4.37. An assessment of noise generated by the proposed REP during operation was undertaken. Based on source noise levels measured at a similar biomass power station, the noise impact assessment has predicted a negligible impact on the closest receptor.

4.38. An assessment of the development-generated road traffic noise was also undertaken. This determined that noise level changes associated with development generated traffic will be of negligible significance at the closest noise sensitive receptor.

4.39. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 11, Noise, of the ES.

Air Quality

4.40. The biomass power plant has the potential to cause air quality impacts at sensitive locations during both the construction and operational phases. These may include dust emissions associated with construction works and emissions from the biomass plant together with road vehicle trips generated by the development during the operational phase. The air quality assessment determined baseline conditions and assessed potential impacts as a result of the proposed development.

4.41. Due to the remoteness of the site, the significance of potential air quality impacts from dust generated by earthworks, construction, and trackout activities has been predicted to be negligible at both human and ecological receptors in the vicinity of the site.

4.42. Assessment of potential air quality impacts during the operation of the plant indicated impacts on all pollutants would be negligible. The only exception was that a slight adverse impact was predicted on annual mean nitrous oxide concentrations at a small number of ecological receptors although the impacts are considered acceptable in the context of the proposals.

4.43. Impacts were predicted based on a worst-case assessment scenario of the facility constantly emitting the maximum permitted concentration of each pollutant throughout an entire year. As such, predicted concentrations and deposition rates are likely to overestimate actual effects.

4.44. Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the development. However, given the low trip generation associated with the facility, the impacts are likely to be negligible throughout the operational phase.

4.45. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 12, Air Quality, of the ES.

Traffic and Transportation

4.46. An assessment of the highways and transport related environmental impact of the construction and operation of the proposed development has been undertaken and appears as chapter 13 of the ES. A Transport Assessment and a Travel Plan have also been prepared, both of which accompany the planning application submission.

4.47. Having regard to the proposed access arrangements (see paragraph 3.3 above), the existing highway network conditions were reviewed; the proposed development and site operating parameters were reviewed; the anticipated trip demand of the proposed development was assessed; the development's traffic profile was considered; the development's traffic distribution and assignment was modelled; the development's operational traffic impact was assessed; the traffic related environmental impact was assessed; and construction traffic impacts were assessed.

4.48. Following full analysis, it was concluded that neither the construction nor the operation of the proposed renewable energy plant will result in a noticeable impact on operational or environmental conditions over the local highway network. Indeed, traffic flow increases resultant from the site will generally be low when compared to existing traffic flows and the core local routes of the A178 Seaton Carew Road (north of Huntsman Drive) and A1185 Seal Sand Link Road are considered to be of a suitable standard to accommodate the generally limited levels of operational HGV traffic. Moreover, there are no residential properties nearby. Furthermore, the assessment demonstrated that traffic levels associated with the development scheme can be accommodated on the local highway network, without any requirement for improvements to the Huntsman Drive / A178 Seaton Carew Road junction. Indeed, it has been concluded that there is no requirement for any off-site highway improvement / mitigation works.

4.49. Nonetheless, a number of operational measures are proposed (as detailed in the TA, Travel Plan and at chapter 13 of the Environmental Statement) to assist in managing development traffic demand and restricting the time periods that key operational HGV movements should take place. Ultimately it is anticipated that such management measures will be secured and controlled by planning condition / legal agreement in line with good practice. With these controls in place, it is anticipated that the proposed renewable energy plant will operate without any material residual traffic related environmental effects.

4.50. A total of 23 car parking spaces are proposed for staff and visitors to the site. This level of car parking has been identified as being suitable to accommodate the proposed staffing levels at the site and to allow an appropriate number of spaces for visitors to the site.

4.51. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 13, Traffic and Transportation, of the ES, the Transport Assessment and its accompanying Interim Travel Plan.

Waste Management

4.52. The environmental implications of waste material generated by the proposed development and the means by which this would be managed at the site has been assessed, focusing on construction and demolition waste together with waste arising from operation of the proposed development.

4.53. The site is conveniently located with regard to landfill sites in the Teesside area (the Port Clarence landfill site is within 1km of the site). Nonetheless, it is accepted that it is important that all wastes from the site are dealt with in accordance with best practice guidance, which advises that the following hierarchy be followed: prevent, reduce, re-use, recycle, recover before considering disposal as a last option.

4.54. Construction wastes will be managed to achieve this objective and a Site Waste Management Plan will be developed to address waste management, as a practical, working document to be used by the contractor after agreement with the Local Planning Authority.

4.55. Wastes arising from the operation of the site will include the bottom ash and fly ash resulting from the combustion process. It is envisaged that this will be re-used, either in construction (production of masonry blocks) or by local chemical industries. Heat will also be a by-product of the power plant processes and it is hoped that this will be used locally.

4.56. Whilst it has been assessed that both the construction and operation of the plant will have the potential to give rise to adverse impacts with significant effects with regards to the generation of waste, with the implementation of the identified mitigation measures, these impacts, will reduce to non-significant levels.

4.57. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 14, Waste Management, of the ES.

Socio-Economic

4.58. The significant investment that the delivery of a scheme that will bring to the site (total capital cost of the plant c.£160 million), will result in major regeneration benefits to the site and immediate surroundings, not least the bringing back into productive use of an area of industrial wasteland. Furthermore, being an exemplar project for the area, the proposed biomass power station, should attract significant

interest and provide further opportunities to diversify the economic base through the development of "knowledge based" industries can also be anticipated to increase.

4.59. The project will bring with it major employment opportunities, particularly during the construction stage which will take approximately 30 months. The scheme will generate a significant number of new jobs in the construction sector. An average of 200 people will be employed on-site during construction but this can be expected to rise to 350 during the peak period when the mechanical and electrical installation activities take place. Approximately 50 local full time jobs will be created in the operation of, and fuel supply to the plant.

4.60. Overall, the proposed development should make a minor positive contribution to the local economy and community, whilst also noting the significant positive impact of re-developing an area of industrial wasteland. Regeneration to the local area can be expected to include: the regeneration of brownfield land minimising the need to make further allocations of greenfield land; increase in both direct and indirect employment; increasing the income and revenue in the local area; attracting skilled workers into the area and increasing the proportion of Stockton's working age population with appropriate qualifications; social and economic benefits at the community level; and supporting local and regional economic growth. In its own small way, the proposed development will strengthen local economic performance, encourage inward investment and improve the image of the Borough as a place to live and work.

4.61. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 15, Socio-Economic Effects, of the ES.

Sustainable Development

4.62. Sustainable development is concerned with the quality of life experienced by people as well as environmental conservation. Socio-economic impacts were summarised above; this section therefore concentrates on the environmental benefits of the scheme. Climatic events such a the major floods later 2013/early 2014 elsewhere in the country are increasingly leading to demands for more sustainable attitudes and approaches to actions, including new development, in order to conserve the natural finite resources as well as the environment.

4.63. The proposed development will generate renewable energy from biomass, burning waste wood products (325,000 tonnes per annum) that might otherwise go to landfill. Furthermore, the use of biomass reduces the demand for fossil fuels. In addition to the environmental benefits of reducing our dependency on burning fossil fuels to generate electricity, it should be noted that energy security in the UK is an increasingly important consideration. Major fluctuations in the international price of fossil fuels over recent years has had a significant adverse effect both on UK energy prices and on the long term ability to plan for energy supply.

4.64. Annual power generation for the 45MWe plant is anticipated to be in the order of 354,700 MWh per year, an output equivalent to the demand of some 84,012 homes. Carbon dioxide savings (as compared with current UK electricity generation mix) are estimated to be in the order of 153,250 tonnes per year.

4.65. As previously noted, waste from the plant (bottom ash and fly ash can be re-used/re-cycled for a number of uses including in construction (production of masonry blocks) and by local chemical industries.

4.66. Significant consideration has been given to the development's long term sustainability and appropriate action has been taken to ensure that from design to build, sustainability has been given careful thought. In terms of construction, care will be taken in the specification, sourcing and utilization of materials, in order to have the least environmental impact. This will include identifying potential opportunities to re-use existing materials on site and to make use of recycled aggregate. Both construction and structural timber will be sourced from sustainably managed sources. Materials to be used within the main building elements will be assessed and where possible selected based on their environmental performance.

4.67. Other sustainable features of the proposed development include the Travel Plan, which seeks to encourage those working at the site in particular to travel to and from work by sustainable means, either by modes other than the private car or by car sharing.

4.68. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 16, Sustainable Development, of the ES.

Cumulative Impacts

4.69. Cumulative impacts could result from either the construction or operation of the proposed development. The majority of potential cumulative effects resulting from construction would be limited in their duration (for instance, from the combined effects on access, visual amenity, noise and air quality). Cumulative effects from the operation of the proposed development have the potential to be permanent effects.

4.70. The assessment considered the potential cumulative impacts of the proposed development in two parts:

1. On people and property: through a combination of potential effects on visual amenity, noise, air quality, land use, access to land and disruption due to construction.
2. On the natural environment: through a combination of potential effects on the soils, hydrology, and ecology / nature conservation aspects of the area.

4.71. Significant cumulative impacts have only been identified during the construction period, for users of the closest sections of path / track to the north-west of the site. These would be of limited duration and specific mitigation is not considered necessary at this location. In all other respects, both during the construction and

operation of the proposed biomass power plant, no significant adverse cumulative impacts have been identified.

4.72. Further details on the baseline assessment, impacts and mitigation measures are presented at Chapter 17, Cumulative Effects, of the ES.

5. Conclusions

5.1. This document presents a non technical summary of the environmental effects predicted in relation to the development proposals. The complete Environmental Impact Assessment is presented in the ES. The technical papers contained therein set out the detailed analysis of impacts and mitigation and should be referred to for the complete assessment of impact.

5.2. It has been concluded that effective mitigation and adequate controls for the anticipated construction period, and the operational stage, can be achieved. It is considered that the impact of the proposals during the construction phases will not be significant and during the operational phase it is predicted that there will be numerous beneficial impacts due to the provision of needed housing.

5.3. There will be some residual effects although these are predicted to be minor following the proposed mitigation measures.