



Thurrock Flexible Generation Plant

**Preliminary Environmental Information Report
Chapter 6: Landscape and Visual Resources**

Date: September 2018

Environmental Impact Assessment
Preliminary Environmental Information Report

Volume 3

Chapter 6

Report Number: OXF10872

Version: Final

Date: September 2018

This report is also downloadable from the Thurrock Flexible Generation Plant website at:
<http://www.thurrockpower.co.uk>

Thurrock Power Ltd
1st Floor
145 Kensington Church Street
London W8 7LP

Copyright © RPS

The material presented in this report is confidential. This report has been prepared for the exclusive use of Thurrock Power Ltd and shall not be distributed or made available to any other company or person without the knowledge and written consent of RPS.

Prepared by: Corinna Demmar

Checked by: Tom Dearing

Table of Contents

1. Introduction	1
1.1 Purpose of this chapter	1
1.2 Planning policy context	1
1.3 Consultation	10
2. Assessment Approach	18
2.1 Guidance.....	18
2.2 Proposed Approach	18
2.3 Study area.....	24
2.4 Uncertainties and/or data limitations	24
2.5 Impact assessment criteria	27
2.6 Maximum design envelope parameters for assessment	29
2.7 Impacts scoped out of the assessment	29
2.8 Measures adopted as part of Thurrock Flexible Generation Plant	31
3. Baseline environment.....	32
3.1 Current baseline.....	32
3.2 Landscape Value	37
Published Landscape Character.....	40
3.3 Visual Baseline.....	47
3.4 Future baseline	55
4. Assessment of Effects.....	56
4.1 Construction phase	56
4.2 Operational and maintenance phase	59
4.3 Decommissioning phase	63
4.4 Transboundary effects	63
4.5 Inter-related effects	63
5. Cumulative Effects Assessment.....	65
5.1 Introduction	65
5.2 Cumulative effects in 'maximum development' scenario.....	65
5.3 Cumulative effects with specific developments	67
6. Conclusion and summary.....	71
6.1 Landscape Resources and Receptors	71
6.2 Visual Resources and Receptors.....	71
6.3 Next Steps.....	72
7. References.....	74
8. Viewpoint, Panorama and Wireline Figures	75
Figures 3.8 to 3.22: Representative Viewpoints.....	75
Figures 3.23 to 3.29: Character Panoramas	76

Figures 4.30 to 4.43: Thurrock Flexible Generation Plant Wire Lines.....	77
Figures 5.44 to 5.57: Cumulative Wire Lines	78

List of Tables

Table 1.1: Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provisions relevant to this chapter.....	1
Table 1.2: Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 policy on decision making relevant to this chapter.	3
Table 1.3: Key points raised during scoping and consultation to date.....	11
Table 2.1: Summary of key desktop reports.....	22
Table 2.2: Summary of site-specific surveys undertaken.	23
Table 2.3: Criteria for magnitude of impact.	28
Table 2.4: Criteria for sensitivity.	29
Table 2.5: Matrix used for the assessment of the significance of an effect.	29
Table 2.6: Maximum design envelope parameters assessed.	30
Table 2.7: Designed-in measures.	31
Table 6.1: Summary of potential environment effects, mitigation and monitoring.	73

List of Figures

Figure 2.1: Assessment Approach.	19
Figure 2.2: ZTV and Representative Viewpoint and Wire Line Locations.....	20
Figure 2.3: ZTV and Character Panorama Locations.....	21
Figure 2.4: Zone Location Plan on Aerial Photograph.....	25
Figure 2.5: Landscape and Visual Impact Assessment Study Area.	26
Figure 3.1: CPRE Tranquillity Mapping.	39
Figure 3.2: National, County and Kent Downs AONB Landscape Character Areas.....	42
Figure 3.3: Borough and District Landscape Character Areas.	45
Figures 3.8 to 3.22: Representative Viewpoints	
Figures 3.23 to 3.29: Character Panoramas	
Figures 4.30 to 4.43: Thurrock Flexible Generation Plant Wire Lines	
Figures 5.44 to 5.57: Cumulative Wire Lines	

Summary

This chapter provides an assessment of the potential effects of the Thurrock Flexible Generation Plant development on Landscape and Visual Resources. An addendum providing information on the potential effects on a 50 m high stack, on landscape and visual resources can be found in the chapter appendix 6.1: Addendum to the Assessment of Landscape and Visual Resources.

Qualifications

This document has been prepared by Corinna Demmar, a Chartered Landscape Architect, who has over 30 years' experience of landscape architecture and landscape and visual impact assessment.

1. Introduction

1.1.1 This chapter describes and assesses the existing landscape and visual resources of the application site and in the vicinity of the site. This includes identification of the character and feature of the landscape and consideration of the changes that would result as a consequence of the proposed development. In addition, it considers the potential visual effects arising as a result of the proposed development. The chapter reports on studies, including a combination of field surveys and desktop research, to describe, classify and evaluate the existing resource.

1.1.2 The principal objectives of the assessment are:

- to describe, classify and value the existing landscape likely to be affected by the proposed development during its construction and operational phases;
- to identify visual receptors with views of the proposed development;
- to identify the likely significant effects on landscape and views, taking into account measures proposed to reduce or avoid any effects identified.

1.1 Purpose of this chapter

1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the findings of Environmental Impact Assessment (EIA) work undertaken to date concerning potential impacts of Thurrock Flexible Generation Plant on landscape and visual resources.

1.1.2 The PEIR is being published to inform pre-application consultation. Following consultation, comments on the PEIR will be reviewed and taken into account in preparation of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate (PINS) for development consent.

1.1.3 In particular, this PEIR chapter:

- presents the existing environmental baseline established from desk studies, surveys and consultation to date;
- presents the potential environmental effects on landscape and visual resources arising from Thurrock Flexible Generation Plant, based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and

- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

1.2 Planning policy context

1.2.1 Planning policy on this type of energy related Nationally Significant Infrastructure Project (NSIP), specifically in relation to landscape and visual resources, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1) the NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) the NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (NPS EN-4) and the NPS for Electricity Networks Infrastructure (NPS EN-5).

1.2.2 NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 include guidance on what matters are to be considered in the assessment. These are summarised in Table 1.1, below.

Table 1.1: Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provisions relevant to this chapter.

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provision	How and where considered in the PEIR
Summary of NPS EN-1 policy relevant to the assessment of effects on Landscape and Visual Resources	
The assessment should make reference to existing landscape character assessments and related studies (paragraph 5.9.5).	Published landscape character studies are referenced in paragraphs 3.2.17 to 3.2.32.
The assessment should make reference to relevant planning policies (paragraph 5.9.5).	Relevant planning policies are referred to in paragraphs 1.2.4 to 1.2.65.
The assessment should include the effects on landscape character and individual landscape elements during construction and operation (paragraph 5.9.6).	The effect on landscape character during construction is considered in paragraphs 4.1.1 to 4.1.7 and at the operational stage in paragraphs 4.2.1 to 4.2.6.
The assessment should include the effects on views and visual amenity during construction and operation, including light pollution effects (paragraph 5.9.7).	The effect on visual resources and receptors during construction are set out paragraphs 4.1.17 to 4.1.44 and at the operational stage at paragraphs 4.2.8 to 4.2.43. Night time effects during construction are set out paragraphs 4.1.16 and 4.1.45 and at the operation stage at paragraphs 4.2.6 and 4.2.44.
The assessment should minimise harm through reasonable and appropriate mitigation (paragraph 5.9.8).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provision	How and where considered in the PEIR
The proposal should not compromise the integrity of nationally designated areas (paragraph 5.9.12).	The Thurrock Flexible Generation Plant facility is not located within or adjacent to a designated landscape. The Kent Downs AONB lies approximately 6 km from Zone A, but the development does not affect its special qualities or compromise its integrity.
The proposal should take into account the landscape and visual impacts of visible plumes from chimney stacks and/or cooling assembly (paragraph 5.9.20).	A visible plume for a significant percentage of the year is unlikely but this will be further considered in conjunction with the air quality assessment in the ES.
The proposal should provide reasonable visual mitigation where possible and appropriate (paragraphs 5.9.21, 5.9.22 and 5.9.23).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
The proposal should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal (paragraph 5.10.6)	Zone F1 is proposed replacement Common Land and Access Land to replace that lost at Walton Common (Zone A)
The proposal should take appropriate mitigation measures to address adverse effects on coastal access, National Trails and other rights of way (paragraph 5.10.24).	Mitigation of effects on Public Rights of Way is considered in Volume 3, Chapter 8: Land Use Agriculture Recreation and Socio-economics.
Summary of NPS EN-2 policy relevant to the assessment of effects on Landscape and Visual Resources	
The assessment should make reference to existing landscape character assessments and related studies (paragraph 2.6.3).	Published landscape character studies are referenced in Section 1.1.
The assessment should consider the design of the plant, including the materials to be used, and the visual impact of the stack (paragraph 2.6.4).	Visual impact during the operational phase is considered in paragraphs 4.2.9 to 4.2.43. Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
As it is not possible to eliminate the visual impacts associated with a fossil fuel generating station, the proposal should take appropriate mitigation measures to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable (paragraph 2.6.5).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
The proposal should be designed with the aim of providing the best fit with the existing local landscape so as to reduce visual impacts (paragraph 2.6.6).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provision	How and where considered in the PEIR
The proposal should consider reducing visual impacts by enclosing buildings at low level, or using earth bunds, mounds, and tree planting (paragraph 2.6.7).	Noted
The proposal should take measures to minimise the effects of the fossil fuel generating station on landscape and visual amenity as far as reasonably practicable (paragraph 2.6.8).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
Summary of NPS EN-4 policy relevant to the assessment of effects on Landscape and Visual Resources	
Negative effects were identified for short/medium term for the Landscape, Townscape and Visual Appraisal of Sustainability (AoS) objective due to the above ground infrastructure associated with gas supply infrastructure (paragraph 1.7.2).	Noted
Paragraph 2.14.1 refers to the generic considerations in NPS EN-1 (Section 5.9) which should be given to landscape and visual impacts.	Noted
The ES should include and assessment of the landscape and visual effects (see Section 5.9 of EN-1) including the specific issues outlined under mitigation in paragraph 2.14.4 (of NPS EN-4).	This chapter contains an assessment of landscape and visual impacts at Section 4. Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
The impact of the construction of gas pipelines should be considered, as without mitigation can affect the landscape. These comprise the effect on specific landscape elements within and adjacent to the pipeline route, such as field boundaries, trees and watercourses. Temporary visual impacts will also be caused, by the need to access the working corridor, including access to pits (for boring underneath roads/rivers/railways, etc., as well as other construction compounds (paragraph 2.21.1).	When the exact alignment of the gas pipeline has been finalised the physical effect on landscape elements can be assessed and a mitigation strategy put in place for avoidance or replacement of those elements.
Long-term impacts are likely to be limited as once operational the main infrastructure is usually buried. They are likely to include: limitations on the ability to replant landscape features such as hedgerows or deep-rooted trees over or adjacent to the pipeline; and structures and indication points necessary to identify the pipeline route and provide it with service access (paragraph 2.21.2).	When the exact alignment of the gas pipeline has been finalised the physical effect on landscape elements can be assessed and a mitigation strategy put in place for avoidance or replacement of those elements.
The ES should consider an assessment of the landscape and visual effects of the proposed route and of the main alternative routes considered (paragraph 2.21.3).	Noted

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provision	How and where considered in the PEIR
The application should include proposals for reinstatement of the pipeline route as close to its original state as possible and take into account any requirements for agreements with the landowner to access areas for aftercare and management work. Where it is unlikely to be possible to restore the landscape to its original state, the applicant should set out measures to compensate for any adverse effect on the landscape (paragraph 2.21.3).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
Summary of NPS EN-5 policy relevant to the assessment of effects on Landscape and Visual Resources	
Potential significant negative effects have been identified for the landscape, townscape and visual AoS objective, because of the prominent visual nature of electricity networks infrastructure (paragraph 1.7.2).	Noted
Undergrounding electricity cables will have beneficial long-term effects on the landscape, townscape and visual resources. The case for undergrounding should be undertaken using a case by case evaluation (paragraph 1.7.5).	Noted
Generic landscape and visual impacts are covered in section 5.9. of EN-1 (paragraph 2.8.1).	Noted
New above ground electricity lines can give rise to adverse landscape and visual impacts, dependent on scale, siting, degree of screening and nature of the landscape and local environment through which they are routed. For the most part these impacts can be mitigated (paragraph 2.8.2).	Noted
New substations, sealing end compounds and other above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts (paragraph 2.8.2).	Noted
Cumulative landscape and visual impacts can arise where new overhead lines are required along with other related developments such as substations, wind farms and/or other new sources of power generation (paragraph 2.8.2).	A cumulative impact assessment is set out at Section 5.
Sometimes positive landscape and visual benefits can arise through reconfiguration or rationalisation of existing electrical infrastructure (paragraph 2.8.3).	Noted
Applicants should give appropriate consideration to the potential costs and benefits of other feasible means of connection or reinforcement (other than overhead lines) such as undergrounding cables (paragraph 2.8.4).	Noted

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 provision	How and where considered in the PEIR
Developers should follow the Holford Rules, which are a common sense approach to the routing of overhead lines (paragraph 2.8.5). An overview of the Holford Rules is provided in paragraph 2.8.6.	Noted

1.2.3 NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 also highlight a number of factors relating to the determination of an application and in relation to mitigation. These are summarised in Table 1.2 below.

Table 1.2: Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 policy on decision making relevant to this chapter.

Summary of NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 policy on decision making (and mitigation)	How and where considered in the PEIR
Summary of NPS EN-1 policy on decision making and mitigation relevant to the assessment of effects on Landscape and Visual Resources	
Has the chapter considered the existing landscape character (paragraph 5.9.8)?	The landscape baseline is set out at Section 3.
Virtually all nationally significant energy infrastructure projects would have an effect on the landscape (paragraph 5.9.8).	Noted
Having regard to siting, operational and other relevant constraints, does the project minimise harm to the landscape (paragraph 5.9.8).	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
Does the project provide reasonable landscape mitigation where possible and appropriate (paragraph 5.9.8)?	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
Does the proposal compromise the purpose of a nationally designated area (paragraph 5.9.12)?	The Thurrock Flexible Generation Plant facility is not located within or adjacent to a designated landscape. The Kent Downs AONB lies approximately 6 km from Zone A, but the development does not affect its special qualities or compromise its integrity.
The fact that a proposed project would be visible from within a designated area should not in itself be a reason for refusing consent (paragraph 5.9.13).	Noted

The scale of nationally significant infrastructure projects will mean that they would often be visible within many miles of the site of the proposed infrastructure. The decision maker should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project (paragraph 5.9.15).	Noted
In reaching a judgement, the decision maker should consider whether any adverse impact is temporary, such as during construction and /or whether any adverse impact on the landscape would be capable of being reversed in a timescale that the decision maker considers reasonable (paragraph 5.9.16).	Landscape impacts are considered at paragraphs 4.1.2 to 4.1.7, paragraphs 4.2.1 to 4.2.5 and paragraph 4.3.1.
The decision maker would have to judge whether the visual effects on sensitive receptors, such as local residents and other receptors, such as visitors to the local areas, outweigh the benefits of the project (paragraph 5.9.18).	Visual impacts are considered at paragraphs 4.1.9 to 4.1.45, paragraphs 4.2.8 to 4.2.43 and paragraph 4.3.2.
Examples of existing permitted infrastructure with a similar magnitude of impact on visual receptors may assist the decision maker in judging the weight it should give to assessed visual impacts of the proposed development (paragraph 5.9.19).	Noted
Does the project provide reasonable visual mitigation where possible and appropriate (paragraphs 5.9.21, 5.9.22 and 5.9.23)?	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
The decision maker should not refuse to grant consent for a development solely on the ground of an adverse effect on the landscape/seascape or visual amenity if any alternative is not economically viable or the benefits of the scheme outweigh any harmful effects on sensitive receptors (paragraph 2.6.208).	Noted
The decision maker should make a judgement on potential adverse impacts, during construction and operation, taking into account the duration and reversibility of the proposal (paragraph 2.6.209).	Section 4 considers the effects on landscape and visual resources and receptors during construction, operation and decommissioning.
Summary of NPS EN-2 policy on decision making and mitigation relevant to the assessment of effects on Landscape and Visual Resources	
It is not possible to eliminate the visual impacts associated with a fossil fuel generating station. Mitigation is to reduce the visual intrusion and impact on visual amenity, as far as reasonably practicable (paragraph 2.6.5). Does the project provide reasonable visual mitigation where possible and appropriate?	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.

Has the Applicant designed the fossil fuel generating station with the aim of providing the best fit in the landscape (including size, external finish and colour – as far as compliance with engineering and environmental requirements permit), so as to reduce visual impacts (paragraphs 2.6.6 and 2.6.7)?	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
Has the Applicant undertaken an appropriate landscape and visual impact assessment using recognised methodologies (paragraph 2.6.8)?	The landscape and visual assessment methodology is set out in Section 2.
Has the Applicant taken measures to minimise the effects of the fossil fuel generating station on the landscape and visual amenity as far as is reasonably practicable (paragraph 2.6.8)?	Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.
The decision maker should be aware of the statutory and technical requirements that inform plant design and may require the incorporation of certain design details, e.g. chimney stack height (paragraph 2.6.9).	Noted
If the decision maker is satisfied that the location is appropriate for the project, and that it is design sensitively (given siting, operational and other relevant constraints) to minimise harm to the landscape and visual amenity, the visibility of a fossil fuel generating station should be given limited weight (paragraph 2.6.10).	Noted
Summary of NPS EN-4 policy on decision making and mitigation relevant to the assessment of effects on Landscape and Visual Resources	
The decision maker should follow the principles for decision making set out in Section 5.9 of NPS EN-1.	Noted
NPS EN-1 suggests that one way to mitigate the visual and landscape effects of a project would be to reduce its scale. However, both NPS' recognise that reducing scale or otherwise may result in significant operational constraint and reduction in function, making the project unfeasible. Where visual impact is likely to be an issue, the Applicant's assessment should consider counter-sinking infrastructure.	Noted
Summary of NPS EN-5 policy on decision making and mitigation relevant to the assessment of effects on Landscape and Visual Resources	
The decision maker should recognise the Holford Rules and take them into account in any consideration of alternatives and in considering the need for any additional mitigation measures (paragraph 2.8.7).	Noted

<p>Specific mitigation measures could be taken which the decision maker could require: Landscape schemes consisting of off-site tree and hedgerow planting, to mitigate potential landscape and visual impacts by softening or screening the development proposals from sensitive receptors; and screening comprising of localised planting in the immediate vicinity of residential properties to screen or soften the effect of the line (paragraph 2.8.11).</p>	<p>Proposed mitigation is outlined at Table 2.7. Following the PEIR consultation a landscape mitigation scheme will be developed, that will minimise landscape and visual effects.</p>
--	--

National Planning Policy Framework (2018)

- 1.2.4 The National Planning Policy Framework (NPPF) was published in July 2018 by the Ministry of Housing Communities and Local Government and replaced the 2012 NPPF.
- 1.2.5 The NPPF emphasises the importance of sustainable development. Paragraph 7 states: “The purpose of the planning system is to contribute to the achievement of sustainable development.” This includes an environmental role, contributing to protect and enhance our natural environment.
- 1.2.6 NPPF paragraph 8 sets out the overarching objectives of the planning system. The objectives include an environmental objective at paragraph 8 c) “to contribute to protecting and enhancing our natural, built and historic environment...”. The NPPF requires strategic policies within development plans to make provision for the “conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure...” (paragraph 20 d). Non-strategic policies should set out more detailed policies for specific areas, including the allocation of sites, establishing design principles, as well as conserving and enhancing the natural environment (paragraph 28).
- 1.2.7 Section 8 is concerned with promoting healthy and safe communities, this includes open space and recreation. Paragraph 96 notes that “Access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and well-being of communities.” At paragraph 97 the NPPF states that “Existing open space” ... “should not be built on unless: b) the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location.” Paragraph 98 is concerned with protecting and enhancing public rights of way, including adding links to the existing public rights of way network.
- 1.2.8 Section 11 is concerned with making effective use of land. Paragraph 122 requires the efficient use of land, taking into account of, amongst other matters, d) “the desirability of maintaining an area’s prevailing character and setting...”.

- 1.2.9 Section 12 of the NPPF is concerned with well-designed places. Paragraph 127 b) explains that developments should be “visually attractive as a result of good architecture, layout and appropriate and effective landscaping”. Paragraph 127 c) requires that developments “are sympathetic to local character and history, including the surrounding built environment and landscape setting. While not preventing or discouraging appropriate innovation or change (such as increased densities)”. Developments should also “establish or maintain a strong sense of place, using the arrangements of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit” (paragraph 127 d).
- 1.2.10 Green Belts are discussed in Section 13. Once they have been defined, the enhancement of beneficial use, such as providing access, should be planned.
- 1.2.11 NPPF Section 15 Conserving and enhancing the natural environment, is of relevance to this assessment. Paragraph 170 explains that “planning policies and decisions should contribute to and enhance the natural and local environment by:
- “protecting and enhancing valued landscapes ...” and
 - “recognising the intrinsic character and beauty of the countryside...”
- 1.2.12 Paragraph 172 states that “Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues”. The proposed development is not located in either of these statutorily designated sites.
- 1.2.13 Paragraph 175 c) explains that “development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland or ancient and veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists...”. The footnote to point c) gives examples of exceptional reasons, as being “infrastructure projects (including Nationally Significant Infrastructure Projects, orders under the Transport and Works Act and hybrid bills, where the public benefit would clearly outweigh the loss or deterioration of habitat.”
- 1.2.14 NPPF paragraph 180 b) highlights the need to “identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason”. Paragraph 180c requires planning policies and decisions to “limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.”

National Planning Policy Guidance

- 1.2.15 The NPPG reiterates the core principles of the NPPF 2012, as it has not been updated. As such the guidance is not set out within this document.

Thurrock Local Development Framework

1.2.16 The Thurrock Local Development Framework (TLDF) was adopted in January 2015. The Thurrock Core Strategy and Policies for Management and Development contains policies and objectives relevant to this chapter. Core Strategic Spatial Policies (CSSPs) relevant to this chapter are set out in paragraphs 1.2.17 to 1.2.23, Core Strategic Thematic Policies (CSTPs) of relevance to this chapter are set out at paragraphs 1.2.24 to 1.2.27 and Policies for Management of Development (PMDs) are set out at paragraphs 1.2.38 to 1.2.46, below.

Policy CSSP4 – Sustainable Green Belt

1.2.17 This policy aims to maintain the purpose, function and open character of the Green Belt in Thurrock. Point 2., I. Opportunities for Leisure and Sport in the Green Belt states that:

- i. *“The Council’s policy is that the constructive and positive use of the Green Belt for sports and leisure purposes is an essential component of the Thurrock Spatial Strategy...”*
- ii. *The Council will actively encourage the pursuit of leisure and sports activities appropriate to the Green Belt by improving connectivity between Thurrock’s Urban Areas and the Green Belt to promote this asset for the enjoyment and well-being of Thurrock communities.”*

1.2.18 Part 4 of Policy CSSP4 is concerned with Enhancing the Green Belt. Point 4., I. concerns sustainable boundaries *“The Council will seek to reinforce the Green Belt boundary through structural enhancement of the local landscape features. The Council will secure structural landscape enhancements in accordance with Landscape Character Assessments and they will be delivered by developers as part of an overall contribution package linked to development schemes.”*

1.2.19 Policy CSSP4, Point 4., II. discusses public access, open space and biodiversity *“The implementation of the Greengrid Strategy will form a critical component of the overall Green Belt strategy to retain open character, enhance public access and secure biodiversity in the Green Belt.”*

Policy CSSP5 – Sustainable Greengrid

1.2.20 Thurrock plans and strategies include *The Greengrid Strategy for Thurrock 2006 - 2011*, which is supported by other reports, including: *The Thurrock Open Space Strategy 2006-2011*; and, the *Green Infrastructure Plan for Thurrock 2006-2011*. The Greengrid strategy recognises that improved green access links between green assets is the key to maximising the benefits derived from green assets for residents, workers and visitors to the Borough. Policy CSSP5 is concerned with creating a sustainable Greengrid. Although not indicated as an Existing Open Space on Map 3 – Location of Greengrid in Thurrock, of the Thurrock Local Plan, as other Access Land is Zone A is located on Walton Common and is Access Land as mapped by the Ordnance Survey. However, Zone A is separated from other Access Land by the railway, with an ‘unprotected’ type crossing for pedestrians and farm vehicles, as access to it. For the purposes of this report Walton Common and the adjoining Access Land are considered to be green assets, and therefore form part of the Greengrid.

1.2.21 Policy CSSP5, point 1., I. explains that it is the policy of the Council to *“ensure that all development proposals take account of the objectives of the Greengrid network and where appropriate contribute to the management and enhancement of the Greengrid.”*

1.2.22 Point 1., II. Notes that it is the policy of the Council to *“deliver the area based Greengrid Improvement Zones to ensure that the location, planning, design and ongoing management of sites is appropriate, and that opportunities are sought to make best use of land and green infrastructure assets in delivering ecosystem services.”*

1.2.23 Point 3. Sets out the Council’s strategy to develop, promote and protect local scale green assets, including, at point iii) registered commons.

Policy CSTP18 – Green Infrastructure

1.2.24 The *Thurrock Green Infrastructure Plan* is the key delivery document for Borough’s Sustainable Community Strategy. The explanatory text notes that Green Infrastructure provides a number of different ‘ecosystem services’, including cultural services that include landscape values such as aesthetic experiences.

- 1.2.25 Paragraph 5.119 of the Core Strategy refers to a *Landscape Strategy for Thurrock 2002-2017*, which confirms the Council’s commitment to conserving and enhancing the landscape character of the Borough. It notes that the strategy “sets out specific features to be preserved and enhanced. Within this there are opportunities to improve the quality of the urban fringe through the provision of new woodland planting, hedgerow planting and other habitat improvements” and notes that “this may come through allowing appropriate uses in the countryside, such as informal recreation and access...”
- 1.2.26 Point 2., I. of the Policy explains that the Council “will require a net gain in Green Infrastructure. This will contribute to addressing the existing and developing deficiencies, ensuring connectivity and relieving pressure on designated biodiversity sites such as SSSI’s.”
- 1.2.27 Point 2., IV. States that “Green Infrastructure assets will be identified, enhanced and safeguarded through different means, including, ii. “Not permitting development that compromises the integrity of green and historic assets and that of the overall Green Infrastructure network.”
- Policy CSTP20 – Open Space**
- 1.2.28 Point I. explains that the “Council will seek to ensure that a diverse range of accessible public open spaces, including natural and equipped play and recreational spaces is provided and maintained to meet the needs of the local community.”
- 1.2.29 Point II. Encourages new provision of public open space.
- Policy CSTP22 – Thurrock Design**
- 1.2.30 This policy primarily provides a policy framework for residential development. However, it does include references to other development as well.
- 1.2.31 Point I. states that “development proposals must demonstrate high quality design founded on a thorough understanding of, and positive response to, the local context.”
- 1.2.32 Point VII. Explains that “the Council will require that developments address the particular sensitivities and capacity of the places within which they occur, including how adverse impacts are mitigated.”
- Policy CSTP23 – Thurrock Character and Distinctiveness**
- 1.2.33 The Thurrock Local Plan recognises that protecting and promoting the best elements of the Borough’s character and strengthening its sense of place provides benefits for community cohesion, the quality of life and economic growth (paragraph 5.139).
- 1.2.34 Various character studies of the Borough have been undertaken, including the *Urban Character Study (2005)* the *Thurrock Landscape Capacity Study (2005)* and the *Thurrock Landscape Character Assessment (2007)*.
- 1.2.35 Policy CSTP23, Point II. requires “the retention and enhancement of significant natural, historic and built features which contribute to the character of the Borough as defined by their value, quality, cultural association and meaning or their relationship to the setting and local context.”
- 1.2.36 Point III. States that “the Council requires the retention and enhancement of strategic and local views, which contribute to a distinctive sense of place. Where development will affect these views, their sensitivity and capacity for change must be adequately assessed and the effect of the development on them appropriately tested.”
- 1.2.37 The Policy requires an assessment based on the *Guidelines for Landscape and Visual Impact Assessment (GLVIA3)* or other methodology supported by the Council.
- Policy PMD1 – Minimising Pollution and Impacts on Amenity, Health, Safety and the Natural Environment**
- 1.2.38 This policy includes the regulation of visual intrusion and light pollution. Point 3. of the Policy requires assessments to accompany planning applications “where it has reasonable grounds to believe that a development may suffer from, or cause:”
- “v. Light pollution...”
- “viii. Visual intrusion.”
- 1.2.39 Point 4. of the Policy notes that where harmful effects are confirmed in assessments, planning permission will only be granted “if satisfactory solutions can be achieved through design, ore suitable mitigation measures can be put in place...”
- Policy PMD2 – Design and Layout**
- 1.2.40 The explanatory text to the Policy recognises that In some places the contrast of land uses within the Borough has led to fragmented character and poor quality of physical and visual linkages. Therefore, “it is essential that new schemes are built to appropriate design and layout standards to protect and enhance the quality and the value of the built environment, natural assets and amenity on and around the development site.” Supporting these aims are a number of Borough-wide studies, including the *Landscape Capacity Study (2005)*.
- 1.2.41 Point 1. states that all development proposals must satisfy the following criteria with regards to:

“i. Character – Development must contribute positively to the character of the area in which it is proposed, and to surrounding areas that may be affected by it. It should seek to contribute positively to local views, townscape, heritage assets and natural features, and contribute to the creation of a positive sense of place.”

viii. Landscape – Features contributing to the natural landscape in the Borough, such as woods, hedges, specimen trees, unimproved grassland, ponds and marshes, will be protected and where appropriate enhanced to maintain their landscape and wildlife value. Provision and enhancement of landscape features will also be required to contribute to multiple uses and/or eco-system services...”

Policy PMD3 – Tall Buildings

1.2.42 While recognising that tall industrial buildings can have a negative, as well as a positive effect, on the community, the Council wishes to adopt a positive approach to assessing tall building proposals, as long as they are developed in appropriate locations, are of a high-quality design (paragraph 6.14).

1.2.43 At point 8. the Policy recognises that *“Tall structures that cannot be occupied (such as silos, telecommunication masts, wind turbines, and chimneys) are not considered tall buildings by the Council and will be dealt with on their own merits, taking into account other relevant policies in the plan and as many of the CABE/English Heritage Criteria for Evaluation [given elsewhere in the Policy] that are relevant.”*

Policy PMD4 – Historic Environment

1.2.44 Although concerned with statutorily protected heritage assets (see Volume 3, Chapter 7: Historic Environment) this Policy also refers to preserving and enhancing non-statutorily protected heritage assets, such as ancient woodlands, landscapes and hedgerows (paragraph 6.19).

Policy PMD5 – Open Spaces, Outdoor Sports and Recreation Facilities

1.2.45 The accompanying text to the Policy recognises that open spaces promote social inclusion, community cohesion, mental and physical well-being and regeneration as well as contributing to biodiversity and nature conservation. These places are important to their function, but also to their amenity value, contribution to local character and distinctiveness and to Thurrock’s Greengrid (paragraph 6.21) (see Volume 3, Chapter 8: Land Use, Agriculture and Socio-economics).

1.2.46 With regard to existing facilities, point 1 states that *“the Council will safeguard all existing open spaces”*...*“development proposals that would result in a complete or partial loss or cause or worsen a deficiency in the area served by the space or facility will not be permitted unless:*

i. Conveniently located and accessible alternative facilities of an equivalent or improved standard will be provided...

ii. Proposals would not negatively affect the character of the area and/or the Greengrid.”

Supplementary Planning Guidance

Thurrock Landscape Capacity Study (March 2005)

1.2.47 The main purpose of the study is as a planning tool for assisting strategic decision-making in relation to development and environmental protection (paragraph 1.1.2). The assessment sets out to identify the indicative capacity of Thurrock’s landscapes to different sizes of urban development (paragraph 1.1.3).

1.2.48 As such it does not assess the capacity of the landscape for industrial development. However, it does provide information on key qualities that are desirable to safeguard in different landscape character areas. Those for the proposed development Zone A are listed on page 20 as:

- The setting to Tilbury Fort.
- Horizontal landform
- Large scale landscape.
- Sense of exposure and openness.
- County wildlife and nature conservation sites.
- Historic pattern of drainage ditches.
- Historic green lanes.

1.2.49 The key landscape conditions and options for sustainable development are listed on pages 20 and 21) include:

- Ensure new development respects the setting of Chadwell Escarpment Urban Fringe LCA.
- Ensure that linear marshland habitat is retained within larger scale developments.
- Facilitate access to the marshes from settlement edges via green links.
- Soften the edges of developments with areas of open water and reed beds reflecting the moats at Tilbury Fort.

Thurrock Design Guide: Design Strategy Supplementary Planning Document (SPD) (March 2017)

Designing in Context

1.2.50 The Design Guide explains that a detailed study of the proposed development site and its physical context must be undertaken to understand and respond to local distinctiveness (paragraph 3.1). Applicants have to demonstrate how proposed development has responded to:

- A1. The strategic and local setting and key views
- A2. Strategic Green Infrastructure and landscape
- A3. Character, layout and local features
- A4. Site boundaries and adjacent land uses

Typology

1.2.51 The Thurrock Design Strategy sets out the main design principles for new developments in Thurrock. The place typology and key design requirements relevant to the proposed development are described within the SPD at Typology Three: Commerce and Industry (page 54).

1.2.52 The SPD notes that one of the most striking and defining characteristics of Thurrock is the historic relationship between the Borough and the River Thames, “which has resulted in a legacy of significant commercial and industrial land uses, infrastructure and associated structures, many of which are highly visible due to their scale” (paragraph 4.15).

1.2.53 The Design Guide notes that the ports within and adjacent to the Borough are a focus for commerce, employment and activity. Industrial complexes are part of the overall pattern of development associated with the Commerce and Industry typology (paragraph 4.16).

1.2.54 At Paragraph 4.18, the Design Guide explains that “given the prominence and economic importance of these land uses and structures - and the significant potential for expansion – Thurrock Council is keen to ensure that consideration is given to the design, layout and appearance of developments.”

Key Design Requirements

1.2.55 The key design requirements for developments within Typology Three developments are set out on page 55 of the Design Guide. Design requirement 1. explains that “Thurrock Council will expect proposals to demonstrate how issues of grouping and massing have been considered as part of the design process within the context of the wider landscape. Views towards new developments, particularly those that will be prominent features within the landscape, will need to be fully assessed with consideration given to the need for a visual impact assessment.”

1.2.56 Requirement 7. States that “extensive use of hard and soft landscaping and tree planting must be included as an integral part of new proposals in order to break up the scale of multiple or groups of commercial and industrial buildings as well as providing a robust visual framework.”

1.2.57 However, Requirement 8 explains that “care must be taken when designing hard and soft landscape features to account for the prevailing character of the area – this is particularly important in locations near the Thames where marshland and grasslands predominate.”

1.2.58 The Design Guide requires that “boundary treatments and security features must also be designed to have a minimal visual impact whilst remaining effective” (Requirement 9).

1.2.59 Key design requirement 10, explains that “proposals must consider how plant equipment, areas for machinery and lighting are integrated into the design from the outset to form a ‘composition’ of elements.”

Kent Downs Area of Outstanding Natural Beauty

1.2.60 A section of the Kent Downs Area of Outstanding Natural Beauty (AONB) lies within the study area for the proposed development. Although the proposed development does not lie within a designated landscape, the Zone of Theoretical Visibility (ZTV) indicates that some part of the proposed development might be visible from the Kent Downs AONB.

1.2.61 The special characteristics and qualities of the AONB which distinguish it as a nationally important landscape are set out in the Kent Downs Area of Outstanding Natural Beauty Management Plan 2014-2019 (Second Revision 2014). The list of special qualities includes ‘dramatic landform and views’. It notes that there are “breath-taking, long-distance panoramas are offered across open countryside, estuaries, towns...” (page 7).

- 1.2.62 The special characteristics and qualities of the landform and landscape character area detailed at section 4.2 of the Management Plan. Views over the Thames from the highest and most open parts of the chalk plateau and dip-slopes are noted under 'The chalk ridge' landscape element (page 31). The 'Expansive open plateaux' landscape element notes that "north of the chalk scarp the plateaux offer huge open landscapes with a simple structure and sometimes surprising and dramatic views for instance to the Thames Valley" (page 32).
- 1.2.63 The Kent Downs AONB Landform and landscape character Policy LLC2 is concerned with the promotion, management and restoration and appropriate creation of prominent views and viewpoints. However, while part of the landscape seen from the AONB, the proposed development would be seen in the context of the existing industrial development.
- 1.2.64 Similarly while the interpretation of the term 'setting' of the Kent Downs AONB is broad "*the setting of the Kent Downs AONB is broadly speaking the land outside the designated area which is visible from the AONB and from which the AONB can be seen, but may be wider when affected by intrusive features beyond that*" (page 22) the proposed development would be seen in the context of the other infrastructure already existing and that proposed along the inner Thames Estuary.
- 1.2.65 In any event, "*proposals which would affect the setting of the AONB are not subject to the same level of constraint as those which would affect the AONB itself and the weight to be afforded to setting issues will depend on the significance of the impact...*" (page 24). Matters such as the size of proposals, their distance, incompatibility with their surroundings, movement, reflectivity and colour are likely to affect impact. Where the qualities of the AONB which were instrumental in reasons for its designation are affected, then the impacts should be given considerable weight in decisions. This particularly applies to views to and from the scarp of the North Downs.

1.3 Consultation

- 1.3.1 Key issues raised during scoping and consultation to date specific to Landscape and Visual Resources are listed in Table 1.3, together with how details of how these issues have been considered in the production of this PEIR and cross-references to where this information may be found.

Table 1.3: Key points raised during scoping and consultation to date.

Date	Consultee and type of response	Points raised	How and where addressed
30th August 2018	Thurrock Borough Council Landscape and Planning Officers – consultation meeting	The proposed viewpoints were discussed with the officers. Alternative suggestions were made with regards to a few viewpoints. The landscape officer suggested that the viewpoints be the same or similar to the Tilbury 2 and the Tilbury Energy Centre (TEC) viewpoints.	The representative viewpoints are described at paragraphs 3.3.46 to 3.3.77 and illustrated on Figures 3.8 to 3.22. These include photographs from the viewpoints proposed by Tilbury2 and TEC.
31st August 2018	RPS to Thurrock Borough Council Landscape Officer - email	Confirmed that RPS has the Tilbury2 viewpoint plan and requested the TEC viewpoint plan.	
3rd September 2018	RPS to Gravesham Borough Council - email	Requested confirmation of viewpoints from Gravesham Borough Council.	
10th September 2018	Gravesham Borough Council Planning Officer to RPS - email	Gravesham Borough Council will be responding to Thurrock Flexible Generation Plant - EIA Scoping Notification and Consultation for this week's deadline. Whilst the Scoping Report includes visual receptors to the south of the River Thames in Gravesham, we will be suggesting that the same ones be used as for Tilbury 2 / Tilbury Energy Centre so that there is consistency of approach and comparisons can be drawn between assessments.	The representative viewpoints are described at paragraphs 3.3.46 to 3.3.77 and illustrated on Figures 3.8 to 3.22. These include photographs from the viewpoints proposed by Tilbury2 and TEC.
11th September 2018	Thurrock Borough Council Landscape Officer to RPS - email	Sent the TEC viewpoint plan, on a ZTV generated for a 95 m high stack.	
12th September 2018	RPS to Thurrock Borough Council Landscape Officer - email	Questioned whether a ZTV for the 50 m high TEC building had been produced. Noted that most of the TEC viewpoints were the same as the Thurrock Flexible Generation Plant viewpoints and that photographs at additional locations had been taken and a few omitted as there weren't views/barely any view and the effects from that distance would not be significant. The email noted that there was a view of the site from the roof (publicly accessible) of the Wildlife Trust Visitor Centre at Mucking Marshes nature reserve, as the landscape officer had thought, so that photographs from that location has been added. RPS is to send a final list of viewpoints when these have been finalised.	Final PEIR list of viewpoints sent to Thurrock Borough Council Landscape Officer on the 1st October 2018.
12th September 2018	Thurrock Borough Council Landscape Officer to RPS - email	Confirmed that the TEC viewpoint plan was all that Thurrock Borough Council has received to date.	
Reponses included in or appended to the Planning Inspectorate (PINS) Scoping Opinion			
20th September 2018	The Planning Inspectorate - Scoping Opinion	<p>ID 4.1.2 Assessment The ES should clearly explain any assumptions made in the landscape and visual assessment regarding the number, height, diameter and placement of the stacks.</p> <p>ID 4.1.3 Mitigation The Scoping Report indicates that screen planting may be provided as a means of mitigating the impacts on landscape and visual receptors (paragraph 3.23). The ES should clearly describe the proposed landscaping and demonstrate how this relates to other nearby landscaping proposals (e.g. Tilbury2, Tilbury Energy Centre and the Lower Thames Crossing) where such detail is known. It should be clear how the landscape and effects are expected to alter as proposed planting matures. Any interactions with other ES aspects, for example impacts on local ecology, should be explained. The Applicant should discuss and make effort to agree the planting specification/ species mix with relevant consultation bodies.</p> <p>ID 4.1.4 Receptors The ES should assess impacts to residential receptors where significant effects are likely to occur. The ES should identify any guidance documents used to inform the assessment of impacts to residential amenity.</p>	<p>Table 2.7 sets out the Maximum Design Scenario, that the LVIA is based upon.</p> <p>The impact of the Thurrock Flexible Generation Plant has been made initially without landscape mitigation. An appropriate landscape mitigation strategy will be developed following consultation and detailed in the final ES.</p> <p>All aspects of the landscape mitigation strategy will be discussed with the relevant consultation bodies, as the landscape strategy develops.</p> <p>The impact of the proposed development on residential receptors is assessed in paragraphs 4.1.1 to 4.1.5 and paragraphs 4.2.9 to 4.2.43 as well as within the representative viewpoints.</p> <p>Night time effects of the proposed development, including lighting during construction are assessed at paragraphs 4.1.16</p>

Date	Consultee and type of response	Points raised	How and where addressed
		<p>ID 4.1.5 Night time impacts The Scoping Report explains that an assessment of night time effects on landscape and visual receptors will be undertaken; the Inspectorate advises that this should include impacts from lighting. The Applicant's attention is drawn to the Inspectorate's comments in Table 4.17, ID 4.17.22 of this Opinion.</p> <p>ID 4.1.6 Cumulative impacts The ES should clearly explain the baseline year used to inform the cumulative landscape and visual assessment. The ES should set out any assumptions made regarding the likely stages of construction/ operation applicable to Tilbury2, the Lower Thames Crossing, Tilbury Energy Centre and the other developments identified.</p> <p>ID 4.1.7 Viewpoints and photomontages Twenty potential viewpoints are identified (paragraph 8.19 and Figure 9 of the Scoping Report). It is proposed that the exact location of viewpoints and photomontages are agreed with Thurrock District Council (and Natural England in respect of the Kent Downs AONB). For the assessment of cumulative impacts, the Applicant should consider the viewpoints selected for other developments in the area including Tilbury2, Tilbury Energy Centre and Lower Thames Crossing.</p> <p>Having regard to the characteristics of the Proposed Development and the range of likely effects, the Inspectorate advises that neighbouring planning authorities including Gravesham Council are also consulted and effort is made to agree representative viewpoints/ photomontages. Both summer and winter views should be included.</p> <p>ID 4.1.8 Receptors Impacts (including cumulative impacts with other developments) likely to result in significant effects on the visual amenity of users of the River Thames should be assessed in the ES. This is likely to be of most relevance if the cooling water option is pursued.</p> <p>ID 4.1.9 Impacts – construction The ES should assess impacts with the potential to result in likely significant effects on landscape and visual receptors resulting from use of the construction compounds and use of any temporary structures/features required for construction (such as material/soil stockpiles and cranes).</p> <p>ID 4.1.10 Design The ES should explain how the siting and design of the proposed structures (and the materials to be used) have been selected with the aim of minimising impacts to landscape and visual receptors.</p> <p>ID 4.3.3 Impacts to users of Public Rights of Way The ES should assess impacts to users of PRoW where likely significant effects may occur. The assessment of impacts on PRoW users should consider potential interactions with other aspect assessments as relevant (for example noise, dust, recreation and visual impact).</p> <p>ID 4.17.2 An assessment of impacts from lighting, with the exception of potential impacts from light on ecological receptors The Inspectorate notes the relatively undeveloped, rural nature of the application site. Whilst specific details of the lighting requirements are not provided, the Inspectorate assumes that during operation, permanent night-time lighting would be required for the main development site. There is also potential for cumulative visual effects from lighting associated with other proposed developments. As such, the Inspectorate considers that any likely significant effects on the visual amenity of residents arising from night -time construction and operational lighting should be assessed. Any impacts from lighting on navigation should also be assessed where significant effects are likely.</p>	<p>and 4.1.45 and at the operation stage at paragraphs 4.2.6 and 4.2.44 and paragraphs 5.2.17 to 5.2.18. Note this work is ongoing and will be reported fully within the final ES.</p> <p>A cumulative impact assessment is detailed in Section 5 of this chapter.</p> <p>Initial viewpoints were discussed with the relevant officers at Thurrock and Gravesham Borough Councils. The viewpoints used by Tilbury2 and suggested by TEC have been used. In addition, further viewpoints, suggested by Essex County Council and apparent during fieldwork have been included in the assessment.</p> <p>Gravesham Borough Council has been consulted. Due to the time of the LVIA process, the photographs in the PEIR are 'summer' photographs. The Final ES will include 'winter' photography as well as assessment of the visual impacts when the leaves are off the deciduous trees and bushes.</p> <p>The visual impact of the development proposal on users of the River Thames is assessed at paragraph 4.1.30 and 4.2.29.</p> <p>The impacts during the construction phase of the proposed development are assessed in Section 4 of this chapter.</p> <p>Mitigation such as any façade treatment will be detailed in the final ES. The LVIA for the PEIR has been undertaken without consideration of landscape mitigation.</p> <p>The visual impacts on users of PRoW are considered in paragraphs 4.1.18 to 4.1.22, paragraphs 4.2.17 to 4.2.21, as well as within the representative viewpoint assessments.</p> <p>Details of the proposed lighting are set out in Volume 2, Chapter 2: Project Description. The night time impacts of the proposed development on landscape and visual receptors are considered in paragraphs 4.1.7, 4.1.45, 4.2.6 and 4.2.44. The cumulative night time impacts of the Thurrock Flexible Generation Plant facility together with other known NSIPs and other cumulative schemes, on landscape and visual resources and receptors is outlined in paragraphs 5.2.17 and 5.2.18. Note this work is on-going and will be reported in the final ES.</p>
6th September 2018	Essex County Council (appended to PINS Scoping Opinion) - letter	The non-technical summary correctly identifies the need to assess cumulative impacts arising from other national infrastructure projects and developments within this area. There will be a need to consider the landscape and visual impacts associated with the development of land which may otherwise have provided an element of landscape mitigation for the proposed development of Tilbury 2 and the Energy Centre. The proposed location for the Thurrock Flexible Generation Plant is directly to the east of the DCO order limits for Tilbury 2 so this will impact on the scope for the	The cumulative impacts arising from other NSIPs and developments within the area are assessed in Section 5. The configuration of the infrastructure on Zone A and the location and extent of the replacement Common Land is shown on the layout plan contained within Volume 2, Chapter 2:

Date	Consultee and type of response	Points raised	How and where addressed
		<p>marshes to offer wider landscape mitigation for this development.</p> <p>Specific comments</p> <p>The DCO boundary will need to incorporate all land where the primary landscape mitigation measures are proposed. The LVIA will need to identify how the proposal will impact upon the effectiveness of the proposed landscape mitigation strategy for Tilbury 2.</p> <p>Paragraph 8.18 and 8.19 - Proposes 20 potential viewpoints with the exact location of representative viewpoints and photomontage 'to be agreed with Thurrock Council'. Figure 6 9 shows the proposed locations. These viewpoint locations appear to be limited in range and in terms of assessment of visual impacts. The final choice of viewpoints should be agreed with all the relevant local planning authorities. Visual receptors should be considered in terms of their type for example residential, transport road/rail and recreational i.e. visitors to promoted sites, bridleway and footpath users. It is suggested that other areas where viewpoints need to be considered and identified are as follows:</p> <ul style="list-style-type: none"> • Fort Road, east of Tilbury (note VP 11 Tilbury 2) • West Tilbury from the St James Churchyard, and from footpath 68 • West Tilbury from Church Road • North of West Tilbury, from footpaths 67 and 63. • Chadwell St Mary, south east side of settlement from footpaths • East Tilbury, edge of new settlement extension and bridleway 58 • South of Station Road, footpath 200 • Coalhouse Fort, various locations including the car park • Coalhouse Point and footpath 146, Two Forts Way <p>Figure 9.8 of the Tilbury 2 LVIA documentation also provides useful locations in relation to some of the areas.</p> <p>The Scoping Report states that five visual representations will be provided. It is suggested that this seems rather limited given the range and scope of likely visual receptors with the zone of theoretical visibility. Once the assessment process has been undertaken it is likely that this will highlight the need for additional visual representations to be presented. Some viewpoint locations may also coincide with the Heritage receptor locations for example Coalhouse Fort and its setting.</p> <p>The potential landscape and visual impacts arising from this proposed NSIP development on the identified receptors, designated sites and adjacent landscapes will need to be assessed and identified. Proposals for appropriate landscape mitigation measures, to deal with the identified landscape and visual impacts will need to be set out in a Landscape Mitigation Strategy, in a similar manner to that proposed for Tilbury 2.</p> <p>The strategy will need to identify additional landscape mitigation measures which are required to deal with the residual landscape and visual impacts arising from the development, and associated infrastructure. This is likely to include the need for off-site measures.</p> <p>Mitigation measures will need to be identified and these should be designed to accord with the key characteristics and qualities of the neighbouring landscape character areas. The Tilbury urban area, West Tilbury, Tilbury Marshes and Chadwell escarpment LCA areas are likely to experience the most significant visual impacts and measures to mitigate impacts and reinforce the landscape condition should be designed accordingly.</p> <p>Where the identified landscape measures fall outside the DCO boundary line then specific agreements to ensure that works are secured, delivered (funded and implemented) and managed appropriately will need to be formulated.</p>	<p>Project Description. A landscape mitigation strategy will be included in the final ES. The final ES will assess the effectiveness of the Tilbury2 landscape mitigation strategy.</p> <p>With regard to the number of viewpoint locations: Thurrock Borough Council and Gravesham Borough Council have expressed their wish to have the same or similar viewpoints to those used/suggested in the Tilbury2 and TEC projects. In addition, the fieldwork revealed more viewpoints and, in some cases, more suitable locations than those set out in the initial viewpoint selection. Those that have been taken thus far are included in Figures 3.8 to 3.22. The photographic work is on-going and further representative viewpoints will be used in the assessment at the final ES, including 'winter' photographs. Responses to individual viewpoints are set out below:</p> <p>Photograph taken (Viewpoint 9, Figure 3.12)</p> <p>Photograph taken from churchyard (Viewpoint 7, Figure 3.11). Restricted views from PRow 68.</p> <p>Restricted views from Church Road or adjacent roads due to hedgerows</p> <p>Photographs taken from PRow 63 (photograph taken but similar to VP5) and 67 (Viewpoint 5, Figure 3.10) work on-going.</p> <p>PRow 200 is very overgrown. Photographs taken but only one included (Viewpoint 10, Figure 3.12)</p> <p>See Viewpoint 17, Figure 3.16, work on-going, further viewpoints will be presented in the final ES</p> <p>View from Coalhouse Point – work ongoing. Photographs taken from Thames Estuary Path/Two Forts Way/FP146/Cycle Route 13, see Viewpoints 15 and 16, Figure 3.15.</p> <p>The report uses the Tilbury2 documentation as far as is relevant to the Thurrock Flexible Generation Plant development proposal.</p> <p>Following fieldwork eight viewpoints have been selected from a range of viewpoints and the wirelines are presented at Figures 4.30 to 4.37. As with the representative viewpoint location photography, the number and location of the visualisations have not been fixed and are under review, as fieldwork progresses. Volume 3, Chapter 7: Historic Environment has used several of the same viewpoints as this chapter.</p> <p>The impact of the Thurrock Flexible Generation Plant has been made initially without landscape mitigation. An appropriate landscape mitigation strategy will be developed following consultation and detailed in the final ES.</p> <p>The details and the location of the landscape mitigation will be finalised and set out in the final ES and outline Landscape Scheme and Management Plan. No landscaping measures outside the DCO application boundary are envisaged at this stage,</p>

Date	Consultee and type of response	Points raised	How and where addressed
7th September 2018	Gravesham Borough Council (appended to PINS Scoping Opinion) - Delegated Report	<p><u>General</u> From a Gravesham perspective, the key issues that need to be covered by the Environmental Statement (both on a solus basis and in combination with other schemes) includes landscape and visual resources.</p> <p><u>Cumulative Impacts</u> In terms of cumulative impacts, the list of projects included in the Scoping Report includes:</p> <ul style="list-style-type: none"> • POTLL Tilbury 2 • Lower Thames Crossing • Tilbury Green Power (within existing Tilbury Docks area - Tilbury 1) • The continuing demolition of RWE Tilbury B power station • RWE proposals for Tilbury Energy Centre • London Distribution Park • Goshens Farm land remediation <p>Cumulative impacts should be considered for both the construction and operational phases of the developments. In addition, consideration should be given as to the implications of some of the above not coming forward, given they do all have consent or there may be a failure to implement. For example, in the event of Tilbury 2 or the Tilbury Energy Centre not being granted consent or being taken forward, the proposed development subject of current scoping would be in a more exposed location relative to Gravesham given the absence of screening development. This may have implications in terms of visual impact and noise transmission.</p> <p>It is also suggested that consideration be given as to whether the NSIP proposals for London Resort at Swanscombe Peninsula could result in cumulative impacts that need to be taken into consideration - particularly if water cooling is used or water transport used during the construction phase, given the proposed Marine Conservation Areas detailed in the Scoping Report.</p> <p><u>Landscape and Visual Resources</u> The proposal will extend the area of industrial development to the east of Tilbury Fort, with the potential up to 60 x 40m high exhaust stacks in particular being a prominent feature. Whilst Green Belt is not an environmental designation per se, the development is likely to impact on the perception of openness and rurality of the countryside to the east of Tilbury lying north of the existing developed riverside. Taken in combination with Tilbury 2, the RWE Tilbury Energy Centre, and Lower Thames Crossing this could significantly change the landscape character of this area when viewed from south across the River Thames. The need to have security lighting on-site means that this impact also needs to be assessed both during the daytime and during hours of darkness.</p> <p>Whilst the Scoping Report includes visual receptors to the south of the River Thames in Gravesham, it is suggested that the same ones be used as for Tilbury 2 / Tilbury Energy Centre so that there is consistency of approach and comparisons can be drawn between assessments.</p> <p>Footpath NG1 and NS138 are of particular importance as the main riverside footpath comprised in the Saxon Shore Way/Coastal Path east of Gravesend. An assessment of visual impact from the junction of PROWs NS138 and NS318 is therefore welcome given its location adjacent to Shornemead Fort, a currently undesignated heritage asset forming part of the historic Thames defences. This therefore will also be important in determining potential impact on the significance of these heritage assets through development within their setting. A viewpoint adjacent to Gravesend Town Pier and at Windmill Hill is also supported as key vantage points.</p> <p>However, it is requested that the visual impact of the proposal also be assessed from the Gravesend Riverside Leisure Area/New Tavern Fort given the popularity of this area as one of the key open spaces within Gravesham and its historical importance relative to Tilbury Fort. This would be consistent with the approach taken in respect of Tilbury 2 and the RWE Tilbury Energy Centre.</p> <p>The Council stresses that the in-combination effects in regard to air quality, noise and vibration, landscape and visual effects, socio-economic and cultural heritage are the areas where it considered special attention needs to be undertaken in regard to this development.</p>	<p>The cumulative impact assessment is set out in Section 5 of this chapter.</p> <p>The assessment of the visual impacts during the construction phase of the Thurrock Flexible Generation Plant facility on its own are considered in Section 4.1. Operational visual impacts are assessed in Section 4.2. Visual impacts during decommissioning are assessed in Section 4.3.</p> <p>The cumulative impact assessment at Section 5 of this chapter considers the London Resort on the Swanscombe Peninsula.</p> <p>The cumulative impact assessment at Section 5 of this chapter considers effects on landscape character.</p> <p>The representative viewpoints used in the LVIA correspond to those used in Tilbury2 and TEC, as advised by Thurrock and Gravesham Borough Councils. Additional viewpoints have been added following fieldwork and others have been suggested by Essex County Council (in its response to the Scoping Report. Where time has allowed these have been investigated and photographs taken. However, photography and fieldwork is ongoing and representative viewpoints may be added to those included within this PEIR.</p> <p>The representative viewpoint locations and locations of visualisations are shown on Figure 2.2. The character photograph locations are shown on Figure 2.3. The impact of the proposed development on the setting of designated and undesignated historic assets is assessed in Volume 3, Chapter 7: Historic Environment.</p> <p>Representative Viewpoints 20 and 21 (Figures 3.17 and 3.18) are the views from New Tavern Fort and the Gravesend Riverside Leisure Area and the Saxon Shore Way as it is routed along Gordon Promenade adjacent to the River Thames and north of Gordon Recreation Ground/Gardens.</p> <p>The in-combination effects are considered in Volume 4, Chapter 18: Summary of Cumulative Effects.</p>

Date	Consultee and type of response	Points raised	How and where addressed
	Marine Management organisation (appended to PINS Scoping Opinion) -	8.1 The MMO welcomes the methodology for informing the potential landscape and visual impacts which can be found in section 8.10 of the scoping report, including considering mitigation measures as part of the iterative design process.	Noted. The methodology is set out in Section 2 of this chapter.
7th September 2018	Natural England (appended to PINS Scoping Opinion) – email	<p><u>Cumulative and in-combination effects</u></p> <p>The scale of development proposed in this area requires careful consideration of both temporary and permanent in-combination impacts. The EIA will need to consider impacts on existing environmental features, previous mitigation commitments of the land within and adjacent to the development and any mitigation and compensation schemes that are required enable the delivery of other development coming forward in this locality. We would advise that one approach would be the preparation of a co-ordinated mitigation strategy would be agreed between the applicants for this site and nearby developments which would safeguard and join up important environmental features and provide enhancement at the landscape scale.</p> <p>We agree with the Tier 1 and 2 developments listed in para 6.58 with the potential for cumulative effects, although the applicant may find it helpful to consult Thurrock Council for other relevant projects to include.</p> <p><u>Nationally Designated Landscapes</u></p> <p>As the development site is within/adjacent to Kent Downs Area of Outstanding Natural Beauty (AONB), consideration should be given to the direct and indirect effects upon this designated landscape and in particular the effect upon its purpose for designation within the environmental impact assessment, as well as the content of the relevant management plan for this AONB.</p> <p><u>Landscape and visual impacts</u></p> <p>Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography. The European Landscape Convention places a duty on Local Planning Authorities to consider the impacts of landscape when exercising their functions.</p> <p>The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.</p> <p>Natural England supports the publication Guidelines for Landscape and Visual Impact Assessment, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment.</p> <p>In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.</p> <p>The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.</p> <p>The assessment should refer to the relevant National Character Areas which can be found on our website. Links for Landscape Character Assessment at a local level are also available on the same page.</p>	<p>The cumulative impact assessment at Section 5 of this chapter considers effects on landscape and visual resources.</p> <p>The site of the Thurrock Flexible Generation Plant facility does not lie within or adjacent to any designated landscapes, including the Kent Downs AONB. There are no direct landscape effects on the Kent Downs AONB. The direct impact on the Special Qualities of the AONB insofar as they relate to views over the Thames Estuary is not significant, as discussed in paragraph 5.2.6.</p> <p>Landscape character within the study area is illustrated on Figure 3.2 and Figure 3.3. This chapter assesses the impact of the proposed Thurrock Flexible Generation Plant facility on landscape and visual resources at Section 4.</p> <p>This chapter assesses the impact of the proposed Thurrock Flexible Generation Plant facility on landscape and visual resources at Section 4. The methodology set out in Section 2 is based on the Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3) (landscape Institute and Institute for Environmental Management and Assessment, 2013).</p> <p>The details and the location of the landscape mitigation, including details of materials, will be finalised and set out in the final ES and outline Landscape Scheme and Management Plan.</p> <p>The cumulative impacts during construction, operation and decommissioning are considered in Section 5 of this chapter.</p> <p>National character areas (NCAs) are reviewed at paragraphs 3.2.17 to 3.2.19 and shown on Figure 3.2. Local landscape character areas are reviewed in paragraphs 3.2.20 to 3.2.32 and illustrated on Figure 3.3.</p>

Date	Consultee and type of response	Points raised	How and where addressed
5th September 2018	Tilbury2 (Port of Tilbury London) (appended to PINS Scoping Report) – note/report	<p><u>Landscape Character and Visual Amenity</u></p> <p>3.13 TFGP will create further change in the local landscape with Tilbury2, TEC and LTC, as such the cumulative effect on local landscape character could be of increased significance within the Tilbury Marshes character area. These schemes having been constructed would likely require a reassessment of this character area by Thurrock Council to better reflect what will be increasingly urban/urban fringe characteristics.</p> <p>3.14 The combined sight and sound of the four projects could have an overall effect of increased significance on scenic quality and tranquillity. The area where this effect would likely be most marked is broadly defined by the rural extents of the West and East Tilbury Marshes, including the north bank of the Thames as well as the eastern reaches of the Chadwell Escarpment.</p> <p>3.15 The combined effect of TFGP with Tilbury 2, TEC and LTC could affect cultural heritage value associated with the SAM's of Tilbury Fort, New Tavern Fort and Coalhouse Fort. Being to the east of Tilbury2, the TFGP could increase the presence of industry in the far distance from Coalhouse Fort, adding to TEC and LTC if this were visible and audible in the middle distance (if a link to Tilbury were constructed). The cumulative impacts of all four schemes on leisure and tourism value would need to be considered further once the detail of TFGP is known, albeit it does not appear that any public rights of way are directly affected. In terms of visual amenity, the combined effects of all four projects would be experienced in views from the east and north-east that take in the TEC site and the TFGP (that would be prominent and consolidate the presence of industry at Tilbury2). From the east the effect could be substantial in close views but slight in more distant views such as Coalhouse Fort. From the south (when viewed from Gravesham), the cumulative effects of four schemes could be greater depending on how TFGP is viewed in relation to TEC.</p> <p>3.16 The cumulative effect of artificial lighting would increase when Tilbury2, TFGP, TEC and LTC schemes are all operational.</p>	<p>An assessment of the cumulative impacts on landscape and visual resources and receptors is at Section 5 of this chapter. Cumulative visualisations are provided at Figures 5.44 to 5.57.</p> <p>The cumulative impact on leisure and tourism receptors is assessed in Volume 3, Chapter 8: Land Use, Agriculture and Socio-economics.</p> <p>The cumulative night time impacts will be assessed at Section 5 of this chapter. Note this work is on-going and will be reported in the final ES.</p>
7th September 2018	Landscape Officer Thurrock Borough Council (appended to PINS Scoping Report)	<p>The proposed Landscape and Visual Impact Assessment will be carried out in accordance with the best practice guidance e.g. the Guidelines for Landscape and Visual Impact Assessment 3rd Edition. During an initial meeting potential viewpoints were discussed. It is agreed that these will be finalised with the local authorities prior to commencement of the LVIA.</p> <p>At present the route to be used for construction traffic has yet to be finalised. There is concern that the option running south and east of Chadwell St Mary using Turnpike Lane is likely to have significant adverse impacts on the characters of historic lanes the adjacent Conservation Area. It is hoped that an alternative route can be identified.</p>	<p>Following fieldwork, a revised representative viewpoint location plan was sent to the landscape officer at Thurrock District Council on the 1st October 2018.</p> <p>The locations of the construction routes have been visited and the impacts assessed in Section 4.1. As the environmental impact assessment is an iterative one, revised routeing or other methods of mitigation will be examined to establish whether they might assist in reducing any adverse effects, including potential impacts on historic lanes.</p>

Date	Consultee and type of response	Points raised	How and where addressed
3rd September 2018	Public Health Commissioning Manager, Thurrock Borough Council (appended to PINS Scoping Opinion)	<p>The World Health Organisation (WHO) defines health as “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” This definition encapsulates the ‘holistic’ and ‘whole’ person. Health and wellbeing can be affected by a variety of complex and interrelated factors including the built environment and communities that people live in. The definition also focusses on keeping people well. In order to support people to remain well requires acknowledgement of the role that wider determinants of health can play. This includes consideration of issues such as landscape, traffic, congestion, air quality, and how economic factors such as employment can impact on health.</p> <p>The identification within the LVIA for the use of greening and landscaping with strategic planting will not only support mitigation on air quality but would look to mitigate the impacts on climate change (which will include issues arising from flooding and managing extremes in weather temperature) and will also benefit local residents and employees in terms of the mental well-being benefits that a green visual landscape would bring. Light pollution will also need to be identified within this, as this could have an effect on well-being through sleep deprivation.</p> <p>We would also like, as part of the socio-economic and amenity element, to touch on the Landscape and visual effects LVIA that is to be undertaken and suggest that consideration be paid to the potentially negative effects to emotional wellbeing and potential decrease in civic pride that could be felt by Thurrock residents through bad visual planning, as well as potential economic effects on the locality by the negativity of visitors from outside the borough to the historical sites and SSI areas. It is suggested that consultation with other developments in agreeing a plan around greening, colours and planting to be undertaken.</p>	The details and the location of the landscape mitigation, including details of materials, will be finalised and set out in the final ES and outline Landscape Scheme and Management Plan.

2. Assessment Approach

2.1 Guidance

Relevant Landscape Guidance

- 2.1.1 As a matter of best practice, this assessment has been undertaken based on the relevant guidance on landscape and visual assessment. This includes:
- 2.1.2 Guidelines for Landscape and Visual Impact Assessment: Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013) (GLVIA3):
- Landscape Character Assessment – Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage, 2002); and
 - Technical Information Note 08/2015: Landscape Character Assessment, (Landscape Institute, February 2016).

2.2 Proposed Approach

- 2.2.1 As set out in GLVIA3, this Landscape and Visual Impact Assessment (LVIA) assesses the potential significant landscape and visual effects of the proposed Thurrock Flexible Generation Plant facility. Those resources and receptors that do not have the potential to experience significant effects are identified, but not assessed.
- 2.2.2 Landscape and visual effects are assessed separately, although the procedure for assessing each of these is closely linked. A clear distinction has been drawn between landscape and visual effects as described below:
- Landscape effects relate to the effects of a proposed development on the physical characteristics of the landscape and its resulting character and quality; and
 - Visual effects relate to the effects on views experienced by visual receptors (e.g. residents, footpath users, tourists etc.) and on the visual amenity experienced by those people.
- 2.2.3 The LVIA assesses the short-term effects of the construction and decommissioning phases and the long-term effects relating to the operation and maintenance phase.

Baseline study

- 2.2.4 A desk-based review of legislative and planning context relevant to the site and landscape and visual issues associated with the proposed development has been undertaken (Section 2).
- 2.2.5 A combination of desk-based study and fieldwork has been used to determine both the landscape and the visual baseline conditions.
- 2.2.6 A Zone of Theoretical Visibility (ZTV) has been generated (based on a 40 m stack height) to show the extent of theoretical visibility of the proposed development and the landscape areas that might be indirectly affected within the LVIA study area.
- 2.2.7 Fieldwork was undertaken in late August and early to mid-September. Consequently, the photography represents 'summer' conditions, i.e. with the leaves on the trees and hedgerow plants. Winter photographs will be undertaken for the submission of the final ES. Any changes to the LVIA, following assessment of the winter photography, will be reported in the final submission of the ES.
- 2.2.8 The visual context of the proposed development was established, including the extent of views from public footpaths, residential properties, commercial properties, recreational areas/open space, roads and other receptors.
- 2.2.9 The assessment is illustrated by representative viewpoint photographs towards the existing site from publicly accessible locations that have been agreed with Thurrock Borough Council and Gravesham Borough Council. Additional viewpoints were requested by Essex County Council and viewpoints were also added when the fieldwork was being undertaken. The representative viewpoint locations are illustrated on Figure 2.2 and the viewpoints are at Figures 3.8 to 3.22. Visualisations have been prepared for key viewpoint locations, to illustrate the proposed development within the existing context of the surrounding landscape (Figures 4.30 to 4.37).
- 2.2.10 The representative viewpoints were identified using the ZTV. They were confirmed or adjusted by fieldwork, with additional viewpoints being added where it was thought it would aid the better understanding of the baseline visual resources and therefore, the assessment. Those viewpoints suggested in the Scoping Opinion responses were also investigated and if views were available and where they were thought to add to the understanding of the baseline they have been included in the LVIA.

- 2.2.11 Fieldwork also identified landscape baseline conditions, and included an investigation of the existing topography, existing vegetation, roads and built development. Landscape character photographs for the main site (Zone A) the gas connection point (Zone E) the haul roads (Zones H and J) and other areas within the proposed development boundary are included within the LVIA at Figures 3.23 to 3.29. The locations of the character photographs are shown on Figure 2.3.
- 2.2.12 The visual context of the proposed development has been established, including the extent of views from public footpaths, residential properties, commercial properties, recreational areas/open space, roads and other receptors.
- 2.2.13 The likely landscape and visual effects of the proposed development have been assessed by considering the change that would result from it against the landscape and visual resource or receptor, as outlined in the Figure 2.1 below:

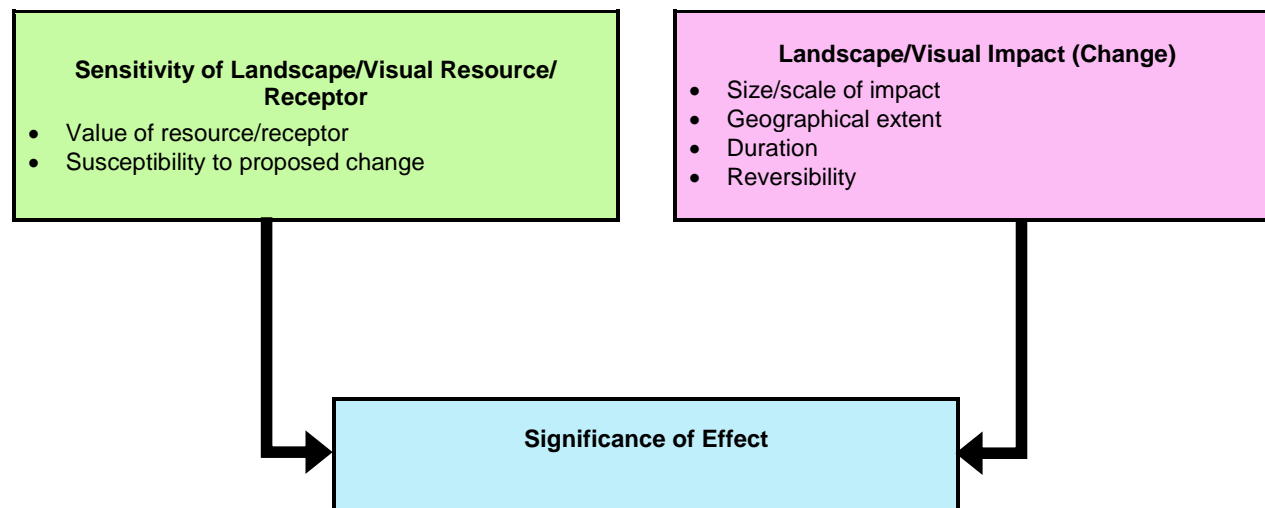


Figure 2.1: Assessment Approach.

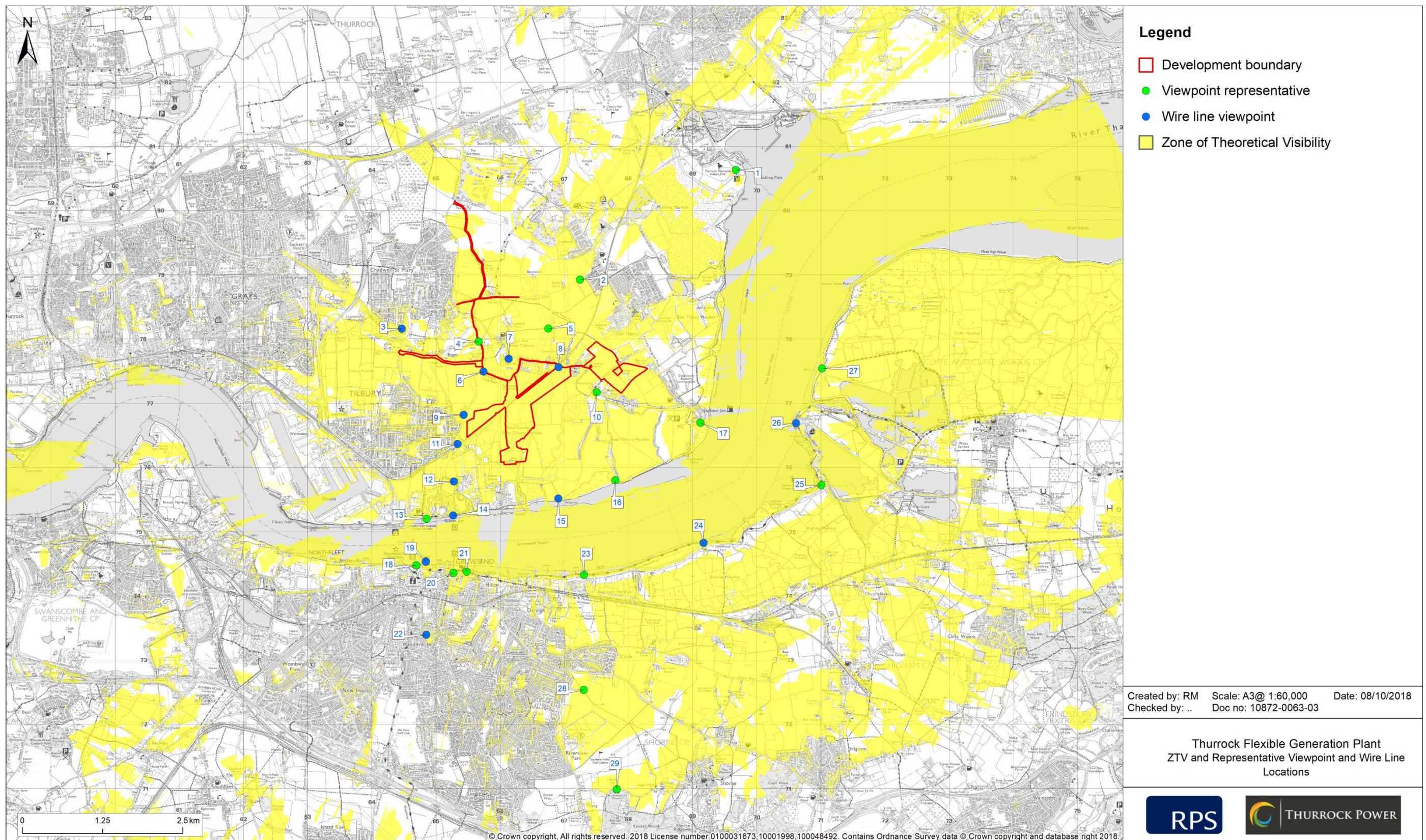


Figure 2.2: ZTV and Representative Viewpoint and Wire Line Locations.

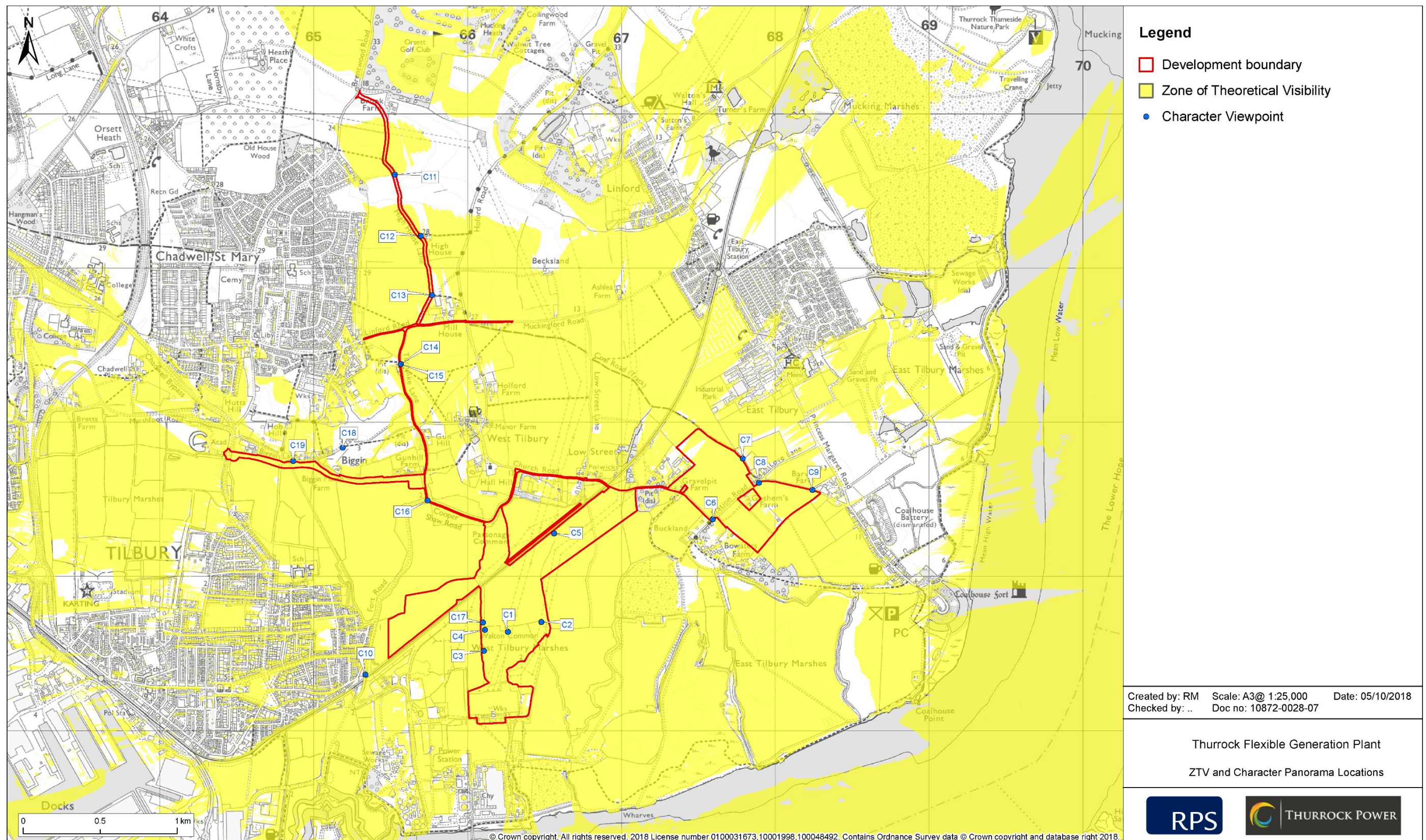


Figure 2.3: ZTV and Character Panorama Locations.

Desktop study

2.2.14 Information on landscape and visual resources within the 10 km study area was collected through a detailed desktop review of existing studies. These are summarised at Table 2.1 below.

Table 2.1: Summary of key desktop reports.

Title	Source	Year	Author
National Landscape Character Areas: <ul style="list-style-type: none"> 81: Greater Thames Estuary 111: North Thames Basin 113: North Kent Plain 119: North Downs 	Natural England website, accessed September 2018	2018	Natural England
Landscape Character Assessment of the Essex Coast	SAIL (Schéma d'Aménagement Intègre du Littoral) and Essex County Council	2005	Essex County Council
Thurrock Landscape Character Assessment	Extract from Thurrock Borough Local Plan Evidence Base	Undated	Thurrock Borough Council
Thurrock Landscape Capacity Study	Thurrock Council	2005	Chris Blandford Associates
Kent Downs AONB Management Plan 2014-2019: Second Revision	Kent Downs AONB Partnership	2014	Kent Downs AONB Partnership

Site specific surveys

2.2.15 In order to inform the EIA, the site-specific surveys listed in in Table 2.2 have been undertaken as agreed with Thurrock Borough council and Gravesham Borough Council and as advised by Essex County Council and Natural England.

2.2.16 Viewpoint identification is on-going and winter photography will be undertaken when conditions allow, prior to submission of the final ES.

Table 2.2: Summary of site-specific surveys undertaken.

Title	Extent of survey	Overview of survey	Survey provider	Year	Reference to further information
Fieldwork –photography within the Borough of Thurrock	Within study area	Photography for representative viewpoint and character studies to inform both the landscape and visual impact assessments	RPS	30 August 2018	See Figures 3.8 to 3.29
Fieldwork –photography within the borough of Thurrock	Within study area	Photography for representative viewpoint and character studies to inform both the landscape and visual impact assessments	RPS	4 September 2018	See Figures 3.8 to 3.29
Fieldwork – photography within the Borough of Gravesham	Within study area	Photography for representative viewpoint and character studies to inform both the landscape and visual impact assessments	RPS	5 September 2018	See Figures 3.8 to 3.29
Fieldwork –photography and proposed development characterisation within Thurrock and Gravesham Boroughs	Within study area	Photography for representative viewpoint and character studies to inform both the landscape and visual impact assessments	RPS	7 September 2018	See Figures 3.8 to 3.29
Fieldwork –photography within Thurrock and Gravesham Boroughs, including preliminary fieldwork/photography following Essex County Council’s request for viewpoints contained within the Scoping Opinion.	Within study Area	Photography for representative viewpoint and character studies to inform both the landscape and visual impact assessments	RPS	25 September 2018	See Figures 3.8 to 3.29

2.3 Study area

2.3.1 The site of the proposed development is divided into a number of zones, see Figure 2.4, and a study area of 10 km from the outer edges of the proposed development for the LVIA (Figure 2.5) has been adopted. This is based on a stack height of 40 m and main generating station building height of 20 m above a foundation level of approximately 5 m AOD. It is also based on experience of assessing this type of development and the context in which the proposed development is located.

2.4 Uncertainties and/or data limitations

- 2.4.1 A ZTV is only a first step in indicating whether or not a proposed development might be visible from a certain location.
- 2.4.2 LiDAR data, used in the generation of the ZTV map does not recognise all vegetation, such as some hedgerows. As a consequence, views of the proposed development may not be available from all areas highlighted by the ZTV.
- 2.4.3 The ZTV only indicates that part of the proposed development can be seen, it does not indicate how much can be seen, and does not allow for distance or different weather conditions. This can only be established through fieldwork, photomontages and expert judgement.
- 2.4.4 The visual appraisal is based on analysis of OS mapping of the proposed development and surrounding area and on field survey of views towards the proposed development from publicly accessible viewpoints in the surrounding landscape. Although every effort has been made to include viewpoints in sensitive locations and areas from which the proposed development is likely to be most visible, not all public viewpoints from which the proposed development would be seen are included in the assessment.
- 2.4.5 The lack of winter photography is a limitation to the LVIA at the PEIR stage. However, this will be undertaken to inform the LVIA ahead of the final submission of the ES.
- 2.4.6 As the proposed materials of each of the elements, has not yet been finalised, the visualisations are wirelines only at this stage.
- 2.4.7 Accurate details for all of the cumulative developments are not available and judgements have had to be made on exact location and dimensions based on written information and publicly available images. Therefore, the cumulative visualisations are wirelines only at this stage.

2.4.8 As the landscape mitigation proposals are yet to be finalised, the visualisations do not include any proposed landscape mitigation.

2.4.9 The impact of the Thurrock Flexible Generation Plant has been made initially without landscape mitigation. An appropriate landscape mitigation strategy will be developed following consultation and detailed in the final ES.



Figure 2.4: Zone Location Plan on Aerial Photograph.

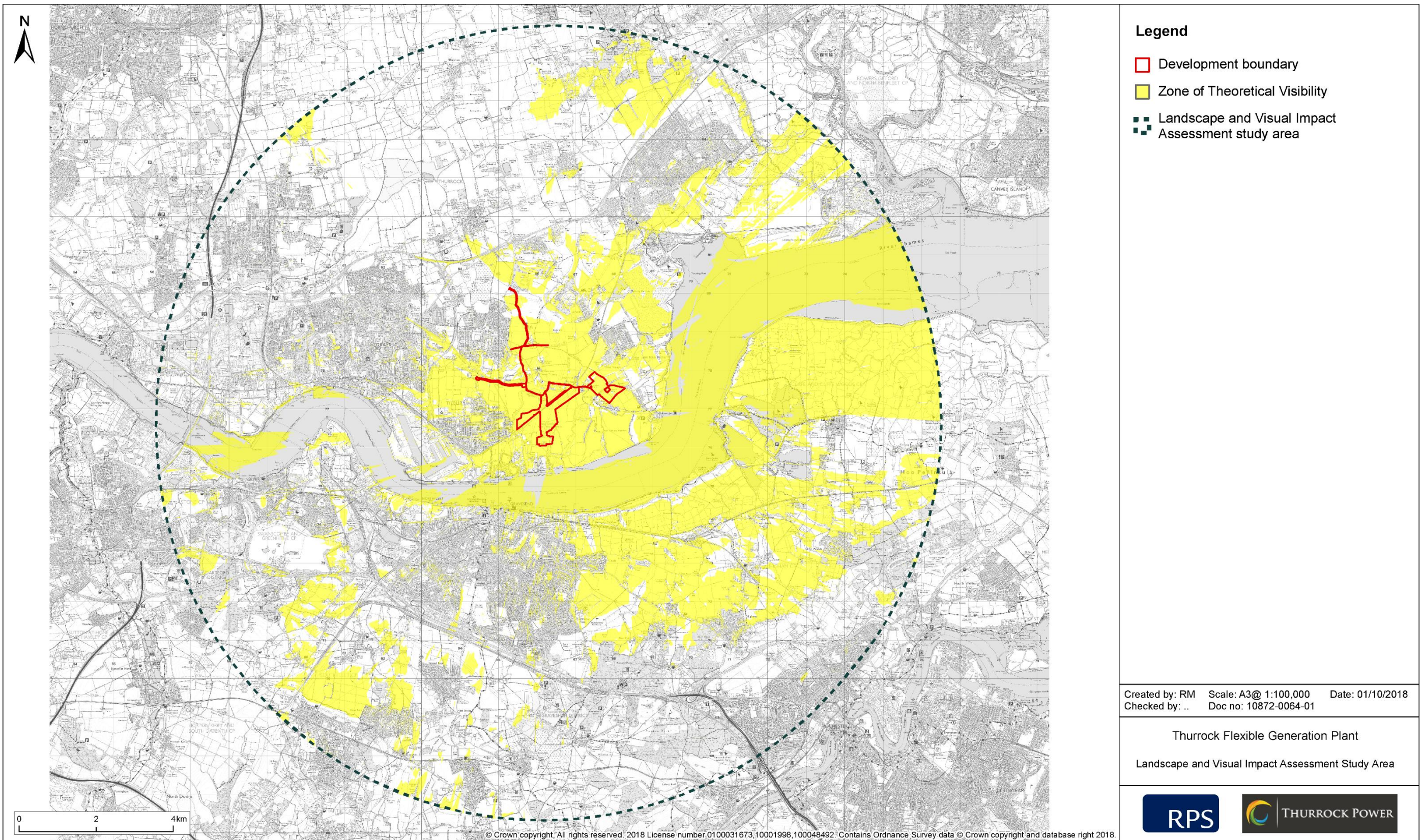


Figure 2.5: Landscape and Visual Impact Assessment Study Area.

2.5 Impact assessment criteria

2.5.1 The purpose of the assessment is to evaluate the magnitude of impact (change) to landscape and visual resources and receptors to enable the likely significant effects of the proposed development to be identified.

2.5.2 GLVIA3 states that the level of effects is ascertained by professional judgement based on consideration of the sensitivity of the baseline landscape or visual receptor and the magnitude of change as a result of the proposed development.

2.5.3 This section describes the criteria applied in this chapter to characterise the magnitude of potential impacts and sensitivity of receptors. The terms used to define magnitude and sensitivity are based on those used in the DMRB methodology, which is described in further detail in Volume 2, Chapter 4: Environmental Impact Assessment Methodology.

Magnitude of impact on landscape resources / receptors

2.5.4 The magnitude of impact or change affecting landscape receptors depends on the size or scale, geographical extent of the area influenced and its duration and reversibility. These factors are described below:

2.5.5 Size or scale: *“The extent of the existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape...; the degree to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones...”; and, “whether the effect [impact] changes the key characteristics of the landscape, which are critical to its distinctive character”* (GLVIA3, para 5.49).

2.5.6 Geographical extent: Distinct from scale or size, this factor considers the geographical area over which the landscape impacts will be felt, it might, for example, be a moderate loss of landscape receptors or character over a large area, or a large loss of receptors or character over a very localised area. At para 5.50 GLIA3 notes that *“in general effects [impacts] may have an influence at the following scales, although this will vary according to the nature of the project and not all may be relevant on every occasion: at the site level within the development site itself; at the level of the immediate setting of the site; at the scale of the landscape type or character area within which the proposal lies; and, on a larger scale, influencing several landscape types or character areas.”* For the purposes of this appraisal, the assessment considers the impact of the proposed development on the published landscape character areas and units, both at county and national level, i.e. the third and fourth landscape scales.

2.5.7 Duration and reversibility: Duration is categorised as short, medium or long-term. GLVIA3 explains that as there are no standard lengths of time within these categories, the assessment must state what these are and why these have been chosen (GLVIA3, para 5.51). Reversibility is described as *“a judgement about the prospects and practicality of the particular effect being reversed in, for example, a generation”* (GLVIA3, para 5.52). Projects can be considered to be permanent (irreversible), partially reversible or fully reversible. For the purposes of this appraisal the proposed development is considered to be fully reversible.

Magnitude of impact on visual receptors

2.5.8 As with the magnitude of landscape impacts, the magnitude of impact or change affecting visual receptors depends on the size or scale, geographical extent of the area influenced and its duration and reversibility. These factors are described below:

2.5.9 Size or scale: Judgements need to take account of: *“the scale of the change [impact] in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development; the degree of contrast or integration of any new features or changes in the landscape with existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture; and, the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses”* (GLVIA3, para 6.39).

2.5.10 Geographical extent: This will vary from viewpoint to viewpoint and will reflect: *“the angle [orientation] of view in relation to the main activity of the receptor; the distance of the viewpoint from the proposed development; and, the extent of the area over which the changes [impact] would be visible”* (GLVIA3, para 6.40).

2.5.11 Duration and reversibility of visual effects: As with landscape impacts, duration should be categorised as short, medium or long-term and projects considered to be permanent (irreversible), partially reversible or fully reversible (GLVIA3, para 6.41). For the purposes of this appraisal the impacts on views of the proposed development are considered to be fully reversible.

2.5.12 The criteria for defining magnitude of impact in this chapter are outlined in Table 2.3.

Table 2.3: Criteria for magnitude of impact.

Magnitude of impact	Landscape Impacts	Visual Impacts
Large	Where there are substantial changes affecting the character of the landscape, or important elements. Proposed development within or close to affected landscape. Size of development out of scale with existing elements.	Dominant. Has a defining influence on the view.
Medium	The proposed development forms a visible and recognisable feature in the landscape. Proposed development is within or adjacent to affected character area/type. Scale of development fits with existing features.	Prominent. Has an important, but not defining influence on view; is a key element in the view.
Small	Changes to the physical landscape, its character and the perception of the landscape are slight.	Visible, but not prominent. Minor component and no marked effect on view.
Negligible	The impact of change on the perception of the landscape, the physical features or the character is barely discernible.	The character of the view will not be altered by the proposed development. The proposed development is at such a distance or is heavily screened so as to be barely perceptible and may only be visible in clear conditions. May go unnoticed.
No change	No loss or alteration of landscape characteristics, features or elements; no observable impact either adverse or beneficial.	No loss or alteration of elements that make up the view: no observable impact either adverse or beneficial on the view.

Sensitivity of Landscape Receptors

- 2.5.13 The sensitivity of a landscape receptor is a combination of “judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape” (GLVIA3, para 5.39). For the purpose of this appraisal, susceptibility and value of landscape receptors are defined as follows:
- 2.5.14 Landscape susceptibility: “the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed change without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies” (GLVIA3, para 5.40).

2.5.15 Value of the landscape receptor: “The value of the Landscape Character Types or Areas that may be affected, based on review of designations at both national and local levels, and, where there are no designations, judgements based on criteria that can be used to establish landscape value; and, the value of individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particularly landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of these contributors” (GLVIA3, para 5.44).

Sensitivity of visual receptors

- 2.5.16 Visual receptors are always people. The sensitivity of each visual receptor (the particular person or group of people likely to be affected at a specific viewpoint) “should be assessed in terms of both their susceptibility to change and in views and visual amenity and also the value attached to particular views” (GLVIA, para 6.31). For the purpose of this appraisal, susceptibility and value of visual receptors are defined as follows:
- 2.5.17 Visual susceptibility: “The susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of: The occupation or activity of people experiencing views at the particular locations; and, the extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations” (GLVIA3, para 6.32).
- 2.5.18 Value of views: Judgements made about the value of views should take account of: “recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and, indicators of value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment (such as parking places, sign boards or interpretive material) and references to them in literature or art...” (GLVIA3, para 6.37).
- 2.5.19 Sensitivity is not readily graded in bands and GLVIA3 notes, with regards to visual sensitivity, that the division of who may or may not be sensitive to a particular change “is not black and white and in reality there will be a gradation in susceptibility to change” (GLVIA3, para 6.35). In order to provide both consistency and transparency to the appraisal process, however, Table 2 defines the criteria which have guided the judgement as to the intrinsic susceptibility and value of the resource/receptor and subsequent sensitivity to the proposed development.
- 2.5.20 The criteria for defining sensitivity in this chapter are outlined in Table 2.4.

Table 2.4: Criteria for sensitivity.

Sensitivity	Landscape resource/receptor	Visual resource/receptor
Very High	Landscape value internationally recognised, with very limited or no potential for substitution	Views of very high importance and rarity. Viewers travel long distances, including from other countries to experience the view.
High	Landscape value recognised by existing or proposed national designation. The qualities for which the landscape is valued are in a good condition, with a clearly apparent distinctive character and absence of detractors. This distinctive character is susceptible to relatively small changes.	Large number or high sensitivity of viewers assumed. Viewers' attention very likely to be focused on landscape, e.g. residents experiencing views from dwellings; users of strategic recreational footpaths and cycle ways; people experiencing views from important landscape features of physical, cultural or historic interest, beauty spots and picnic areas.
Medium	Landscape value is recognised or designated locally; the landscape is relatively intact, with a distinctive character and few detractors; and is reasonably tolerant of change.	Viewers' attention may be focused on landscape; such as users of secondary footpaths, and people engaged in outdoor sport or recreation (e.g. horse riders using gallops).
Low	Landscape value is low, with no designations; landscape is in a poor condition and a degraded character with the presence of detractors such as industrial units; and the landscape has the capacity to potentially accommodate significant change.	May include people at their place of work, or engaged in similar activities, whose attention may be focussed on their work or activity and who may therefore be potentially less susceptible to changes in view. Occupiers of vehicles whose attention may be focused on the road.

2.5.21 The significance of the effect upon landscape and visual resources is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 2.5. Where a range of significance of effect is presented in Table 2.5, the final assessment for each effect is based upon expert judgement.

2.5.22 For the purpose of this LVIA any effects with a significance level of moderate or less are considered to be **not significant** in EIA terms.

Table 2.5: Matrix used for the assessment of the significance of an effect.

	Magnitude of impact					
	<i>No change</i>	<i>Negligible</i>	<i>Small</i>	<i>Medium</i>	<i>Large</i>	
Sensitivity of receptor	<i>Low</i>	None	Negligible or minor	Negligible or minor	Minor	Minor or moderate
	<i>Medium</i>	None	Negligible or minor	Minor	Moderate	Moderate or major
	<i>High</i>	None	Minor	Minor or moderate	Moderate or major	Major
	<i>Very high</i>	None	Minor or Moderate	Moderate or major	Major	Substantial

2.6 Maximum design envelope parameters for assessment

2.6.1 The maximum design envelope parameters identified in Table 2.6 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These parameters have been identified based on the overview description of the development provided in Volume 2, Chapter 2: Project Description, including all potential development options where these are under consideration by the applicant.

2.6.2 Effects of greater adverse significance are not predicted to arise should any other development scenario within the proposed development design envelope be taken forward in the final design scheme.

2.7 Impacts scoped out of the assessment

2.7.1 No impacts have been scoped out of the assessment for landscape and visual resources.

Table 2.6: Maximum design envelope parameters assessed.

Potential impact	Maximum design scenario	Justification
Construction		
Temporary visual and landscape character impact of construction activity and plant	Tower cranes used at any time in Zone A or Zone I during phases 1 and 2 of construction period	Reasonable maximum potential visual impact from temporary construction activity
	Directional, motion-activated security lighting used at main development site (Zone A), above ground installation for gas connection (Zone E) and main component laydown area (within Zone I) during a construction period lasting up to six years	Reasonable maximum potential night-time visual impact. The applicant does not expect that other areas of trenching or haul road would require security lighting at night
	Temporary construction haul roads in Zone I and Zone H are restored after construction period; road in Zone J retained for possible future use	Use of these temporary access routes after construction is not proposed by the applicant save in Zone J where access for abnormal load could be required in exceptional circumstances
Operation and maintenance		
Visual and landscape character impact of buildings and structures	Maximum building envelopes are as follows and are located within the zones labelled on Figure 2.4: <ul style="list-style-type: none"> Sixty gas engine stacks up to 40 m high Gas engine buildings or encasements each up to 50 m wide by 125 m long by 20 m high Battery units or building up to 75 m wide by 120 m long by 10 m high On-site substation components up to 15 m high Above-ground installation buildings up to 6 m high in compound 50 m by 50 m 	Maximum dimensional envelopes within which buildings or equipment would be located
	Directional, motion-activated security lighting used at main development site (Zone A) and gas connection above-ground installation (Zone E)	Permanent lighting is not proposed by the Applicant as the site would not be manned in normal operation
Visual and landscape character impact of lighting at night	Directional, motion-activated security lighting used at main development site (Zone A) and above ground installation for gas connection (Zone E)	Reasonable maximum potential night-time visual impact. As the flexible generation plant is not manned on-site during normal operation, full-time lighting at night is not required
Visual and landscape character impact of access road	Road through Zone C retained for operational access. Maximum operational traffic as specified in Volume 3, Chapter 10: Traffic and Transport.	Reasonable maximum potential impact of road and traffic in operation; maximum design scenario parameters have been defined in that chapter
Decommissioning		
Visual and landscape character impact of buildings, structures and access road	Ongoing operation of all or part of flexible generation plant after 35 years	Greatest ongoing, long-term impact
Temporary visual and landscape character impact of deconstruction activity and plant	Decommissioning and deconstruction of development requires similar timescale, plant and working methods as construction	Greatest short-term impact of deconstruction

2.8 Measures adopted as part of Thurrock Flexible Generation Plant

- 2.8.1 A number of measures will be designed in to the Flexible Generation Plant to reduce the potential for impacts on landscape and visual resources. These are listed in Table 2.7.
- 2.8.2 The details and the location of the landscape mitigation, including details of materials, will be finalised and set out in the final ES and outline Landscape Scheme and Management Plan.

Table 2.7: Designed-in measures.

Measures to be adopted as part of Thurrock Flexible Generation Plant	Justification
Code of Construction Practice	To ensure that impacts on landscape and visual resources and receptors during the construction and the operation and maintenance phases are minimised and the long-term establishment of the landscape mitigation proposals are not compromised
Landscape Scheme and Management Plan	To ensure that the appropriate landscape mitigation proposals are maintained and managed properly for the lifetime of the proposed development and beyond.
<p>Landscape mitigation, e.g. copses, trees and hedgerows, scrub planting, wildflower meadow and waterside/reed bed planting.</p> <p>Additionally, with the agreement of the landowner, the planting of hedgerows along lanes that have lost hedgerows (not as a result of the Thurrock Flexible Generation Plant development) would be proposed, to help reinforce/re-establish the landscape character in the area.</p>	<p>To minimise the impacts on landscape and visual resources and receptors and where necessary replace those landscape receptors lost as a result of the proposed development.</p> <p>To strengthen the landscape character in the area.</p>

3. Baseline environment

3.1 Current baseline

Site Context

- 3.1.1 North of the River Thames the landscape is to the south drained marshland with small areas of rough grazing land. A railway line bisects this apparently flat landscape. The majority of the industrial land uses lie to the south and residential areas to the north of the railway. Multiple overhead lines cross the landscape, terminating at National Grid's 400kV Tilbury substation.
- 3.1.2 Tilbury Fort, a historic asset with distinctive moats and embankments lies in the western part of the study area on the north bank of the River Thames and is linked to Coalhouse Fort by the Thames Estuary Path/Two Forts Way. National Cycle Route 13 runs along part of the path from the west and the east, but is not currently a continuous route. A bunded sea wall defines the edge of the estuary and the public rights of way run on, or to the south of, the sea defences. Currently, the semi-demolished Tilbury Power Station, and the Sertão drill ship, are the tallest elements in this part of the landscape. Other industrial elements and structures to the south and the west of Zone A include a large sewage treatment works.
- 3.1.3 To the west of Tilbury Fort are Tilbury Docks, associated warehouses and the London International Cruise Terminal. The large cranes and wind turbines adjacent to the River Thames, are visible from the surrounding landscape.
- 3.1.4 Tilbury lies to the north of the railway line. Three tower blocks, located off Leicester Road, are landmarks in views across this part of Thurrock.
- 3.1.5 Chadwell St. Mary lies to the north-west of the proposed development. It also has three distinctive tower blocks, forming landmarks within the surrounding area.
- 3.1.6 Grays is located approximately 3.5km to the north-west and is the largest town in the Borough of Thurrock.
- 3.1.7 Small villages and hamlets, including West Tilbury and Low Street, are found on the ridge of higher ground to the north of Zone A.
- 3.1.8 Beyond the ridgeline to the north and north-east lie the village of Linford and the larger village/small town of East Tilbury, which was originally developed in the 1930s to house workers at the Czechoslovakian shoe manufacturer Bata.

- 3.1.9 Part of the fieldwork included photographing and recording the landscape on which the proposed development has been envisaged. The viewpoint locations for these character photographs are set out on Figure 2.3.

Zone A

- 3.1.10 Zone A is the main development site where the gas fired facility, battery storage facility and customer substation will be located, it has a total area of 18.5 ha. It lies immediately north of National Grid's 400kV Tilbury Substation (Viewpoints C1 and C2, Figure 3.23).

Zone B

- 3.1.11 Zone B is National Grid's 400kV Tilbury substation, to which an electrical connection will be made. It lies to the north of Tilbury Power Station and immediately south of Zone A. The total area of the zone is 9 ha. It is an area that contains many electrical components of the substation, including overhead lines and towers. The area also includes a large shed-type, industrial building (Viewpoints C3 and C4, Figures 3.23 and 3.24).

Zone C

- 3.1.12 Zone C is the corridor for the permanent access road and gas pipeline route. It is 23.8 ha in area. Zone C is an area of farmland with a farm track running along the southern side and parallel to the railway, from Zone I to Station Road immediately south of the level crossing. It contains several high voltage, overhead electricity lines, supported by eight towers, of different sizes, as well as 11kV lines on wooden poles (Viewpoint C5, Figure 3.24).

Zone D

- 3.1.13 Development zone, Zone D is the area in which the corridor for the gas pipeline may be routed. It has a total area of 26 ha. It is divided by Station Road. The area to the north lies to the south and east of Readmans Industrial Estate and Gravelpit Farm. The area to the south lies between Bowaters Farm and Goshem's Farm (Viewpoints C6 and C7, Figures 3.24 and 3.25).

Zone E

- 3.1.14 Zone E is the land within which the above ground installation for connection to the high-pressure gas main will be made. It has a total area of 6.1 ha. It lies to the east of Goshem's Farm. The southern section of Station Road forms its western boundary (Viewpoints C8 and C9, Figure 3.25).

Zone F

- 3.1.15 Zone F1 is the primary area within which exchange common land and biodiversity and landscape mitigation could be provided. It has a total area of 11.5 ha. It lies to the north of, and adjacent to, the railway line, to the east of Tilbury (Viewpoint C10, Figure 3.26).
- 3.1.16 Zone F2 is a wildlife corridor (biodiversity mitigation) and has a total area of 0.6 ha. It lies to the north of, and adjacent to, the railway line, to the south-west of Low Street. The area and surrounding field contains several high voltage overhead power lines crossing it (Viewpoint C10, Figure 3.26).

Zone H

- 3.1.17 Zone H is the construction route access and has a total area of 18.5 ha. It comprises on and off-road routes from the Brentwood Road in the north to Zone D in the south (Viewpoints C11 to C16, Figures 3.26 to 3.28).

Zone I

- 3.1.18 Zone I is existing common land (Parsonage Common) used for temporary construction haul route, laydown area and biodiversity and landscape mitigation and has a total area of 6.6 ha. It lies on drained marshes to the south of Hall Hill. It is divided by the railway. The smaller, southern part of Zone I is a linear area of Access Land reached by means of an unprotected-type crossing of the railway, from Parsonage Common. One high voltage overhead power line crosses this section of Zone I (Viewpoint C17, Figure 3.28).

Zone J

- 3.1.19 Zone J is the location of the temporary construction haul route and has a total area of 5.4 ha. It runs east from a roundabout junction with the A126 to the south of Chadwell St. Mary, parallel with part of Biggin Lane and a farm track and joins Gun Hill lane (Viewpoints C18 and C19, Figures 3.28 and 3.29).

Topography

- 3.1.20 The majority of the land in which the proposed development is located is low-lying and relatively flat. Approximately 1km to the north of the main site, a ridgeline runs west to east, rising to approximately 25 m AOD at Gun Hill. The town of Tilbury lies at the same level as the site, while the settlement to the north, Chadwell St Mary, sits on the ridgeline, at approximately 30 m AOD.

- 3.1.21 The low ridge of land to the north of the proposed development is the topographical divide for hydrology. Watercourses to the north of the ridge run east and join the River Thames at The Lower Hope and watercourses south of the ridge run, via a series of ditches, south into the Thames, and join the river at the Gravesend Reach.

Zone A

- 3.1.22 Zone A lies at approximately 2 m AOD and is slightly uneven in its levels. The larger part, Walton Common, is surrounded by ditches. The smallest part of Zone A, located in the eastern part of the site (not part of Walton Common) is also surrounded by ditches, barring the field entrance linking it to Walton Common. The remaining section of Zone A abuts the other two areas to the north and while its east, south and west boundaries are marked by ditches, the northern boundary is unmarked as it runs diagonally (south-west to north-east) across an open, flat arable field (Viewpoints C1 and C2, Figure 3.23).

Zone B

- 3.1.23 Zone B is National Grid's Tilbury 400kV substation. It lies at a similar level to Zone A and has ditches marking its northern and eastern boundaries (Viewpoints C3 and C4, Figures 3.23 and 3.24).

Zone C

- 3.1.24 Zone C adjoins the northern part of Zone A and runs parallel to the railway line north-east to Station Road. The land rises gently from approximately 2 m AOD close to Zone A to 5 m AOD close to Station Road. Zone C includes three watercourses/ditches that flow roughly north to south across this part of the proposed development and has ditches marking its western and part of its eastern boundary (Viewpoint C5, Figure 3.24).

Zone D

- 3.1.25 Zone D is formed of two parts, either side of Station Road. To the north of Station Road the large field is gently undulating. The highest part of the field, in the south-east, is approximately 12 m AOD. The lowest part of the field, in the west, lies approximately 5 m AOD. No watercourses or ditches cross or form boundaries to this field (Viewpoints C6 and C7, Figures 3.24 and 3.25).
- 3.1.26 To the south of Station Road Zone D comprises three fields to the south and west of Goshem's Farm. The highest point lies to the south of Goshem's Farm at above 15 m AOD and the lowest point is in the south-west corner at below 10 m AOD.

Zone E

- 3.1.27 Zone E lies adjacent to the southern part of Zone D, on its eastern side. Its northern boundary is Station Road. The highest point is above 15 m AOD in the north-east and the land falls away from this high point, rising again towards the south-west. No watercourses or ditches cross or form boundaries to this field (Viewpoints C8 and C9, Figure 3.25).

Zone F

- 3.1.28 Zone F1 is located north of the railway line, to the east of Fort Road. It comprises a large part of a flat arable field that lies below 5 m AOD. No watercourses cross the field, but ditches form the northern and eastern boundaries (Viewpoint C10, Figure 3.26).
- 3.1.29 Zone F2 is a strip of land to the north of the railway linking Parsonage Common to the track south of Church Road, which will be used as a wildlife corridor. It lies below 5. M AOD. Ditches mark its eastern and western boundaries.

Zone H

- 3.1.30 Zone H is the area that contains a potential construction access road route option and includes pinch-points, as well as areas where weight and speed restriction changes are required. It stretches from the junction with Brentwood Road in the north to the south of Gravelpit Farm/Zone D in the south-east (Viewpoints C11 to C16, Figures 3.26 to 3.28).
- 3.1.31 The junction with Brentwood Road lies below 20 m AOD and the land rises as the route of the access road turns south and joins a farm track. At the point that the road joins High House Lane the land lies at approximately 25 m AOD. It dips down before rising again to a broad plateau, to the east of Chadwell St Mary, that lies between 29 m AOD and 25 m AOD. To the east of Mill House Farm, the construction access road crosses Linford Road and is contiguous with Turnpike Lane and the Gun Hill lane. Along this section the route does not cross and is not bounded by any watercourses or ditches.
- 3.1.32 Turnpike Lane descends the ridgeline at Gun Hill and becomes Gun Hill lane, the construction access route then follows Cooper Shaw Road across the flat farmland. As the road crosses the farmland it has ditches to either side of it. As the access route turns east it rises to meet Church Road at 13 m AOD
- 3.1.33 As the access road runs east along Church Road it descends from the ridge at Low Street and crosses a ditch/small watercourse to the west of Gravelpit Farm, where the road lies at 2 m AOD. Immediately to the south of Gravelpit Farm it rises to approximately 5 m AOD and joins Zone D.

Zone I

- 3.1.34 Zone I consists of two areas of land. Parsonage Common, which lies to the north of the railway and links to Cooper Shaw Road as it turns north towards the ridgeline, lies below 5 m AOD and is bounded by ditches. A linear section of Zone I lies to the south of the railway, this also lies below 5 m AOD and has ditches on its eastern and western boundaries (Viewpoint C17, Figure 3.28).

Zone J

- 3.1.35 Zone J is a temporary haul route that runs east from a roundabout junction with the A126, opposite the Gateway Academy, to meet Biggin Lane, to the south of Chadwell St. Mary. The route continues east adjacent to, but south of Biggin Lane and passes to the south of Biggin Marsh Farm. Staying at the foot of the ridgeline it passes to the south of Gunhill Farm and joins Gun Hill lane. In the central section of the route, the haul road crosses several ditches and to the south of Gun Hill Farm it lies to the south of a linear pond (Viewpoints C18 and C19, Figures 3.28 and 3.29).

Vegetation

- 3.1.36 The area of land that makes up the East and West Tilbury Marshes, between Tilbury and East Tilbury is mainly drained marshland, divided by reed-filled ditches (see Volume 3, Chapter 9: Onshore Ecology for details of flora and fauna). Some of the fields are used for grazing. Many of the fields, particularly those to the north of the railway, are arable farmland.
- 3.1.37 There are few hedgerows in the flat landscape, where they do exist, species usually include hawthorn (*Crataegus monogyna*), oak (*Quercus robur*), elm (*Ulmus procera*), and occasionally elder (*Sambucus nigra*), blackthorn (*Prunus spinosa*), and dog rose (*Rosa canina*).
- 3.1.38 Tree cover is sparse on the drained marshland and is mainly restricted to the planting associated with the industrial developments, including the sewage works, edges of settlements and hawthorn scrub and small trees either side of the railway line. Scrub and small trees also, intermittently, line roads and paths. Much of the common land is grazed by horses and horse-grazing also takes place on the land at Tilbury Fort and in small fields adjacent to roads. Tree cover and mature and thicker hedgerows are more frequent on the higher land, including on the ridgeline to the north of the proposed development.

Zone A

- 3.1.39 The vegetation of the site itself is mown grassland, with reed filled ditches on some of its boundaries. There are a few scrubby bushes, mainly hawthorn associated with the edges of the field. The eastern field has more hawthorn and other bushes on its boundaries. The northern part is an arable field (Viewpoints C1 and C2, Figure 3.23).

Zone B

- 3.1.40 Most of the area is hard-standing. On the boundaries there are some reed filled ditches and scrubby bushes, mainly hawthorn (Viewpoints C3 and C4, Figures 3.23 and 3.24).

Zone C

- 3.1.41 Zone C comprises the northern parts of four arable fields. It lies immediately to the south of, and parallel to, the railway. The fields are divided by reed-filled ditches, which have some scrub associated with them. The towers for the overhead power lines, have areas of rough grassland at their bases, some areas larger than others. Rough grassland and scrub runs to the north of the farm track adjacent to the railway. Similarly there is rough grassland and scrub on the boundary with Station Road. At the eastern end of the area lies an area of woodland and scrub on the site of a disused pit (Viewpoint C5, Figure 3.24).

Zone D

- 3.1.42 The northern part of Zone D is a large arable field. On the southern and part of the western boundary there is a mature hedgerow with hedgerow trees, which becomes gappy towards the junction of Station Road and Love Lane. There is generally sparse vegetation on the field's boundary with Gravelpit Farm and Readman's industrial estate, although there is a more substantial hedgerow on the eastern side of the industrial estate. The north-west field boundary is marked by a mature hedgerow with some hedgerow trees, as is part of the north-eastern boundary. The northern part of the eastern boundary has no hedgerow the southern part of the eastern boundary of the field north of Station Road is for the most part formed by mature hedgerows, either side of a green lane (Bridleway 58). The most southerly part of this eastern boundary is shared with the back-garden fences/hedges and buildings of two properties that are located to the north-west of the junction of Station Road and Love Lane (Viewpoints C6 and C7, Figures 3.24 and 3.25).

- 3.1.43 The majority of the part of Zone D to the south of Station Road is an arable field, which is separated from the road by a mature hedgerow and an area of rough ground. The eastern section of this part of Zone D is currently used for storage of containers. It is rough ground the southern part of which has been colonised by scrub and small trees.

Zone E

- 3.1.44 Zone E is a roughly triangular arable field, the northern and eastern boundaries of which are formed by Station Road. The road is lined with a mature, although relatively thin, hedgerow. The southern boundary is formed by a mature hedgerow with some hedgerow trees. Allotments lie to the south-east of the southern boundary. It shares its western boundary with the eastern boundary of Zone D, south of Station Road (Viewpoints C8 and C9, Figure 3.25).

Zone F

- 3.1.45 Zone F1 is an irregular shaped arable field. Its southern boundary runs parallel to the railway and a narrow strip of scrub vegetation separates Zone F1 from it. The northern and eastern boundaries are formed by reed-filled ditches there is some scrub vegetation associated with the eastern boundary (Viewpoint C10, Figure 3.26).
- 3.1.46 Zone F2 is located within an arable field. It runs parallel to the railway and abuts the scrubby vegetation that marks the northern embankment. It joins scrubland at its eastern and western ends.

Zone H

- 3.1.47 Zone H is, for the most part contiguous with the existing road network (Viewpoints C11 to C16, Figures 3.26 to 3.28). On the higher land the roads are generally lined by high, mature hedgerows, some bordering areas of trees. In places there are low or no hedges along these roads.
- 3.1.48 However, in the north, the construction access route crosses an arable field and joins a farm track with little or no vegetation on it. Further south the track becomes metalled and joins High House Lane. The lane has gappy hedgerows to either side, with some hedgerow trees. On the southern section of this road, the hedgerow on the eastern side of the lane is more or less continuous, opening out to trees within a field planted at Mill House Farm. There is no hedgerow on the western side of the lane.

Zone I

- 3.1.49 The larger part of Zone I lies to the north of the railway. This section is Parsonage Common and is an area of mown grassland. Ditches with associated vegetation mark the north, east and western boundaries. There is scrub associated with these boundaries, including hawthorn, with some blackthorn.
- 3.1.50 The section of Zone I to the south of the railway is rough mown grassland, used as access to Walton Common. There are reed-filled ditches to either side, with one scrubby hawthorn halfway along the western boundary and an area of scrub/ruderal plants in the north-west part of this area (Viewpoint C17, Figure 3.28).

Zone J

- 3.1.51 At its western junction with the A126, St. Chad's Road, there are a few small trees, part of a mature, but gappy hedgerow on the eastern side of this road. The route then crosses an arable field, immediately to the south of a stable yard and paddock. A thick mature hedgerow separates this equestrian use from the haul road. Zone J crosses the open arable field to the south of Biggin Lane, at its junction with a double ditch. There is rough vegetation associated with the two ditches and some scrub. The route then runs east, parallel to Biggin Lane, within the arable farmland, until the junction with the track leading to Biggin Marsh Farm (Viewpoints C18 and C19, Figures 3.28 and 3.29).
- 3.1.52 A gappy hedgerow with some larger shrubs/small trees separates the haul route from the farm track, until the entrance to Biggin Marsh Farm. The track continues east and the haul route remains to the south and parallel to it within the arable fields. No hedgerow vegetation separates the track from Zone J along this section. To the south of Gun Hill Farm the farm track swings north to the farm, while the haul route continues east. The two are separated by an area of scrubby vegetation with some trees. At the proposed junction with Gun Hill lane there is an area of scrubby vegetation.

Public Rights of Way

- 3.1.53 There are a number of areas of Access land in the drained marshland areas, some of which is also Common Land, such as Parsonage Common, to the north of the railway. Promoted paths in the study area include; The Thames Estuary Path/Two Forts Way, routed along the northern bank of the Thames; and, the Saxon Shore Way that runs along the southern bank of the Thames in north Kent. There are few public rights of way crossing either west or east Tilbury Marshes. However, there is a network of footpaths and bridleways on the ridgeline and the plateau to the east of Chadwell St. Mary.

Zone A

- 3.1.54 Part of Zone A is Walton Common, which is Access Land. The eastern field and the arable field are neither common nor Access Land. No public rights of way cross Zone A.

Zone B

- 3.1.55 No public rights of way cross Zone B and it is not Access Land.

Zone C

- 3.1.56 No public rights of way cross Zone C and it is not Access Land.

Zone D

- 3.1.57 It is not Access Land and not public rights of way cross the farmland. However, Bridleway 58 runs along the eastern boundary of the field.

Zone E

- 3.1.58 No public rights of way cross Zone E and it is not Access Land.

Zone F

- 3.1.59 Neither Zone F1 nor Zone F2 have rights of way crossing them and neither are Access Land. Both abut Parsonage Common, which is Access Land.

Zone H

- 3.1.60 In the northern section of Zone H, the construction access road joins Footpath 78 for a short length, as it is routed along part of a farm track, to the north-east of Chadwell St. Mary. Footpath 64 joins it as it runs along High house Lane, to the north of High House. Footpath 65 joins High House Lane to the north of Mill House Farm. Footpath 75 joins the route of the construction access at the junction of Linford Road and Turnpike Lane.
- 3.1.61 On the slope of the ridgeline, the access is contiguous with Turnpike Lane/Gun Hill lane. Footpath 74 and Footpath 69 join the route from the west and the east. Footpath 72 crosses the haul route at the junction of Turnpike Lane/gun Hill lane and Church Road.
- 3.1.62 On the flat farmland, Footpath 68 joins the construction access route on Gun Hill lane at the base of Gun Hill. On the flat farmland the route runs along first Gun Hill lane and then Cooper Shaw Road, either side of which are ribbons of Access Land.

3.1.63 No further Access Land or footpaths cross or lie adjacent to the construction access until it joins Zone D, which it does opposite the junction of Footpath 200 and Station Road.

Zone I

3.1.64 The larger part of Zone I is Parsonage Common, which is Access Land. The part of Zone I south of the railway is not a common but is Access Land. No public rights of way cross Zone I.

Zone J

3.1.65 No public rights of way cross Zone J and it is not Access Land, barring a small area of land adjacent to its junction with Gun Hill lane.

Night Time Landscape Character

3.1.66 Work is on-going and this will be reported on in the final ES.

3.2 Landscape Value

Landscape Designations

3.2.1 No part of the proposed development falls within, or is adjacent to, a designated landscape. The closest designated landscape is the Kent Downs Area of Outstanding Natural Beauty (AONB) the closest point of which lies approximately 6 km south-south-east of Zone A.

Scheduled Monuments

3.2.2 There are no Scheduled Monuments (SM) which lie within the site area. The nearest SM is Tilbury Fort, approximately 1.5 km to the south-east. Hall Hill, in West Tilbury, lies approximately 1.25 km to the north. Another site within the vicinity of the proposed development is Coalhouse Fort, approximately 2.75 km to the east. All sites lie within the local level study area of 10 km radius and the ZTV indicates that views of the proposed development are available from these sites.

Conservation Areas

3.2.3 West Tilbury Conservation Area is approximately 1 km to the north, with the East Tilbury Conservation Area approximately 2 km to the north-east. The Orsett Conservation Area lies approximately 5.5 km to the north-east, and the Horndon-on-the-Hill Conservation Area approximately 6.5 km to the north. The Corringham Conservation Area lies approximately 8 km to the north-east, and the Fobbing Conservation Area approximately 9 km to the north-east.

Landscape Value of the proposed development site

3.2.4 From the desktop study and the field survey, the landscape value can be assessed. People give value to different landscapes which can be measured based on the following criteria:

- scenic quality;
- rarity;
- representativeness;
- conservation interests;
- wildness;
- cultural associations; and
- tranquillity.

Scenic Quality

3.2.5 This measures the degree to which the landscape appeals to the visual senses. The visual baseline is analysed in more detail in Section 4.

3.2.6 The main built Zone A, is located within an area of rough open grassland. There are views of Tilbury Power Station and the National Grid 400kV Tilbury Substation to the south. The landscape of the highest scenic value within the wider study area is the nationally important Kent Downs AONB. This ridge of high land provides a vantage point for very limited views out from the wooded landscape, over the low lying coastal plain of the Thames Estuary.

Rarity

3.2.7 This is concerned with the presence of rare features and elements in the landscape of the presence of a rare character type.

3.2.8 There are no rare features or elements found within the main built development zone, Zone A. Within the wider landscape the extensive salt marshes and mudflats are an important characteristic of the Thames Estuary.

Representativeness

3.2.9 This analyses the features or elements within the site, which are worthy of retention.

3.2.10 The main built Zone A, is located within a flat, open field bounded by ditches and scrub, these are characterising features of this area.

Conservation Interests

- 3.2.11 This is concerned with the presence of features of wildlife or earth science found within the zones.
- 3.2.12 These are detailed in Volume 3, Chapter 9: Ecology and Volume 3, Chapter 16: Geology Hydrology and Ground Conditions.

Wildness

- 3.2.13 The zones do not have any qualities of wildness.

Cultural Associations

- 3.2.14 This is concerned with the presence of archaeological or historical and cultural interest found within the proposed development. These are detailed in Volume 3, Chapter 7: Historic Environment.

Tranquillity

- 3.2.15 It should be noted that tranquillity is defined differently by different organisations. The Landscape institute defines it a state of calm and quietude associated with peace (Glossary, Guidelines for Landscape and Visual Impact Assessment: Third Edition, 2013) (GLVIA3). The Countryside Agency (now Natural England) and Scottish Natural Heritage described it as “a composite feature related to low levels of built development, traffic, noise and artificial lighting” (paragraph 7.23, Landscape Character Assessment: Guidance for England and Scotland, 2002). The Campaign to Protect Rural England (CPRE) prefers to define it as ‘undisturbed land’.
- 3.2.16 The tranquillity mapping provided by the CPRE is shown on Figure 3.1. In general, the tranquillity of the area increases from west to east. Zone A, lies in the lower half of the tranquillity spectrum, whereas Zone E lies slightly above the middle of the spectrum. Zone A’s location close to the eastern edge of Tilbury and next to Tilbury Substation, Tilbury Power Station and other large industrial buildings precludes any sense of tranquillity. Visual intrusion, lighting, construction and decommissioning activities, as well as noise associated with these facilities provide a discordant influence in the vicinity of the more rural landscape of the Tilbury Marshes.

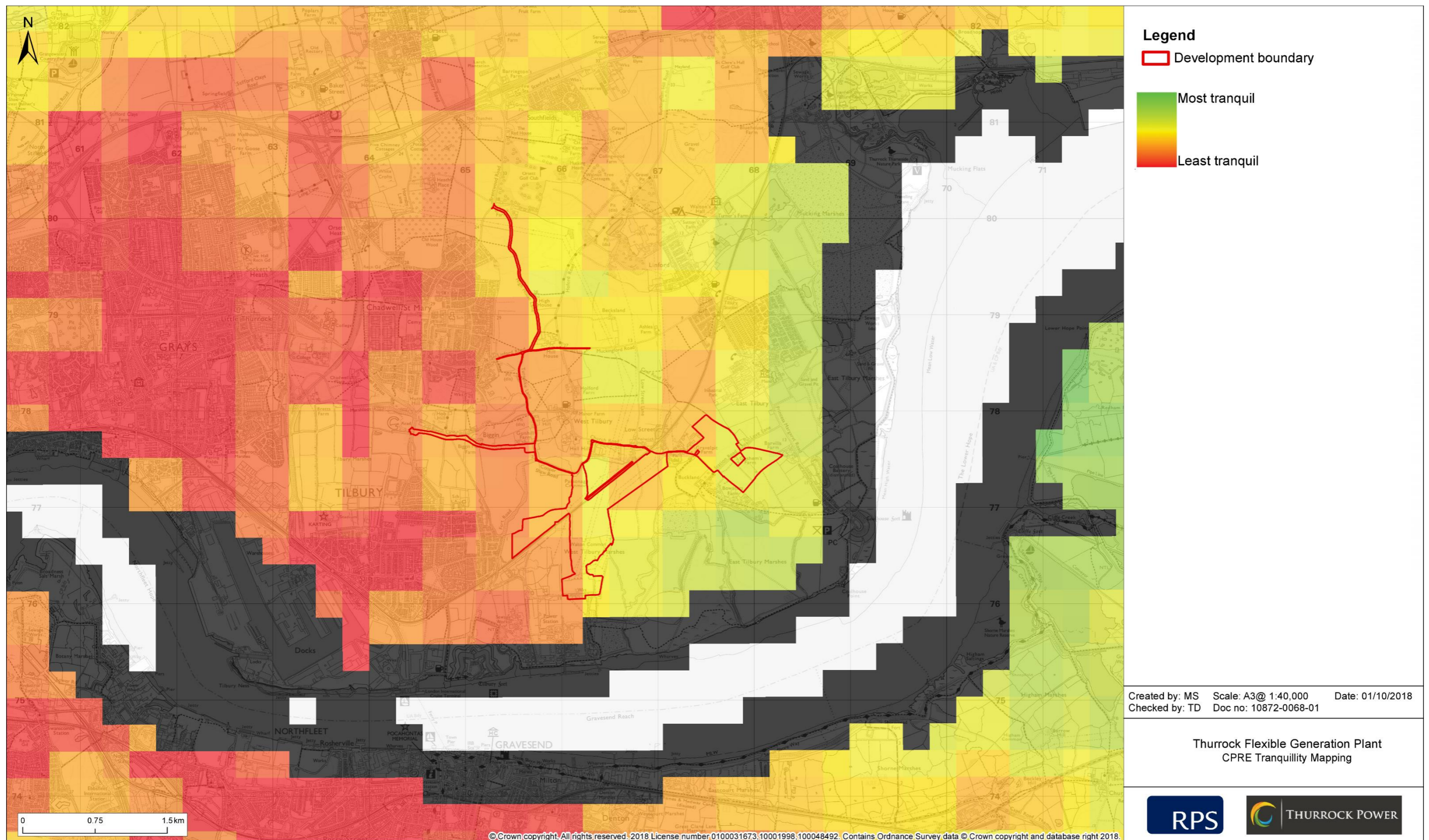


Figure 3.1: CPRE Tranquillity Mapping.

Published Landscape Character

National Landscape Character

3.2.17 Zones A, B, C, E, D, F, H (part) and I lie within National Character Area (NCA) 81: Greater Thames Estuary, as defined in Natural England's (formerly the Countryside Agency and English Nature) National Character Area Profiles, which divides England into 159 Joint Character Areas. Zone J lies within NCA 111: Northern Thames Basin, as does part of Zone H. The other NCAs within the 10 km radius study area are NCA 113: North Kent Plain and NCA 119: North Downs. The NCAs are illustrated on Figure 3.2.

3.2.18 The relevant key characteristics of these NCAs are as follows:

NCA 81: Greater Thames Estuary

- Predominantly flat, low-lying coastal landscape where extensive open spaces are dominated by the sky, and the pervasive presence of water and numerous coastal estuaries extend the maritime influence far inland.
- Open grazing pastures patterned by a network of ancient and modern reed-fringed drainage ditches and dykes, numerous creeks and few hedges or fences, with tree cover a rarity.
- Traditional unimproved wet pasture grazed with sheep and cattle combined with extensive drained and ploughed arable land protected from floods by sea walls, with some areas of more mixed agriculture on higher ground.
- Strong feelings of remoteness and wilderness persist on extensive salt marshes, mudflats and reclaimed famed marshland, which support internationally important plants, invertebrates and populations of breeding and overwintering birds, notably overwintering Brent geese.
- Distinctive landmarks of coastal military heritage including Napoleonic military defences, forts and 20th-century pillboxes.
- Highly urbanised areas within London and on marsh edges subject to chaotic activity of various major developments including ports, waste disposal, marine dredging, housing regeneration, mineral extraction and prominent power stations plus numerous other industry-related activities.
- Increasing development pressures around major settlements and especially towards London, with urban, industrial and recreational sites often highly visible within the low-lying marshes.
- Major historical and current transport link to Inner London provided by the River Thames, with an extensive network of road and rail bridges spanning its reaches within the city.

- NCA 111: Northern Thames Basin
- The landform is varied with a wide plateau divided by river valleys. Extensive tracts of flat land are found in the south.
- Areas that have alluvial deposits present are well drained and fertile.
- The pattern of woodlands is varied across the area and includes areas within Essex that are more open in character.
- The field pattern is very varied across the basin reflecting historical activity.
- Mixed farming, with arable land predominating in parts of the London Clay lowlands.
- The medieval pattern of small villages and dispersed farming settlement remains central to the character of parts of Essex. Market towns have expanded over time as have the London suburbs and commuter settlements.
- NCA 113: North Kent Plain
- An open, low and gently undulating landscape, characterised by high quality, fertile, loamy soils dominated by agricultural land uses.
- A diverse coastline (both in nature and orientation), made up of cliffs, intertidal sand and mud, salt marshes, sand dunes and shingle beaches. Much of the coastal hinterland has been built on, and the coast itself has been modified through the construction of sea walls, harbours and piers.
- Orchards and horticultural crops characterise central and eastern areas and are often enclosed by poplar or alder shelterbelts and scattered small woodlands.
- Woodland occurs on the higher ground around Blean and in smaller blocks to the west, much of it ancient and of high nature conservation interest.
- The area has rich evidence of human activity from the Palaeolithic period. Key heritage assets include military remains along the coast.
- Large settlements and urban infrastructure (including lines of pylons) are often visually dominant in the landscape, with significant development around Greater London, as well as around towns further east and along the coast. Major rail and road links connect the towns with London.

NCA119: North Downs

- The broad dip slope gradually drops towards the Thames and the English Channel, affording extensive views across London and the Thames Estuary. The carved topography provides a series of dry valleys, ridges and plateaux.
- Woodland is found primarily on the areas of the dip slope capped with clay-with-flints. Well wooded hedgerows and shaws are an important component of the field boundaries, contributing to a strongly wooded character. Much of the woodland is ancient.
- Ancient paths, drove roads and trackways, often sunken, cross the landscape and are a distinctive feature of the dip slope. Defensive structures such as

castles, hill forts and Second World War installations, and historic parks, buildings and monuments are found throughout.

- 3.2.19 Due to the nature of the proposed development and the context in which it is located, it is considered that there is not the potential for there to be significant impacts on the Northern Thames Basin, the North Kent Plan and the North Downs NCAs. They are not assessed further in this chapter.

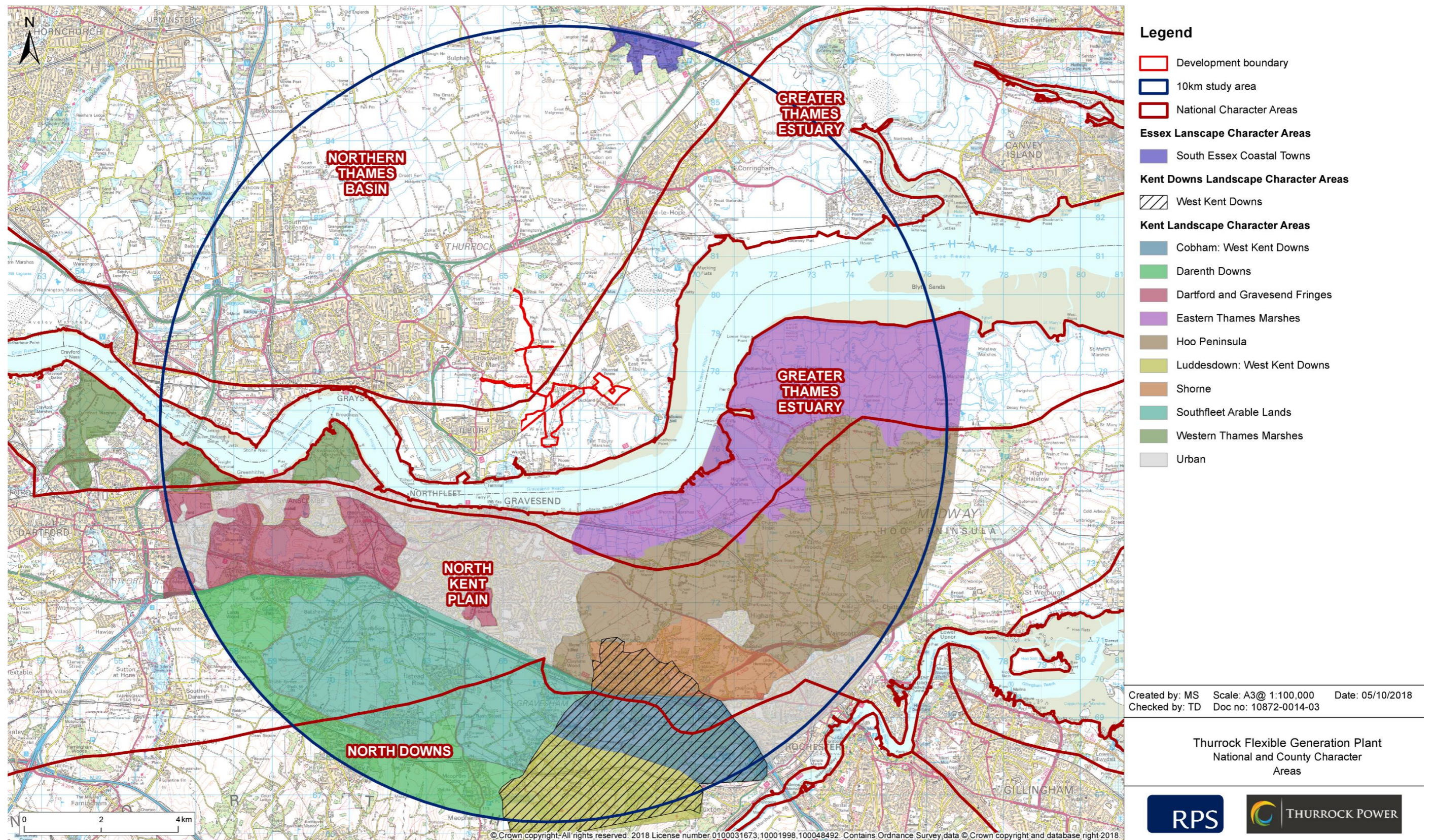


Figure 3.2: National, County and Kent Downs AONB Landscape Character Areas.

Local Landscape Character Assessment

3.2.20 The character of the local landscape within the Borough of Thurrock has been assessed as part of the Thurrock Landscape Character Assessment (undated). This assessment identifies 21 landscape character areas within the Borough. Zones A, B, C (part) F, H (part) and I lie within Landscape Character Area (LCA) C5: Tilbury Marshes Local. Zones C (part) and H (part) are located within LCA D6: Chadwell Escarpment Urban Fringe or West Tilbury/Chadwell Escarpment. Zones D, E and H (part) are located within LCA D7: West Tilbury Urban Fringe or East Tilbury. The northern part of Zone H is located within LCA D4: White Crofts/Orsett Heath Urban Fringe or Orsett/Saffron Garden. The Thurrock LCAs are illustrated on Figure 3.3.

C5: Tilbury Marshes

3.2.21 This character area in the south of the borough comprises a significant area of drained alluvial marshland bounded by the bunded sea wall adjacent to the Thames Estuary, and the port and urban edge of Tilbury to the south, the urban edge of Grays/Little Thurrock to the east, and by the distinctive escarpment of the West Tilbury LCA to the north.

3.2.22 The main characteristics are:

- Mostly flat drained marshland, but localised slight land raising has occurred in the Goshem's Farm area.
- Predominantly arable farmland but with smaller concentrations of rough grazing land around Little Thurrock, Tilbury Fort and Goshem's Farm. Historically the character was wet grazing marsh.
- Medium to large sized fields are bounded by mostly straight ditches and dykes, including reedbeds. Some more winding medieval ditches occur in the West Tilbury Marshes area.
- Lack of hedgerows with a few localised areas of scrub.
- A large-scale landscape with extensive open and exposed land dominated by the sky. Some sense of enclosure is however provided to the north by the West Tilbury escarpment which is a focus for long views, particularly from Fort Road.
- Complete lack of settlement, and relatively few roads especially in the east of the area.
- Historic building and landscape of Tilbury Fort is an important feature in the south of the area with distinctive pattern of moats and embankments.
- Visually detracting influence of the urban edge of Tilbury and associated roads/industrial and port building is significant in the north and west of the area. In the east of the area the large-scale building and bulk of the Tilbury Power Station provides a dramatic contrast to the prevailing flatness of the landscape.

D6: Chadwell Escarpment Urban Fringe or West Tilbury/Chadwell Escarpment

3.2.23 This distinctive area forms a narrow tongue of land running from east to west in the south of the borough, embracing the steep sided sand and gravel escarpment that marks the edge of the lowest part of the Thames Terraces. To the south lies the drained alluvial flat farmland around Tilbury, and to the north the flat to very gently undulating land of the East Tilbury LCA.

3.2.24 The main characteristics are:

- A steep sided south facing escarpment, which despite its relatively low height has a sense of elevation and provides a marked contrast to the flat farmland of the Tilbury Marshes to the south. A few small dry valleys, indent the escarpment.
- Small scale hedge rowed field pattern of rough grassland/pasture, partly also framed by small copses/scrub, strongest in the east of the area around West Tilbury, becoming less distinct in areas to the south of Chadwell. Tree/shrub species include hawthorn, field maples, elm, oak and ash.
- Narrow, winding, enclosed, hedgerowed lanes and tracks running east-west along the top of the escarpment, or north-south down the escarpment.
- Dispersed pattern of individual historic farmsteads, tending to be strung out along the bottom of the escarpment or along the top of the escarpment.
- A fairly unspoilt, rural character in the east of the area.
- Views of the character area from Fort Road to the south are a positive feature, with the tower of West Tilbury Church a focal point on the skyline, providing a feeling of relative isolation, and a strong sense of place.
- Some visual intrusion caused by power lines in the west of the area. Significant adverse visual impact from major road routes in the west around Chadwell, together with localised urban edge housing, industrial and mineral site intrusion.

D7: West Tilbury Urban Fringe or East Tilbury

3.2.25 This character area forms a broad swathe of farmland between Chadwell St Mary and East Tilbury. Its northern boundary is clearly defined by the Linford/Buckingham Hill escarpment, and its south western boundary by the West Tilbury/Chadwell escarpment. The lower land of Mucking Flats and Marshes and the Tilbury Marshes lie to the east and south.

3.2.26 The main characteristics are:

- Flat to gently undulating farmland, but landform rises up to the south-west to the edge of the West Tilbury Escarpment and falls gently or imperceptively to the East Tilbury Marshes around Princess Margaret Road and East Tilbury.

- A generally fairly open landscape, with limited tree cover, primarily due to the loss of hedgerow elm trees. Hedgerows where they have not been lost particularly occur along historic parallel running lanes and tracks. More localised small copses and areas of scrub are found around West Tilbury, Low Street, and east of Princess Margaret Road around Coalhouse battery. Typical species include hawthorn, elm, field maple and ash.
- Mostly large arable fields, but small-medium scale, historic rectilinear pattern of hedge rowed fields of horse grazed grassland occur in the south east of the area.
- Historic village of West Tilbury and its church to the south and the Linford/Buckingham Hill/Ridge to the north are focal points in some views.
- Cubist influenced buildings of the Bata Industrial Estate provide a dramatic contrast to the general flatness of the landscape.
- Views of the River Thames, and the adjoining marshland to the south are important from some parts of the area.
- Settlement is limited to a small number of dispersed farmhouses.
- Visual intrusion is caused by power lines, and locally by the Readmans (was Ready Metal/Mayer Parry) Industrial Estate, which also causes noise intrusion. The boundaries with East Tilbury and Chadwell are raw and abrupt in places. Heavy lorry traffic on some of the minor roads causes some noise intrusion.

D4: White Crofts/Orsett Heath Urban Fringe or Orsett/Saffron Gardens

3.2.27 This character area lies in the centre of the district comprising a broad plateau of slightly higher land, and adjacent slopes within the Thames Terraces. Its main characteristics are:

- Very gently rolling to relatively flat landform, with coarse loamy and sandy soils.
- Mixed farmland of rough grazed grassland and intensive arable. Remnant heathland and acid grassland is found at Mucking Heath associated with the Orsett golf course.
- Mostly large fields, with significant areas where the historic field pattern has been lost leaving fragmented hedgerow pattern, although thicker existing hedgerows are found in localised areas, for example to the south of Orsett.
- Generally, fairly open land with only a few small pockets of woodland/plantations land to the north of the A13 provides an underdeveloped context for long views out of the character area to the village of Horndon-on-the-Hill on its ridge, and beyond to the Langdon Hills.
- North to south running hedged historic lanes.
- Dispersed pattern of historic farmsteads.

- A central zone adjacent to the A13 is influenced by intrusive ribbon/suburban development of Southfields, gravel pits, small industrial works and service areas. The A13 causes visual, noise and light intrusion in parts.

3.2.28 Due to the nature of the proposed development and the context in which it is located, it is considered that there is not the potential for there to be significant impacts on the D4: Whitecrofts/Orsett Heath Urban Fringe LCA. This is not assessed further in this chapter.

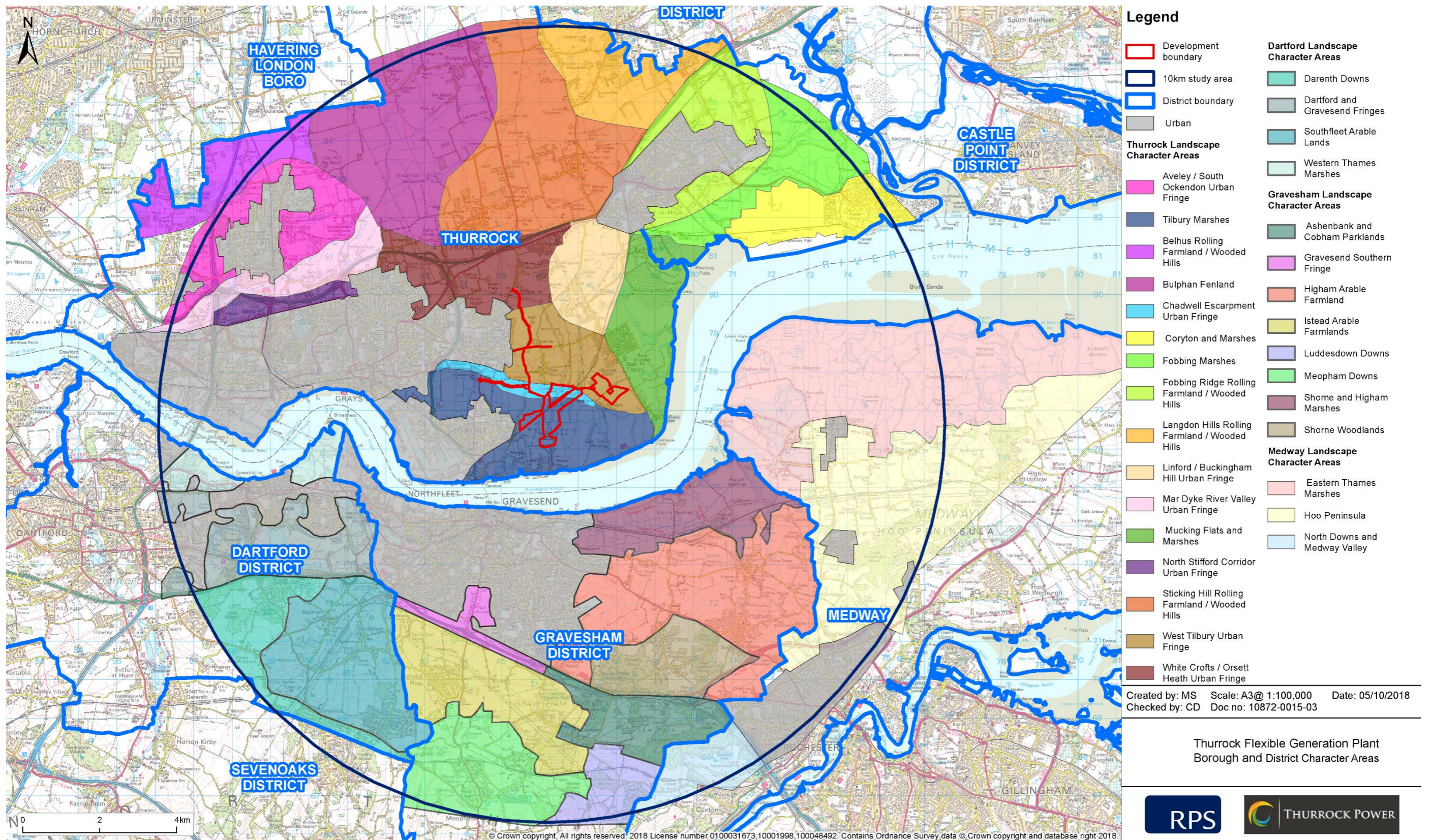


Figure 3.3: Borough and District Landscape Character Areas.

Essex Coast Landscape Character Assessment

3.2.29 The Essex Coast Landscape Character Assessment was prepared by Essex County Council in October 2005. It provides an overview from Thurrock, part of the Thames Gateway, in the south to Harwich and the Stour Estuary bordering the county of Suffolk.

3.2.30 Zones A, B, C, F, H (part) I and J lie within the Tilbury, Mucking and Fobbing Marshes LCA. Zones D, E and H (part) lie within the Chadwell and West Tilbury LCA.

Tilbury, Mucking and Fobbing Marshes

3.2.31 The description of this LCA is still to be completed and will be included at the ES stage.

Chadwell and West Tilbury

3.2.32 The key characteristics are:

- A low-lying ridge elevated above the Thameside Marshes to the south and, to the north, the historic cores of Stanford-le-Hope/Corringham/Fobbing on the edges of extensive 20th century development.
- The fieldscape of the area is dominated by large fields and regular fields partly resulting from 20th century boundary loss and partly reflecting the historic field pattern.
- The area contains a small number of farm elements of the historic dispersed settlement pattern now located on the outskirts of the settlement.
- The track network runs across the area linking between the inland areas and the marshes, which were once part of an integrated economic system.
- The area is largely devoid of settlement, with the exception of the rows of houses on the ridge to the east.
- The arable fields are generally regular and there appears to have been some 20th century boundary loss, resulting in some prairie fields.
- The dominant north west – south east alignment of the fields, common to this area of Essex, can still be traced in the landscape.
- Hedgerows are generally low with few trees.
- The hard, urban edges and the A13 intrude visually and acoustically into the area.
- Ridge of Thames terrace gravels, with panoramic views across the Thames. The ridge is broken by valleys and bounded to the north and south by marshland and to the east and west by settlement.
- The high ground reaches out to the Thames as a promontory between the marshes and at its tip is the historic Coalhouse Fort and dismantled battery.

- Modern uses include recreation, such as golf courses, gravel pits and disused working and nurseries.
- Historically the settlement pattern was, with the exception of small settlements sited on high knolls in the north, dispersed.
- This settlement pattern broadly survives, with the addition of some ribbon development and a settlement at East Tilbury created between the wars in the Czech modernist style to serve the Bata factory.
- The historic field pattern is complex, in the north the pattern is strongly rectilinear, roughly north west – south east, with considerable variation in field size. In the centre, fields were very large and less rectilinear, perhaps the result of early enclosure of heathland. In the south there is again a rectilinear pattern either side of and aligned on the possible Roman road to East Tilbury. Despite disruption through modern development, and some boundary loss these patterns survive.
- The fields are used for arable and pasture and horse grazing is common.
- This area of flat reclaimed land comprises the largely undeveloped section of Tilbury Marshes, between the ridge and the River Thames.
- The Tilbury Power Station dominates the visual landscape of the area and creates a dramatic contrast to the surrounding marshland.
- The fields are generally regular (straight bounded) and of a variety of sizes, historically grazing marsh now predominantly in arable use.
- The area also contains active and disused gravel workings.
- There is no settlement in this area.
- An area consisting of reclaimed land that has been subject to sand and gravel extraction, this has left an open and exposed landscape largely denuded of historic features.
- With rare exceptions such as surviving counter walls, and the relatively intact area of Stanford marsh, the historic landscape features have been removed, few fields survive, and a series of lakes and ponds mainly created by recent extraction remain.

3.3 Visual Baseline

Visual Resources

3.3.1 The Zone of Theoretical Visibility (ZTV) of the development on Zone A is illustrated on Figure 2.5. It is contained to the north-west by landform and settlements. To the west the ZTV extends over marshland and arable pasture. The town of Gravesend, on the south side of the Thames, screens views from further south and the Kent Downs AONB. Brummelhill Wood, in the very north of the Kent Downs AONB, also screens views from the south. Due to the low elevation of Zone A, the ridgeline to the north prevents views from lower-lying land beyond it.

3.3.2 For this PEIR chapter the visual baseline considers the visual effects of the Zone A in more detail than the other zones, which will be assessed more fully in the final ES.

Visual Receptors

3.3.3 At this PEIR stage some receptors have been grouped together. When the final layout of Zone A and the location of the other zones are finalised, and the potential significance of the effects warrants it, individual receptors will be identified and assessed separately. The locations of the representative viewpoint locations are illustrated on Figure 2.2.

Residential Receptors

3.3.4 Residential receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, including properties at Low Street, have varying views dependent on landform, orientation, intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the drained marshland, the industrial facilities and the River Thames into north Kent. Properties on the southern edges of Chadwell St. Mary have the most open, elevated views towards Zone A, with the upper floors of the three tower blocks, to the north of the town also having close views of the northern part of the construction access road/route, Zone H, as do other residents on the eastern edge of the town (Viewpoint C11, Figure 3.26). The properties at Low Street have limited views due to a lower elevation, orientation and vegetation.

3.3.5 To the east the views are less elevated and the residential areas set further back on the slope and away from Zone A. However, these residential areas and farms, such as Gravelpit Farm, Bowsters Farm, Goshem's Farm and Barvills Farm are closer to Zones D and E and the southern end of Zone H. The effect on views from some of these properties is not considered to have the potential to be significant and so not all are not considered further in this assessment.

3.3.6 The ribbon development of houses along the southern end of Princess Margaret Road are also closer to Zone E. However, the effect on residents within this group of properties is not considered to have the potential to be significant and so they are not considered further in this assessment. Similarly, the effect on residents within East Tilbury is not considered to have the potential to be significant.

3.3.7 There are few residential receptors on the drained marshland itself. Those properties and residential areas that have been built on lower lying land tend to be to the west of the DCO boundary. Residents whose properties lie on the eastern edge of Tilbury, close to Fort Road, have views across the flat farmland to the north of the railway. Views south, towards Zone A are filtered by the vegetation either side of the railway, but the electrical substation and the overhead power lines and towers are seen against the skyline, as are Tilbury Power Station and the Sertão (Viewpoint C10, Figure 3.26). Residents on the upper floors of the three tower blocks located in Tilbury, have panoramic views, including Zones A, B, C, F, H (part) I and J.

3.3.8 Individual properties along Biggin Lane have varying views dependent on landform, orientation, and vegetation cover close to the properties. Where vegetation and orientation allow, there are long views across the drained marshland, towards Zones A, B, C, F, H (part) and I, the industrial facilities and the River Thames into north Kent. In the foreground of these views lies Zone J, the location of the proposed haul road. The residents of Biggin Marsh Farm also have close views of Zone J and oblique views towards Zones A, B, C, F, H (part) and I. Further east along the farm track the residents of Gun Hill Farm have filtered close views of Zone J and filtered more distant views of Zones A, B, C, F, H (part) and I. The effects on some of these residential receptors do not have the potential to be significant and are not considered further in this assessment.

3.3.9 Residential areas within Gravesend have varying views dependent on landform, orientation, intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the River Thames to the industrial facilities on the northern bank and beyond to the low ridgeline. The residents of more elevated properties have longer views to Horndon-on-the Hill. The effects on the majority of these residential receptors do not have the potential to be significant and are not considered further in this assessment. However, those properties on the riverside, which include low-rise blocks of flats have been assessed.

Access Land and Public Open Space

- 3.3.10 There are several areas of Access Land, some of them Common Land on the flat drained marshland close to and including some of the zones. The general public can gain access to Walton Common (the proposed site of Zone A) (Viewpoint C1, Figure 3.23) via an unprotected-type crossing over the railway and along Access Land (Zone I). It was observed during the fieldwork that the crossing had not been used for some time, as it was overgrown and inaccessible.
- 3.3.11 Parsonage Common, which lies on the northern side of the crossing is also Access Land. This area is more accessible and can be accessed directly from Cooper Shaw Road. Parsonage Common links to more Access Land either side of Cooper Shaw Road, which in turn links to a ribbon of Access Land either side Gun Hill lane and Fort Road, which links to the east side of Tilbury, via a footpath on Galsworthy Road. There are views of Zone A from all of this Access Land, some clearer than others, depending on the vegetation on the road boundaries (Viewpoint 6, Figure 3.10).
- 3.3.12 There is a separate area of Access Land that lies either side of Fort Road to the south of the railway. This is currently used to graze horses. The views from this area of land towards Zone A are much more restricted, due to the scrub and woodland vegetation located between the sewage works and the cars storage area, west of Walton Common. Further screening is provided by woodland planting around a small substation immediately south of the railway. Due to the density of the screening of Zone A provided by the woodland and scrub vegetation and the intervening land uses and the distance from other zones, the effect on views from this location does not have the potential to be significant and so is considered no further in this assessment.
- 3.3.13 To the south of Chadwell St. Mary there is an area of public open space, accessed from Thames View. From the highest point of the Open Space, there are long views across the drained marshland and River Thames into north Kent. These views include views of Zones A, C, F, I and part of H (Viewpoint 3, Figure 3.9).

Public Rights of Way (PRoW)

- 3.3.14 The Thames Estuary Path/Two Forts Way (FP146) and part of National Cycle Route 13, runs west from Coalhouse Fort. Part of the route has a substantial hedgerow on its northern side and is relatively low-lying. In addition to the vegetation, there is land-raising being undertaken to the north of the path and also helps to screen views north from the path. Past Views towards Zone A are restricted from this section of the path. Viewpoint 16, Figure 3.15 is taken as the path rises up, past the area of land-raising and Viewpoint 15, Figure 3.15 is the view from the path further to the west. The hedgerow has been removed from this section of the path and the views are wide and open, incorporating the north Kent side of the estuary, Gravesend, The Sertão, Tilbury Power Station, the sewage treatment works, Tilbury Substation, the cranes and turbines of Tilbury docks, as well as close views of the large vessels using the River Thames. Views extend to the low ridgeline to the north.
- 3.3.15 Around Tilbury Fort – Byway 98 and FP193 pass to the south of Tilbury Fort on an elevated walkway. Views towards Zone A are restricted by the landform of the fort, but to the west (Viewpoint 13, Figure 3.14) and to the east (Viewpoint 14, Figure 3.14) the views are more open. The views towards Zone A are partly interrupted by the woodland vegetation around the sewage treatment works, with the overhead power lines and towers seen above the trees.
- 3.3.16 At Tilbury Fort Creek the byway and FP193 meet FP146. This latter footpath runs north around the moats and mounds associated with the defensive fortifications. This area is grazed by horses. It runs on an embankment to the south of the access road to the sewage treatment works. The roadside is subject to fly-tipping and the condition of the path is poor (Viewpoint 12, Figure 3.13). Views towards Zone A are similar to those from the elevated walkway. Although closer, the views are more restricted, due to the presence of a high earth bund and fence/wall, as well as the vegetation. Only the upper parts of some of the overhead lines and towers are visible.
- 3.3.17 As with other receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, those footpaths located on the ridgeline have varying views dependent on landform, orientation, intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the drained marshland, industrial facilities and the River Thames into north Kent. People using the PRoW in this location have the potential to see part of some of Zones A, C, F, I and H. Examples of views from footpaths, are FP 72 (Viewpoint 4, Figure 3.9) and FP 67, (Viewpoint 5, Figure 3.10).

- 3.3.18 Not all of the views from the PRoW on the ridgeline are wide, or close. Views from many footpaths are restricted by vegetation, the mapped route of FP 200 is particularly overgrown and impassable in places (Viewpoint 10, Figure 3.12). A few footpaths are blocked, or ploughed up, such as FP 60 (Viewpoint 2, Figure 3.8). The effects on views from some of these footpaths are not considered to have the potential to be significant and so not all are considered further in this assessment.
- 3.3.19 The only footpath that currently runs along the same alignment as any of the zones, is FP 78, which runs along the same alignment as the proposed construction access road to the north-east of Chadwell St. Mary. However, there is no need to close this PRoW, it would simply be routed on a parallel alignment.
- 3.3.20 Views from the Saxon Shore Way and the Hoo Peninsular are long and wide. Viewpoint 27, Figure 3.21, illustrates the view from the track north of Cliffe Fort, where the views towards Zone A are partly screened by the vegetation and earthworks around Coalhouse Fort, with only some of the towers carrying the overhead power line visible. As the potential effects on views from this part of the Hoo Peninsular are considered not to be significant they are not considered further in this assessment.
- 3.3.21 Similar views are gained from Cliffe Fort (Viewpoint 26, Figure 3.20) and further west along the Saxon Shore Way at its junction with Footpath NS138 (Viewpoint 25, Figure 3.20) and at Shornmead Fort (Viewpoint 24, Figure 3.19). While it is considered that the potential effect on views from this part of the Saxon Shore Way is not considered to be significant, Gravesham Borough Council has requested assessments of the views from Cliffe Fort and Shornmead Fort so this has been undertaken.
- 3.3.22 Further west towards Gravesend the Saxon Shore Way passes to the north of the industrial estates to the east of the town. The views along this stretch of the promoted path are closer to Zone A. However, they are different in nature, the industrial facilities and activity to the north, and south of the river, being much more apparent and forming a larger part of the views (Viewpoint 23, Figure 3.19).
- 3.3.23 Footpaths NS170 and NS355 join a minor road north of Brummelhill Wood, on the northern edge of the Kent Downs AONB, to the west of Shorne (Viewpoint 29, Figure 3.22).
- Tourist Attractions and Recreation (other than PRoW)
- 3.3.24 People can access Tilbury Fort via a car park to the south of The World's End public house, off Fort Road. The car park and the public house are located to the south-west of the fort and do not have views of any of the zones. As such, the effect on views from this location is not considered to have the potential to be significant and so are not considered further in this assessment.
- 3.3.25 Tilbury Fort is open to the public five days a week. At ground level there are limited views north-east towards the zones, primarily due to the configuration of the fort itself. From the north eastern side there are more open views, but these are partly screened by the other infrastructure, such as, the sewage treatment works and the woodland planting associated with the works.
- 3.3.26 Coalhouse Fort, lies to the west of Zone A. From the fort itself views towards Zone A are restricted by vegetation in and around the fort buildings and earthworks (Viewpoint 17, Figure 3.16). However, views are possible from the southern end of Princess Margaret Road and from the car park to the west of the fort. Views are also possible from the path that follows the outer edge of the moat of the fort and links to the Thames Estuary Path/Two Forts Path at Coalhouse Point, e.g. from the World War II defensive structures. The views from Coalhouse Point itself are partly restricted by the hedgerow vegetation lining the northern side of the promoted path. Photography from these locations will be presented in the final ES.
- 3.3.27 As with other receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, those tourist attractions and recreation facilities (other than PRoWs) located on the ridgeline have varying views dependent on orientation and intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the drained marshland and River Thames into north Kent. These views include views of Zones A, C, F, I and part of H. Condozers Scout Activity Centre, south of Church Road to the south-west of West Tilbury.
- 3.3.28 There are views south-west, towards Zone A from the publicly accessible route of the Essex Wildlife Trust Visitor Centre at the Thameside Nature Park, Mucking Marshes, across the broad curve of the nature reserve (Viewpoint 1, Figure 3.8).

- 3.3.29 In north Kent, on the southern side of the Thames Estuary there are a series of forts constructed to defend the Thames. Within the study area these include Cliffe Fort, Shornmead Fort and, in Gravesend, New Tavern Fort. Cliffe Fort and Shornmead Fort are located on the undeveloped section of the Saxon Shore Way to the east of Gravesend (Viewpoint 26, Figure 3.20 and Viewpoint 24, Figure 3.19). The views are open and wide, across the Thames Estuary and the drained marshland (including Zone A) to the cranes and turbines around Tilbury Docks.
- 3.3.30 Cliffe Pools RSPB reserve lies inland to the east of Cliffe Fort, on flooded gravel extraction pits. The views along most of the paths and the car park for Cliffe Pools prevent open views towards Zone A. Brett Aggregates gravel extraction facility and the piles of extracted material at Cliffe Fort prevent open views from the majority of this location, as such the potential effect on views available to these receptors, from this location, is not considered to be significant. Therefore, people visiting the RSPB reserve are not considered further in this assessment.
- 3.3.31 Shorne Marshes Nature Reserve (NR) is situated to the south of Cliffe Fort, on the banks of the River Thames, south of Cliffe Fort. Viewpoint 25, Figure 3.20 illustrates the view from the Saxon Shore Way adjacent to Shorne Marshes NR. Due to distance it is unlikely that receptors at this location would experience significant effects, so the impacts on this receptor are not considered further.
- 3.3.32 Gravesend Waterfront is an area to the south-south-east of Zone A, in north Kent. It includes Gordon Recreation Ground and gardens, which link to the waterfront and includes New Tavern Fort (Viewpoint 20, Figure 3.17). The waterfront has a café and equipped play area, as well as housing Gravesend rowing and sailing clubs. The views across the River Thames towards the site from Gordon Promenade (Viewpoint 21, Figure 3.18) are wide and the overhead lines and towers of Tilbury Substation are seen between the sewage treatment works and Tilbury Power Station/the Sertão drill ship. The Chadwell St. Mary - West Tilbury - East Tilbury ridge can be seen in the distance.
- 3.3.33 Windmill Gardens and play area are located on Windmill Hill, a high point in Gravesend. There are views from the gate to the play area towards Zone A. However, the most open views are from a seat adjacent to the beacon (Viewpoint 22, Figure 3.18). The view is wide, from Tilbury Docks to Coalhouse Point, with trees interrupting part of the view. In the direction of Zone A, the long views terminate at Horndon-on-the-Hill. Zone A is barely visible between the overhead power lines and towers associated with Tilbury Substation.
- 3.3.34 Kent Downs AONB (see paragraph XX for dynamic receptors and paragraph XX for people using PRoW).

Community Facilities

- 3.3.35 As with other receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, those community facilities located on the ridgeline have varying views dependent on orientation, intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the drained marshland and River Thames into north Kent. These views include views of Zones A, C, F, I and part of H. Such receptors include people using West Tilbury village hall and those visiting St James' churchyard, West Tilbury (Viewpoint 7, Figure 3.11).
- 3.3.36 At the eastern end of the ridgeline on slightly lower land allotment holders at the Allotments on Station Road, East Tilbury have views, filtered by a mature hedgerow, into the fields containing Zones D and E. Based on the proposals for these two areas, the potential effect on views available to these receptors, from this location, is not considered to be significant. Therefore, this receptor group is not considered further in this assessment.
- 3.3.37 The entrance to The Gateway Academy, to the south of Chadwell St. Mary is opposite the junction of Zone J with the A126 people exiting the school and possibly within some of the school grounds have views of this Development Zone.
- 3.3.38 Pupils, staff and visitors to the Tilbury Pioneer Academy, as well as allotment holders within the allotment gardens located off Feenan Highway, to the north-east of Tilbury, have views towards Zone J.

Commercial and Industrial Facilities

- 3.3.39 People working at Readman's Industrial Estate, to the north of Gravelpit Farm and those working at the Thames Industrial Park, East Tilbury have potential views into Zone D. Based on the proposed activity for this area, the potential effect on views available to these receptors, from these locations, are not considered to be significant. Therefore, these receptor groups are not considered further in this assessment.
- 3.3.40 People working at Tilbury Sewage Treatment Works and those working at the car storage areas, to the west of Zone A, have potential views into Zone A, although highly restricted by intervening vegetation. Based on the activity of the receptors the potential effect on available views, at these locations, are not considered to be significant. Therefore, these receptor groups are not considered further in this assessment.

3.3.41 People working at National Grid's 400kV Tilbury Substation (Zone B) have close views into and across Zone A to the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, albeit from the context of an electrical substation.

3.3.42 People working on the decommissioning of Tilbury Power Station have restricted views of Zone A, through Tilbury Substation, to the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline. Based on the activity of these receptors the potential effect on available views, at these locations, are not considered to be significant. Therefore, this receptor group is not considered further in this assessment.

Dynamic Receptors

3.3.43 As with other receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, those roads located on the ridgeline have varying views dependent on orientation, intervening buildings and vegetation cover close to the receptors. Where vegetation and orientation allow, there are long views across the drained marshland and River Thames into north Kent. These views include views of Zones A, C, F, I and part of H. People using the roads on the flat farmland to the north of the railway line, such as Fort Road, Gun Hill lane and Cooper Shaw Road have open views of zones A, C, F, I and parts of H (Viewpoint 6, Figure 3.10). The potential effect of the Thurrock Flexible Generation Plant facility on people using other roads is not considered to be significant and so these are not assessed further.

3.3.44 The views of crew and passengers of vessels on the River Thames, such as the Gravesend to Tilbury Passenger Ferry, the Tilbury to Göteborg Ferry, people using the London International Cruise Ferry Terminal as well as commercial vessels, will vary considerably according to the tides and weather. The larger commercial vessels, ferries and cruise ships will have more elevated views and even on a low tide, will have views from upper decks, the bridge across the drained marshland. As with the views from the Saxon Shore Way, the context is more rural and the views more open in the east, and more urban/industrial and the views tending to be more enclosed/shorter towards Gravesend and Tilbury. At low tide, people on smaller vessels, such as the Gravesend to Tilbury ferry have more limited views of the flat land on the northern side of the river. Many of these receptors will not experience a significant effect and so have not been considered further in this assessment.

3.3.45 The section of the railway that runs between Tilbury and East Tilbury, crosses the drained marshland on a slightly higher level than the surrounding land (Viewpoint 11, Figure 3.13). The boundary of the railway land is marked by palisade fencing or concrete post and chain-link fencing. Scrub and small trees have grown up within and around these fence lines. Consequently, the views south and north on the middle section of the route are filtered by vegetation. Views towards Zone A from the western section of railway are screened by scrub and woodland located to the south of the railway. The available views for passengers travelling west on the eastern section of track are constrained by vegetation through Low Street. At the level crossing on Church Road, views south, towards Zone A begin to open up. At this point Zone C lies immediately adjacent to the railway line (Viewpoint 8, Figure 3.11). However, all views are filtered by the trackside vegetation and all will be fleeting glimpses.

Representative Viewpoints

3.3.46 Photographs have been taken from various viewpoints which are representative of views towards Zone A, from a variety of locations and receptors. Other viewpoints were investigated. However, only those with the potential to have a significant effect, or that were requested by Thurrock Borough Council, Gravesham Borough Council or by Essex County Council have been included (Figure 2.2).

3.3.47 These are summer photographs only. Winter photographs will be presented and assessed in the final ES.

Viewpoint 1: View south-west from the roof of the Essex Wildlife Trust Visitor Centre (Figure 3.8)

3.3.48 Viewpoint 1 is an elevated view, 4.82 km from the closest part of Zone A. The views from the roof top are panoramic. The view towards Zone A, is across the East Tilbury Marshes. Tilbury Power Station can be seen in the distance, as can the tops of some of the pylons around Tilbury Power Station. There is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

Viewpoint 2: View south-west from the junction of Muckingford Road and Footpath 60 (Figure 3.8)

3.3.49 Viewpoint 2 is a viewpoint from the junction of the ploughed-up FP 60 with the Muckingford Road. Due to the broad dome-shaped landform and the tree cover in the far boundary of this field there are only views of the tops of the pylons and overhead lines at Zone A. There is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

Viewpoint 3: View south-east from public open space to the south of Chadwell St. Mary (Figure 3.9)

3.3.50 Viewpoint 3 lies 2.05 km from the closest point on Zone A. This is a wide, open, elevated view, experienced by both residents and users of the Public Open Space. There are clear views from this part of the ridgeline across the flat farmland to the high land in north Kent.

Viewpoint 4: View south-south-east from junction of Footpath 72 and Turnpike Lane, at Gun Hill (Figure 3.9)

3.3.51 Viewpoint 4 lies 1.08 km from the closest point of Zone A. The views to Zone A are oblique and substantially screened by vegetation on the field boundary and by the land form. There is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

Viewpoint 5: View south-south-west from Footpath 67, near the junction with Low Street Lane (Figure 3.10)

3.3.52 Viewpoint 5 lies 0.91 km from the closest point to Application Zone A. It is an open view across a gently domed field. The vegetation at the far side of the field screens the flat farmland. Despite the proximity, it is considered that there is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

Viewpoint 6: View south from the junction of Gun Hill lane, Cooper Shaw Road and Fort Road (Figure 3.10)

3.3.53 Viewpoint 6 is situated 0.68 km from the closest point of Zone A. It is located adjacent to part of Zone H, the construction access route. The views south towards Zone A are open, across the flat farmland. The line of the railway is visible as it is marked by the trackside vegetation. The views are long, through the pylons and overhead power lines to north Kent.

Viewpoint 7: View south from the graveyard of St. James' Church, West Tilbury (Figure 3.11)

3.3.54 The viewpoint within the churchyard of St. James' Church, West Tilbury lies 0.57 km from Zone A. The view is elevated, with long views over the drained marshland. The high land of north Kent can be seen through the pylons and overhead lines connecting to Tilbury Power Station. Wide views are interrupted by the vegetation within the churchyard.

Viewpoint 8: View south-west from junction of Station Road and farm track to the south of the railway line (Figure 3.11)

3.3.55 Viewpoint 8 lies 0.47 km from Zone A, but is located on the eastern edge of Zone C, immediately to the south of the level crossing on Station Road.

Viewpoint 9: View east-south-east from Fort Road to the east of Tilbury (Figure 3.12)

3.3.56 Viewpoint 9 is located 0.7 km from Zone A. Clear views to Zone A are interrupted by the line of the railway. However, the pylons and overhead lines that cross the zones are clearly visible as is Tilbury Substation. Also seen in this view is Zone F, that is located in the field immediately to the fore of the railway.

Viewpoint 10: View south-west from Footpath 200, near Buckland House (Figure 3.12)

3.3.57 Viewpoint 10 is one of the few locations on FP 200 that views of the drained farmland around Zone A is seen. It lies 0.68 km from Zone A. The footpath is very overgrown and impassable in places. Views towards Zone A are partly or completely screened. Despite the proximity, it is considered that there is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

Viewpoint 11: View east from Fort Road bridge over railway (Figure 3.13)

3.3.58 This elevated viewpoint lies 0.85 km from Zone A. Zone F1 lies to the north of the railway, with Zones I and F2 beyond. The elevation allows views over the woodland to the flat farmland to the south. The pylons and overhead lines cross the landscape to Tilbury Power Station, a small substation is seen in the foreground.

Viewpoint 12: View north-east from Footpath 146, adjacent to the sewage works (Figure 3.13)

3.3.59 FP 146 follows the northern boundary of the Tilbury Fort earthworks. It is in a poor state of repair and this section is particularly badly affected by fly-tipping. Viewpoint 12 is 1.3 km from Zone A. The sewage treatment works dominates the view, as does the high bund and wall that prevent all but the views of the highest structure in the more distant landscape. Despite the proximity, it is considered that there is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

[Viewpoint 13: View north-east from Byway 98 to the south of Tilbury Fort \(Figure 3.14\)](#)

3.3.60 Viewpoint 13 lies 1.94 km from Zone A. It is a view from the walkway to the south of Tilbury Fort. Wide views are available from this location and the views of Zone A are a small part of these wide view, that encompass Tilbury Fort, the river Thames, as well as the industrial development to the east and north-east of this viewpoint. It is considered that there is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

[Viewpoint 14: View north-east from Byway 98, to the south of Tilbury Fort \(Figure 3.14\)](#)

3.3.61 Viewpoint 14 is further east on the same walkway and is 1.65 km from Zone A. The change in the angle of the view has opened up views and more of the pylons around Tilbury Substation area visible. Wide views are also available from this location, but due to the proximity of Tilbury Power Station, the sewage treatment works and the pylons, the context of the view in this direction is much more industrial/built up,

[Viewpoint 15: View north-north-west from the Thames Estuary Path/Two Forts Way \(Figure 3.15\)](#)

3.3.62 Viewpoint 15, is located 1.27 km from development Zone Zone A. It is the closest of the two viewpoints on this section of the path and is located roughly on the same level as Zone A. The expansive views include views along the River Thames in both directions and through the pylons to the low ridgeline. Tilbury Power Station, the sewage treatment works and Tilbury Substation are clearly visible.

[Viewpoint 16: View north-west from the Thames Estuary Path/Two Forts Way \(Figure 3.15\)](#)

3.3.63 This viewpoint illustrates the view from the path from further to the east, 1.59 km from Zone A. This viewpoint provides more context than Viewpoint 15 and also illustrates the rising intervening land that interrupts views further to the east. As it is similar to Viewpoint 15, it has not been chosen as the representative viewpoint for people using this path.

[Viewpoint 17: View west from the defensive waterbodies at Coalhouse Fort \(Figure 3.16\)](#)

3.3.64 From the fort itself views towards Zone A are restricted by vegetation in and around the fort buildings and earthworks. This viewpoint is from the 'dam' between the two waterbodies, 2.61 km from Zone A. However, views are possible from the southern end of Princess Margaret Road and from the car park to the west of the fort. Views are also possible from the path that follows the outer edge of the moat of the fort and links to the Thames Estuary Path/Two Forts Path at Coalhouse Point, e.g. from the World War II defensive structures. Photography from these locations will be presented in the final ES, and the effects on receptors assessed. For this reason, the assessment of this viewpoint has not been taken forward in the PEIR, as it is not representative of the most open views towards Zone A.

[Viewpoint 18: View north-east from raised seating area, to the west of Town Pier, Gravesend \(Figure 3.16\)](#)

3.3.65 This viewpoint is from a small, elevated seating area to the west of Town Pier, Gravesend. The distance to Zone A is 2.61 km and as the viewpoint is raised there are views across the flat farmland to the low ridgeline beyond. Due to its location there are also views to the highland to the north-east of Chadwell St. Mary. However, it is considered that there is no potential for significant effects being experienced by receptors at this location and the effects on this view are not considered further.

[Viewpoint 19: View north-east from the access ramp to the Gravesend to Tilbury Ferry at Town Pier, Gravesend \(Figure 3.17\)](#)

3.3.66 Viewpoint 19 is located 2.52 km from Zone A, on the access ramp to the Gravesend to Tilbury Ferry, on Town Pier. Due to distance and the intervening industrial infrastructure and vegetation, the potential effects are not likely to be significant, however, the effects have been explored further.

[Viewpoint 20: View north-north-east from New Tavern Fort, Gravesend \(Figure 3.17\)](#)

3.3.67 Viewpoint 20 is taken from a World War II gun emplacement, located on the earthworks of New Tavern Fort, immediately adjacent to Gravesend Rowing Club. Due to distance (2.49 km from Zone A) and the intervening industrial infrastructure and vegetation, the potential effects are not considered to be significant and they are not considered further.

[Viewpoint 21: View north-north-east from Gordon Promenade, Gravesend \(Figure 3.18\)](#)

- 3.3.68 Viewpoint 21 is taken from the waterfront on Gordon Promenade, at the top of a small set of steps down onto the shingle beach. Due to distance (2.48 km from Zone A) and the intervening industrial infrastructure and vegetation, the potential effects are not considered to be significant and they are not considered further.

[Viewpoint 22: View north-north-east from the beacon on Windmill Hill, Gravesend \(Figure 3.18\)](#)

- 3.3.69 This viewpoint is located 3.61 km from Zone A. Due to the elevation of this viewpoint, the view is long, albeit restricted by surrounding trees within Windmill Gardens, and extends out across the drained farmland, the low ridgeline, to Horndon-on-the-Hill beyond. Zone A is seen in the context of the industrial facilities that lie to the west and south of it.

[Viewpoint 23: View north-north-west from the Saxon Shore Way, to the north of the police training centre, north Kent \(Figure 3.19\)](#)

- 3.3.70 Viewpoint 23 lies 2.57 km from Zone A. From this part of the Saxon Shore Way, Tilbury Power Station and Tilbury Substation and the pylons that surround them form the skyline, with the low ridgeline barely visible behind them.

[Viewpoint 24: View north-west from the Saxon Shore Way at the junction with Footpath NS318 at Shornmead Fort, north Kent \(Figure 3.19\)](#)

- 3.3.71 Shornmead Fort is located on an undeveloped section of the Saxon Shore Way to the east of Gravesend, 3.78 km from Zone A. The views are open and wide, across the Thames Estuary and the drained marshland to the cranes and turbines around Tilbury Docks.

[Viewpoint 25: View north-north-west from the junction of the Saxon Shore Way and Footpath NS138, north Kent \(Figure 3.20\)](#)

- 3.3.72 This viewpoint is to the east of Shornmead Fort, 4.65 km from Zone A. There are wide, open views along the Thames Estuary. Although Tilbury Power Station can be seen clearly close to the river, from this angle and distance the pylons, cranes and infrastructure around Tilbury Docks, as well as the Tilbury Substation infrastructure are seen as part of the landscape rather than separate from it. Due to the distance from Zone A the effect of the proposed development of views from this location is not considered to be significant and this viewpoint is not considered further in this assessment.

[Viewpoint 26: View west-south-west from the Saxon Shore Way at Cliffe Fort, north Kent \(Figure 3.20\)](#)

- 3.3.73 The viewpoint at Cliffe Fort is on a section of the Saxon Shore Way that is very overgrown. The Fort itself is also the location for a sand and gravel extraction facility, and many of the views in this location are dominated by the machinery and heaps of gravel. As in Viewpoint 25, Tilbury Power station stands out on the edge of the waterside., with the lattice structures of the cranes, wind turbines and pylons allowing views to permeate through. Due to the distance from Zone A the effects of the proposed development of views from this location is not considered to be significant and this viewpoint is not considered further in this assessment.

[Viewpoint 27: View west-south-west from the junction of the Mead Wall track with the path around the Hoo Peninsular, north Kent \(Figure 3.21\)](#)

- 3.3.74 Zone A is located 4.52 km from this viewpoint. The vegetation around Coalhouse Fort screens views to Tilbury substation, but Tilbury Power Station is clearly visible. The area of low-lying land between Coalhouse Fort and the ribbon development on Princess Margaret Road, is sparsely vegetated and allows views through to the line of pylons running north from the substation. However, due to the distance from Zone A the effect of the proposed development of views from this location is not considered to be significant and this viewpoint is not considered further in this assessment.

[Viewpoint 28: View north-north-west from Footpath NG7, to the south of Chalk, north Kent \(Figure 3.21\)](#)

- 3.3.75 This elevated view is located 4.27 km from Zone A. The view is expansive, Horndon-on-the-Hill can be seen in the distance. The only development to break the skyline is the top part of Tilbury Power Station and the drill ship The Sertão. Due to the distance from Zone A the effect of the proposed development of views from this location is not considered to be significant and this viewpoint is not considered further in this assessment.

[Viewpoint 29: View north-north-west from minor road to the north of Brummelhill Wood on the northern edge of the Kent Downs AONB, north Kent \(Figure 3.22\)](#)

- 3.3.76 The viewpoint on the edge of the Kent Downs AONB is from an even higher location than Viewpoint 28 and more distant (5.88 km from Zone A). Although Tilbury Power Station is identifiable, only the top of the drill rig on The Sertão breaks the skyline. Due to the distance from Zone A the effect of the proposed development of views from this location is not considered to be significant and this viewpoint is not considered further in this assessment.

Night Time Visual Resources

- 3.3.77 Work on baseline night time resources is on-going and this will be reported on in the final ES.

3.4 Future baseline

- 3.4.1 The future baseline has been taken as a stage at which the demolition of Tilbury B Power Station has been completed (as it is currently underway) but none of the NSIPs have been built. The land between the existing jetty (to be retained) on the River Thames and Tilbury Substation contains no built development.

4. Assessment of Effects

4.1 Construction phase

4.1.1 This section refers to the temporary and often intermittent impacts of the construction works associated with the Thurrock Flexible Generation Plant development, as outlined in Table 2.6 and in Volume 2, Chapter 2: Project Description.

Landscape Effects

National Landscape Character Areas

4.1.2 NCA 81: Thames Estuary will be directly affected by the proposed development of Thurrock Flexible Generation Plant Zones A and E (the two above ground installations of the proposed facility). The Thames Estuary is considered to have a **medium** sensitivity to the construction of the proposed development. This part of the NCA is characterised by industrial development, including power infrastructure and the extractive industry. The impact of the construction on this large character area is **small** and the effects on the NCA is considered to be **minor** adverse, which is not significant.

Thurrock Landscape Character Areas

4.1.3 LCA C5: Tilbury Marshes, will be directly affected by the construction phase of the proposed development within Development Zones Zones A, B, C, F, H (part) I and J. The sensitivity of the LCA to the proposed construction works is considered to be **medium**. Impact of the construction works in this area is also considered to be **small**. The effect experienced by the LCA will be **moderate** adverse, which is not significant.

4.1.4 LCA D6: Chadwell Escarpment Urban Fringe will be directly affected by the construction works proposed phase of the proposed development of Zone H (part). It is also indirectly affected by the construction works within the adjacent Tilbury Marshes LCA. The sensitivity of the LCA to the proposed construction works is considered to be **medium**. The impact of the proposed construction works is considered to be **small**. The effect experienced by the LCA will be **minor** adverse, which is not significant.

4.1.5 LCA D7: West Tilbury Urban Fringe, will be directly affected by the construction works proposed for Development Zones Zones D, E and part of H. The sensitivity of this LCA to the proposed construction works in these zones is **medium**. The impact magnitude of the proposed works is considered to be **medium**. The effect experienced by the LCA is considered to be **moderate** adverse, which is not significant.

Essex Coast Landscape Character Areas

4.1.6 The assessment of the effects on these character areas is to be completed in final ES following further research.

Night Time Construction Landscape Effects

4.1.7 The proposed construction lighting is described in Table 2.6: Maximum design envelope parameters assessed, of this chapter. The construction operations will not require permanent lighting.

4.1.8 Assessment work is on-going and this will be reported on in the final ES

Visual Effects

4.1.9 Unlike landscape resources and receptors, all visual resources and receptors are directly affected.

Visual Receptors

Residential Receptors

4.1.10 Residential receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, including properties at Low Street, have varying views. These are **high** sensitivity receptors who will experience impacts ranging from **no change to small**. The effects experienced by these receptors are considered to range from **none to moderate** adverse, which are not significant effects.

4.1.11 Residents of properties along Biggin Lane and the farm track to Gun Hill lane are **high** sensitivity receptors that will experience **negligible to small** impacts during the construction phase. The effects experienced by the receptors range from **minor to moderate** adverse, which are not significant effects.

4.1.12 Residents on the eastern edge of Tilbury are of a **high** sensitivity. The impacts of the construction works on these receptors will vary from **no change to small**. The effects experienced by people living in these properties will vary from **none to moderate** adverse, which are not significant.

4.1.13 Residents between Low Street and East Tilbury, including individual farms, have a **high** sensitivity, to the proposed construction works. The impacts will vary from **no change to negligible**, depending on location. The effects will vary from **none to minor** adverse, which are not significant.

4.1.14 Those residents in properties that line the waterfront at Gravesend are **high** sensitivity receptors, that due to the elevation of some of the flats may have views of Zone A. However, the impact of the proposed construction works will be **negligible to small**, for those that have views. The effects will vary from **minor to moderate** adverse, which are not significant.

Access Land and Public Open Space

4.1.15 Walton Common and Access Land to the south of the railway will be directly impacted. Users of these areas will no longer be able to gain access. However, the replacement Common Land and Access Land in Zone F1 will be available to the public, before construction commences, and is more readily accessible than Walton Common. These **high** sensitivity receptors will experience a **negligible** impact. This will result in a **minor** adverse effect, which is not significant. People using Parsonage Common will be similarly affected during the construction phase.

4.1.16 Areas of Access Land either side of Gun Hill lane, Cooper Shaw Road and Fort Road will remain open for the duration of the construction works, but the **high** sensitivity receptors walking on these areas will experience **small to medium** impacts. The effects experienced by these receptors will be **moderate to major** adverse, which are not significant to significant.

4.1.17 People using the Public Open Space off Thames View, Chadwell St. Mary have a **high** sensitivity. The magnitude of the impact the construction works will have on these receptors is **small**. The effect experienced by these receptors will be **moderate** adverse, which is not significant.

Public Rights of Way

4.1.18 The footpaths around Tilbury Fort are used by **high** sensitivity receptors, due to location, orientation and the presence of buildings, bunds, walls and vegetation, the impacts are considered to be **negligible to small**. The effects experienced by users of these PRow varies from **minor to moderate** adverse, which are not significant.

4.1.19 The views experienced by people using the Thames Estuary Path/Two Forts Way/FP146 to the east of Tilbury Power Station vary depending on distance, for the majority of the path, the location in relation to the land-raising operation, the vegetation and the low elevation results in **no change to negligible** impacts for these **high** sensitivity receptors. The effect on people using this part of the path will vary from **none to minor**, which are not significant.

4.1.20 For a short section of the path, on or beyond the land raising operations to the screening of Zone A by the buildings of Tilbury substation and the concatenation of wires and pylons, there are slightly elevated views, with no vegetation across open farmland to the proposed development in Zone A, However, the construction works would be seen against a backdrop of the small ridgeline, away from the path. The **high** sensitivity receptors will experience a **small** impact. The effect would be **moderate** adverse for the duration of the construction of the facility, which is not significant.

4.1.21 Views gained from footpaths on the Chadwell to east Tilbury ridge vary considerably. Of those footpaths that are still open and that have not been ploughed up or are not impassable, the **high** sensitivity receptors will experience a range of impacts, that vary in impact from **no change to small**. The effects experienced by the users of the PRow in this area are considered to be **none to moderate** adverse, which are not significant.

4.1.22 Users of the Saxon Shore Way are **high** sensitivity receptors that will experience a variety of impacts and impact magnitude. As the views are generally open the degree of impact generally related to distance from Zone A. The more distant viewpoints will experience **negligible** impact. Those that are closer will experience **small** magnitudes of impact. The effects range from **minor to moderate** adverse, which are not significant.

Tourist Attractions and Recreation (other than PRow)

4.1.23 People visiting Tilbury Fort are **high** sensitivity receptors that would experience **no change to a small** impact, due to the configuration of the fort and the distance from Zone A. The effects would range from **none to moderate**, which are not significant.

4.1.24 People visiting Coalhouse Fort are **high** sensitivity receptors that would experience **no change to a small** impact, due to the vegetation surrounding the fort and the distance from Zone A. The effects would range from **none to moderate** adverse, which are not significant.

4.1.25 Shornmead Fort and New Tavern Fort. People visiting Shornmead Fort on the Saxon Shore Way and New Tavern Fort are **high** sensitivity receptors. The impact magnitude varies from **negligible to small** (at New Tavern). The effects range from **minor to moderate** adverse, which are not significant.

4.1.26 The **high and medium** sensitivity users of Gravesend Waterfront and Gordon Gardens will experience impact magnitudes between **no change and small**, dependent on location and activity. The effects are considered to range from **none to moderate** adverse, which are not significant.

Community Facilities

4.1.27 The effects of **high** sensitivity receptors visiting St. James' Church graveyard, will experience a **medium** impact, due to the wide elevated views over the drained marshland. The effects would be a **moderate to major** adverse effect, which is significant.

4.1.28 The two academies and the allotments on the southern edge of Chadwell St. Mary and the northern edge of Tilbury are **medium** sensitivity receptors, that have close to mid-range views of the proposed haul road (Zone J). The magnitude of impact is considered to be **negligible to medium**, with resulting effects of **minor to moderate, adverse** which are not significant.

Dynamic Receptors

4.1.29 Rail users have a variety of sensitivities, depending on the reason for their travel, it might be **low** for people travelling to work, or **high** for people travelling for pleasure. The impact would depend on the orientation of the passenger and the speed at which they are travelling. The overall impact of the proposed construction works is considered to be **small**. The effects on rail users is considered to be **minor to moderate** adverse, which are not significant.

4.1.30 Crew and passengers on marine vessels also have a variety of sensitivities depending on their occupations. People working on boats are considered to have a **low** sensitivity to the proposed construction works, whereas people travelling for pleasure will have a **high** sensitivity to the proposed works. The impact on these people will also vary depending on number of factors, including their proximity, orientation and elevation to the proposed construction works. Given the distance of Zone A to the river, the impact is considered to be **small to negligible**. The effects on people on vessels on the river is considered to be **negligible to moderate** adverse, which are not significant.

Representative Viewpoints

Viewpoint 3: View south-east from public open space to the south of Chadwell St. Mary

4.1.31 The people using the Public Open Spaces are considered to have a **high** sensitivity, to the proposed construction works. The magnitude of impact on views will be **small**. The effect experienced by these receptors will be **moderate adverse** which is not significant.

Viewpoint 6: View south from the junction of Gun Hill lane, Cooper Shaw Road and Fort Road

4.1.32 Road users will have a **low** sensitivity to the proposed construction works. The impact magnitude will be **small**. The effect on people travelling along these roads is considered to be **minor** adverse, which is not significant.

4.1.33 People using the Access Land on either side of the roads, will have a **high** sensitivity to the construction work and traffic. The impact magnitude will be **small to medium**. The effect experienced by these pedestrian users will be **moderate to major** adverse, which are not significant, to significant.

Viewpoint 7: View south from the graveyard of St. James' Church, West Tilbury

4.1.34 People visiting the graveyard at St. James' Church will have a **high** sensitivity to the construction activities proposed. However, the impact will be **medium**. The effect experienced by these receptors will be **moderate to major** adverse, which is significant.

Viewpoint 8: View south-west from junction of Station Road and farm track to the south of the railway line

4.1.35 This is primarily a view experienced by road users, who will have a **low** sensitivity to the construction activities proposed. The impact will be **medium**. The effect experienced at this location will be **minor** adverse, which is not significant.

Viewpoint 9: View east-south-east from Fort Road to the east of Tilbury

4.1.36 Road users will have a **low** sensitivity to the proposed construction works. The impact magnitude will be **medium**. The effect on people travelling along this road is considered to be **minor** adverse, which is not significant.

4.1.37 People using the strips of Access Land on either side of the road, will have a **high** sensitivity to the construction work and traffic. The impact magnitude will be **small to medium**. The effect experienced by these pedestrian users will be **moderate to major** adverse, which are not significant, to significant.

Viewpoint 11: View east from Fort Road bridge over railway

- 4.1.38 Road users will have a **low** sensitivity to the proposed construction works. The impact magnitude will be **medium**. The effect on people travelling along this road is considered to be **minor** adverse, which is not significant.

Viewpoint 14: View north-east from Byway 98, to the south of Tilbury Fort

- 4.1.39 People using this PRoW will have a **high** sensitivity to the proposed construction works. However, the magnitude of impact will be **small** from this distance. The effect experienced by people at this location will be **moderate** adverse, which is not significant.

Viewpoint 15: View north-north-west from the Thames Estuary Path/Two Forts Way

- 4.1.40 This view is representative of a short section of the path, on or beyond the land raising operations to the screening of Zone A by the buildings of Tilbury substation and the concatenation of wires and pylons, there are slightly elevated views, with no vegetation across open farmland to the proposed development in Zone A. The **high** sensitivity receptors will experience **small** impact. This results in a **moderate** adverse effect for the duration of the construction of the facility, which is not significant.

Viewpoint 19: View north-east from the access ramp to the Gravesend to Tilbury Ferry at Town Pier, Gravesend

- 4.1.41 People accessing the Town Pier ramp are considered to have a **medium** or **high** sensitivity, depending on the purpose for their visit. The impact of the construction works from this location is considered to be **negligible**. The effects will be **negligible** to **minor** adverse, which are not significant.

Viewpoint 22: View north-north-east from the beacon on Windmill Hill, Gravesend

- 4.1.42 People using Windmill Gardens have a **high** sensitivity to the proposed construction works. However, from this distance the impact will be **negligible**. The effect is considered to be **minor** adverse, which is not significant.

Viewpoint 23: View north-north-west from the Saxon Shore Way, to the north of the police training centre, north Kent

- 4.1.43 People using the Saxon Shore Way are **high** sensitivity receptors. The impact from this location will be **small**. The effect is considered to be **moderate** adverse, which is not significant.

Viewpoint 24: View north-west from the Saxon Shore Way at the junction with Footpath NS318 at Shornmead Fort, north Kent

- 4.1.44 People using the Saxon Shore Way are **high** sensitivity receptors. The impact from this location will be **negligible**. The effect is considered to be **minor** adverse, which is not significant.

Night Time Construction Visual Effects

- 4.1.45 The proposed lighting to be used during the construction phase of the proposed development is outlined in Table 2.6: Maximum design envelope parameters assessed, of this chapter and in Volume2, Chapter 2: Project Description.

- 4.1.46 Assessment work is on-going and this will be reported on in the final ES

4.2 Operational and maintenance phase

Landscape Effects

National Landscape Character Areas

- 4.2.1 NCA 81: Thames Estuary, will be directly affected by the proposed development of Thurrock Flexible Generation Plant Zones A and E (the two above ground installations of the proposed facility). The Thames Estuary is considered to have a **medium** sensitivity to the proposed development. This part of the NCA is characterised by industrial development, including power infrastructure and the extractive industry. The impact on this large character area is **small** and the effect on the NCA is considered to be **minor** adverse, which is not significant.

Thurrock Landscape Character Areas

- 4.2.2 LCA C5: Tilbury Marshes, will be directly affected by the proposed development within Development Zones A, and F. The haul road in Zone J will remain in place but only used in cases of replacing large pieces of equipment, its presence will have little impact. The sensitivity of LCA C5 to the proposed development is considered to be **medium**. The impact of the development in this area is considered to be **medium**. The effect experienced by the LCA will be **moderate** adverse, which is not significant.
- 4.2.3 LCA D6: Chadwell Escarpment Urban Fringe will not be directly affected by the proposed development. Although views towards the facility will be possible. Given the industrial context of these views of the facility, LCA D6 is considered to have a **low** sensitivity to the proposed development. The impact on the LCA is **small** and the effect on the NCA is considered to be **minor** adverse, which is not significant.

4.2.4 LCA D7: West Tilbury Urban Fringe, will be directly affected by the gas installation in area E. The sensitivity of this LCA to the proposed development in these zones is **low**. The impact magnitude of the proposed works is considered to be **negligible**. The effect experienced by the LCA is considered to be **negligible** adverse, which is not significant.

Essex Coast Landscape Character Areas

4.2.5 The assessment of the effects on these character areas is to be completed in final ES following further research.

Night Time Operational Landscape Effects

4.2.6 The anticipated lighting used during the operation and maintenance phase of the Thurrock Flexible Generation Plant is outlined in Table 2.6: Maximum design envelope parameters assessed and in Volume 2, Chapter 2: Project Description.

4.2.7 Assessment work is on-going and this will be reported on in the final ES.

Visual Effects

4.2.8 Unlike landscape resources and receptors, all visual resources and receptors are directly affected.

Visual Receptors

Residential

4.2.9 Residential receptors located on the Chadwell St. Mary - West Tilbury - East Tilbury ridgeline, including properties at Low Street, have varying views. These are **high** sensitivity receptors who will experience visual impacts ranging from **no change to small**. The effects experienced by these receptors are considered to range from **none to moderate** adverse, which are not significant.

4.2.10 Residents of properties along Biggin Lane and the farm track to Gun Hill lane are **high** sensitivity receptors that will experience **negligible to small** impacts during the operation and maintenance phase. The effects experienced by the receptors range from **minor to moderate** adverse, which are not significant.

4.2.11 Residents on the eastern edge of Tilbury are of a **high** sensitivity. The impacts of the proposed development on these receptors will vary from **no change to small**. The effects experienced by people living in these properties will vary from **none to moderate** adverse, which are not significant.

4.2.12 Residents between Low Street and East Tilbury, including individual farms, have a **high** sensitivity, to the proposed development. The impacts will vary from **no change to negligible**, depending on the location of the receptor. The effects will vary from **none to minor** adverse, which are not significant.

4.2.13 Those residents in properties that line the waterfront at Gravesend are **high** sensitivity receptors, that due to the elevation of some of the flats may have views of Zone A. However, the impact of the proposed development will be **negligible**, for those that have views. The effect will be **minor** adverse, which is not significant.

Access Land and Public Open Space

4.2.14 Walton Common and Access Land to the south of the railway will be directly impacted. Users of these areas will no longer be able to gain access. However, a larger area of replacement Common Land and Access Land will be provided to the north of the railway, in a more easily accessible location. These **high** sensitivity receptors will experience a **negligible** impact due to the views of the proposed development. This will result in a **minor** adverse effect, which is not significant.

4.2.15 People using the small strips of Access Land either side of Gun Hill lane, Cooper Shaw Road and Fort Road, as well as those using the larger area of Parsonage Common, are **high** sensitivity receptors. They will experience **small to medium** impacts. The effects will be **moderate to major** adverse, which vary from not significant to significant.

4.2.16 People using the Public Open Space off Thames View, Chadwell St. Mary have a **high** sensitivity. The magnitude of the impact the proposed development will have on these receptors is **small**. The effect experienced by these receptors will be **moderate** adverse, which is not significant.

Public Rights of Way

4.2.17 The footpaths around Tilbury Fort are used by **high** sensitivity receptors, due to location, orientation and the presence of buildings, bunds, walls and vegetation, the impacts are considered to be **negligible**. The effect experienced by users of these PRow is **minor** adverse, which is not significant.

4.2.18 The views experienced by people using the Thames Estuary Path/Two Forts Way/FP146 to the east of Tilbury Power Station vary depending on distance, for the majority of the path, the location in relation to the land-raising operation, the vegetation and the low elevation results in **no change to negligible** impacts for these **high** sensitivity receptors. The effect on people using this part of the path will vary from **none to minor**, which are not significant.

4.2.19 For a short section of the path, on or beyond the land raising operations to the screening of Zone A by the buildings of Tilbury substation and the associated wirescape, there are slightly elevated views, with no vegetation across open farmland to the proposed development in Zone A. The **high** sensitivity receptors will experience **small** impact. This results in a **moderate** adverse effect, which is not significant.

4.2.20 Views gained from PRoW on the Chadwell to east Tilbury ridge vary considerably. Of those PRoW that are still open and that have not been ploughed up, or are not impassable, the **high** sensitivity receptors will experience a range of impacts, that vary from **no change to small**. The effects experienced by the users of the PRoW in this area are considered to be **none to moderate** adverse, which are not significant.

4.2.21 Users of the Saxon Shore Way are **high** sensitivity receptors that will experience a variety of impacts and impact magnitude. As the views are generally open the degree of impact generally relates to distance from Zone A. The more distant viewpoints will experience **negligible** impact. Those that are closer will experience **small** magnitudes of impact. The effects range from **minor to moderate** adverse, which are not significant.

Tourist Attractions and Recreation (other than PRoW)

4.2.22 People visiting Tilbury Fort are **high** sensitivity receptors that would experience **no change to a negligible** impact, due to the configuration of the fort and the distance from the proposed facility. The effects would range from **none to minor**, which are not significant

4.2.23 People visiting Coalhouse Fort are **high** sensitivity receptors that would experience **no change to a negligible** impact, due to the vegetation surrounding the fort and the distance from the proposed development. The effects would range from **none to minor** adverse, which are not significant.

4.2.24 Shornmead Fort and New Tavern Fort. People visiting Shornmead Fort on the Saxon Shore Way and New Tavern Fort are **high** sensitivity receptors. The impact magnitude will be **negligible**. The effect will be **minor** adverse, which is not significant.

4.2.25 The **high and medium** sensitivity users of Gravesend Waterfront and Gordon Gardens will experience impact magnitudes between **no change and negligible**, dependent on location and activity. The effects are considered to range from **none to minor** adverse, which are not significant.

Community Facilities

4.2.26 The effects of **high** sensitivity receptors visiting St, James' Church graveyard, will experience a **small to medium** impact on views from the proposed development. There will be **moderate to major** adverse effects, which vary from not significant to significant.

4.2.27 The two academies and the allotments on the southern edge of Chadwell St. Mary and the northern edge of Tilbury are **medium** sensitivity receptors, that have close to mid-range views of the proposed haul road. The magnitude of impact is considered to be **negligible** during the operation and maintenance phase, with a resulting **minor** adverse effect which is not significant.

Dynamic Receptors

4.2.28 Rail users have a variety of sensitivities, depending on the reason for travel, it is **low** for people travelling to work, or **high** for people travelling for pleasure. The impact would depend on the orientation of the passenger and the speed at which they are travelling. The overall impact of the proposed development is considered to be **small**. The effects on rail users are considered to vary between **minor to moderate** adverse, which are not significant.

4.2.29 Crew and passengers on marine vessels also have a variety of sensitivities depending on their occupations. People working on boats are considered to have a **low** sensitivity to the proposed development, whereas people travelling for pleasure will have a **high** sensitivity to the proposed development. The impact on these people will also vary depending on number of factors, including their proximity, orientation and elevation to the facility. Given the distance of the FGP facility to the river, the impact is considered to be **negligible**. The effects on marine based receptors are considered to be **negligible to minor** adverse, which are not significant.

Representative Viewpoints

Viewpoint 3: View south-east from public open space to the south of Chadwell St. Mary

4.2.30 People using the Public Open Space and residents of Thames View are considered to have a **high** sensitivity, to the proposed FGP facility. The magnitude of impact on views will be **small** (Viewpoint 5, Figure 4.30). The effects experienced by these receptors will be **moderate** adverse which are not significant.

Viewpoint 6: View south from the junction of Gun Hill lane, Cooper Shaw Road and Fort Road

- 4.2.31 Road users will have a **low** sensitivity to the proposed FGP facility. The impact magnitude will be **medium** (Viewpoint 6, Figure 4.31). The effects on people travelling along these roads is considered to be **minor** adverse, which is not significant.
- 4.2.32 People using the small strips of Access Land on either side of the roads will have a **high** sensitivity to the proposed FGP facility. The impact magnitude will be **small to medium**. The effects experienced by these pedestrian users will be **moderate to major** adverse, which are not significant to significant

Viewpoint 7: View south from the graveyard of St. James' Church, West Tilbury

People visiting the graveyard at St. James' Church will have a **high** sensitivity to the proposed FGP facility. However, the impact will be **medium** (Viewpoint 7, Figure 4.32). The effect experienced by these receptors will be **moderate to major** adverse, which is significant.

Viewpoint 8: View south-west from junction of Station Road and farm track to the south of the railway line

- 4.2.33 This is primarily a view experienced by road users, who will have a **low** sensitivity to the proposed FGP facility. The impact will be **medium** (Viewpoint 8, Figure 4.33). The effect experienced at this location will be **minor** adverse, which is not significant.

Viewpoint 9: View east-south-east from Fort Road to the east of Tilbury

- 4.2.34 Road users will have a **low** sensitivity to the proposed FGP facility. The impact magnitude will be **medium** (Viewpoint 9, Figure 4.34). The effect on people travelling along this road is considered to be **minor** adverse, which is not significant.
- 4.2.35 People using the Access Land on either side of the road, will have a **high** sensitivity to the proposed FGP facility. The impact magnitude will be **small to medium** (Viewpoint 9, Figure 4.34). The effects experienced by these pedestrian users will be **moderate to major** adverse, which are not significant, to significant.

Viewpoint 11: View east from Fort Road bridge over railway

- 4.2.36 Road users will have a **low** sensitivity to the proposed FGP facility. The impact magnitude will be **medium** (Viewpoint 11, Figure 4.35). The effect on people travelling along this road is considered to be **minor** adverse, which is not significant.

Viewpoint 14: View north-east from Byway 98, to the south of Tilbury Fort

- 4.2.37 People using this PRoW will have a **high** sensitivity to the proposed FGP facility. However, the magnitude of impact will be **small** from this distance and location (Viewpoint 14, Figure 4.37). Viewpoint 12, Figure 4.36, is a visualisation from a location at Tilbury Fort, closer to the FGP facility. It has been included as it provides additional information on the effects on the visual resources of the area. The effect experienced by people at this location will be **moderate** adverse, which is not significant.

Viewpoint 15: View north-north-west from the Thames Estuary Path/Two Forts Way

- 4.2.38 This view is representative of a short section of the path, on or beyond the land raising operations to the screening of Zone A by the buildings of Tilbury substation and the concatenation of wires and pylons, there are slightly elevated views, with no vegetation across open farmland to the proposed development in Zone A. The **high** sensitivity receptors will experience **small** impact (Viewpoint 15, Figure 4.38). This results in a **moderate** adverse effect for the duration of the construction of the facility, which is not significant to significant.

Viewpoint 19: View north-east from the access ramp to the Gravesend to Tilbury Ferry at Town Pier, Gravesend

- 4.2.39 People accessing the Gravesend to Tilbury ferry via the Town Pier ramp are considered to have a **medium** or **high** sensitivity, depending on the purpose for their visit. The impact of the proposed FGP facility from this location is considered to be **negligible** (Viewpoint 19, Figure 4.39). The effects on these receptors will be **negligible to minor** adverse, which are not significant.

Viewpoint 22: View north-north-east from the beacon on Windmill Hill, Gravesend

- 4.2.40 People using Windmill Gardens have a **high** sensitivity to the proposed FGP facility. However, from this distance the impact will be **negligible** (Viewpoint 22, Figure 4.40). The effect is considered to be **minor** adverse, which is not significant.

Viewpoint 23: View north-north-west from the Saxon Shore Way, to the north of the police training centre, north Kent

- 4.2.41 People using the Saxon Shore Way are **high** sensitivity receptors. The impact from this location will be **small** (Viewpoint 23, Figure 4.41). The effect is considered to be **moderate** adverse, which is not significant.

Viewpoint 24: View north-west from the Saxon Shore Way at the junction with Footpath NS318 at Shornmead Fort, north Kent

- 4.2.42 People using the Saxon Shore Way are **high** sensitivity receptors. The impact from this location will be **negligible** (Viewpoint 24, Figure 4.42). The significance of effect is considered to be **minor** adverse, which is not significant.

Viewpoint 26: west-south-west from the Saxon Shore Way at Cliffe Fort, north Kent

- 4.2.43 Although the effects were considered not to be significant from this location, a visualisation was undertaken from the Saxon Shore Way at Cliffe Fort (Viewpoint 26, Figure 4.43). This has been included within the PEIR as it provides additional information on the effects on the visual resources of the area.

Night Time Operational Visual Effects

- 4.2.44 The lighting that might be used on the Thurrock Flexible Generation Plant during the operational phase of the proposed development is outlined at Table 2.6: Maximum design envelope parameters assessed, of this chapter and in Volume 2, Chapter 2: Project Description.

4.3 Decommissioning phase

Landscape Effects

- 4.3.1 In the future baseline, where Tilbury B Power Station has been decommissioned and the land remediated with no further development in the area, the sensitivity of the landscape resource is expected to be higher than it currently is, but due to the presence of the sewage treatment works, Tilbury substation and the overhead power lines, the sensitivity of NCA 81: Greater Thames Estuary and LCA C5: Tilbury Marshes remains **medium**, as does that of LCA D7: West Tilbury Urban Fringe, LCA D4: White Crofts/Orsett Heath Urban Fringe and LCA D6: Chadwell Escarpment Urban Fringe (the other character areas that might be directly affected by the decommissioning works). The magnitude of impact of the decommissioning phase is expected to be the same or lower than the magnitude of impact for the construction phase, that is **negligible to medium**. The effects are considered to be **negligible to moderate** adverse, which are not significant.

Visual Effects

- 4.3.2 In the future baseline set out in paragraph 4.3.1, above, the sensitivity of visual receptors is expected to be the same as it currently is, due to the presence of the sewage treatment works, Tilbury substation and the overhead power lines. The magnitude of impact of the decommissioning phase is expected to be the same or lower than the magnitude of impact for the construction phase, that is **negligible to medium**. The effects are considered to be **negligible to moderate to Major** adverse, which are not significant to significant.

Mitigation

- 4.3.3 Before decommissioning commences, a landscape restoration plan will be agreed with the relevant authority, as part of a wider decommissioning strategy. It is anticipated to involve returning the Thurrock Flexible Generation Plant Zone A to grassland, with some areas of scrub. In effect, an enhanced landscape to the one that currently exists, but one that remains in keeping with the management objectives for the LCAs.

Extended Operational Lifetime

- 4.3.4 Should the Thurrock Flexible Generation Plant not be decommissioned, the operational effects would continue, with some reduction on impacts, as the landscape mitigation would soften views of the plant from the closest receptors.

4.4 Transboundary effects

- 4.4.1 A screening of transboundary impacts has been carried out and is presented in Volume 5, Appendix 4.2: Transboundary Impacts Screening Note. This screening exercise identified that there was no potential for significant transboundary effects with regard to landscape and visual resources from the Thurrock Flexible Generation Plant upon the interests of other EEA States.

4.5 Inter-related effects

- 4.5.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the construction, operation or decommissioning of Thurrock Flexible Generation Plant on the same receptor. The following assessments have been made and a description of the likely inter-related effects on landscape and visual resources is provided in Volume 4, Chapter 17: Summary of Inter-Related Effects.

Project lifetime effects

- 4.5.2 Assessment of the potential for effects that occur during more than one stage of the development's lifetime (construction, operation or decommissioning) to interact such that they may create a more significant effect on a receptor than when assessed in isolation for each stage

Receptor-led effects

- 4.5.3 Assessment of the potential for effects via multiple environmental or social pathways to interact, spatially and temporally, to create a greater inter-related effect on a receptor than is predicted for each pathway (in its respective topic chapter) individually.

5. Cumulative Effects Assessment

5.1 Introduction

- 5.1.1 The process of identifying other consented or proposed developments and screening to create a shortlist of those having potential for cumulative effects with Thurrock Flexible Generation Plant is described in Volume 2, Chapter 4: Environmental Impact Assessment Methodology and Volume 5, Appendix 4.1: Cumulative Developments and Screening. Appendix 4.1 lists the shortlisted cumulative developments and the tier they have been assigned (guiding the weight that the decision-maker may place on each development's likelihood of being realised) in accordance with PINS Guidance Note 17.
- 5.1.2 Cumulative developments shortlisted are those that have potential to contribute impacts affecting receptors also affected by the proposed development (for example, contributing significant additional traffic to the same road links) or that introduce additional sensitive receptors (for example, new residences or schools closer to the proposed development than existing) or both.
- 5.1.3 The cumulative effects assessment for landscape and visual resources has been undertaken in two stages, reported as follows. In the first stage, cumulative effects of the proposed development have been considered in an overall scenario where the land surrounding the proposed development could be largely transformed by the three adjacent NSIP developments and the possible expansion of nearby residential and employment uses to the east. This is referred to as the 'max development' scenario.
- 5.1.4 In the second stage, cumulative effects with specific individual development projects have been assessed where these would affect a particular environmental pathway or receptor for landscape and visual resources. Only shortlisted developments with potential cumulative effects specific to landscape and visual resources are assessed in this chapter.

5.2 Cumulative effects in 'maximum development' scenario

- 5.2.1 Three NSIP developments are proposed on land adjacent to and in some cases overlapping with the Thurrock Flexible Generation Plant application boundary. The Tilbury2 port expansion adjacent to the west is at the DCO Examination stage (Tier 1). The Tilbury Energy Centre (TEC) power station to the south and Lower Thames Crossing (LTC) motorway and link road to the east and north are both at EIA scoping stage (Tier 2). As part of this PEIR, cumulative wirelines from the representative viewpoints assessed in Section 5 have been generated (Figures 5.44 to 5.57). The visualisations of Tilbury 2 and the TEC have been modelled using publicly available information and dimensions. As no specific details of the LTC are available, this has not been included in the cumulative visualisation, which, due to available information are wirelines only at this stage.
- 5.2.2 Outline planning permission has been granted for several residential and mixed-use developments expanding Linford and East Tilbury in the direction of Thurrock Flexible Generation Plant (Tier 1).
- 5.2.3 Should all of these developments proceed, Thurrock Flexible Generation Plant's main development site would be closely surrounded on all sides by the temporary or permanent works areas of the NSIPs. Its gas connection point to Feeder 18 could be adjacent to the expanded outskirts of East Tilbury and also potentially to the TEC gas connection, and the pipeline route could cross land to be developed for the LTC.
- 5.2.4 Thurrock Core Strategy (2015) allocates land for possible strategic employment provision and sustainable economic growth to the west of the proposed development and to the east where there is existing industry at East Tilbury. Thurrock Borough Council is drafting a new Local Plan to replace the Core Strategy. The Issues and Options (Stage 2) consultation document proposals map of July 2018 (withdrawn temporarily due to recent NPPF changes) suggested possible zones for residential and commercial/employment development in areas east of the proposed development, where this would be facilitated by the Lower Thames Crossing project. However, these Tier 3 development possibilities are afforded only limited weight due to the early stage of this local plan development process.
- #### Cumulative Effects on Landscape Resources and Receptors
- 5.2.5 GLVIA3 refers to Scottish Natural Heritage when defining cumulative landscape effects as "effects that can impact on either the physical fabric or character of the landscape, or any special values attached to it" (SNH, 2012).

Designated Landscapes

- 5.2.6 In the 'maximum development' scenario set out in paragraphs 5.2.1 to 5.2.3 above, the indirect, incremental, cumulative effects of Thurrock Flexible Generation Plant on designated landscape resources would be minor. None of the projects are within a designated landscape. Although the larger NSIP projects on the Thurrock side of the Thames Estuary will be identifiable from the Kent Downs AONB, due to the scale of the built structures and extent they will not break the skyline when viewed from the AONB. The LTC by contrast also directly impact north Kent and may well affect the special qualities of the Kent Downs AONB. In contrast to the other NSIPs, Thurrock Flexible Generation Plant will be barely visible, situated further away from the river, closer to the higher land to the north.
- 5.2.7 The negligible incremental cumulative impact of the Thurrock Flexible Generation Plant development on the high sensitivity landscape receptor will have minor effects, which will not affect the special qualities of the AONB or compromise the reasons for its designation. It should be noted that the LTC has the potential to have significant effects, on the AONB on its own, but that the other NSIPs would not incrementally tip this from a non-significant effect to a significant one.

Non-designated Landscapes

- 5.2.8 The development proposals for the Thurrock/Essex area that lies within NCA 81: Greater Thames Estuary are an intensification of the industrial character of this part of the River Thames. The incremental impact of the Thurrock Flexible Generation Plant development on this medium sensitivity receptor will be small and will not increase the effects upon this LCA significantly.
- 5.2.9 Three other NSIP projects are located with LCA C5: Tilbury Marshes and together these projects will have a significant effect on the LCA. The direct, incremental impact of the Thurrock Flexible Generation Plant development in this character area would not change the effect to a significant one.
- 5.2.10 The direct, incremental, cumulative, impact of the installation of the gas pipeline and connection point on LCA D7: West Tilbury Urban Fringe will be negligible on this medium sensitivity receptor. The cumulative effect of the Thurrock Flexible Generation Plant development in this LCA would be negligible will not increase the effects on this LCA significantly.

Cumulative Effects on Visual Resources and Receptors

- 5.2.11 GLVIA3 also quotes Scottish Natural Heritage in defining cumulative visual effects, as effects that can be caused by combined visibility, which "*occurs where the observer is able to see two or more developments from one viewpoint*" and/or sequential effects "*which occur when the observer has to move to another viewpoint to see different developments*" (SNH, 2012).
- 5.2.12 In the 'maximum development' scenario set out in paragraphs 5.2.1 to 5.2.3 above, the direct, cumulative effects of Tilbury2 and TEC on visual resources and receptors will be significant (the details of the LTC are not known) as shown in Viewpoint 3, Figure 5.44, Viewpoint 14, Figure 5.51, Viewpoint 19, Figure 5.53, Viewpoint 22, Figure 5.54 and Viewpoint 23, Figure 5.55.
- 5.2.13 In some views and for some groups of receptors, the other NSIPs would screen or partly screen the Thurrock Flexible Generation Plant development (Viewpoint 11, Figure 5.49 and Viewpoint 14, Figure 5.51, Viewpoint 19, Figure 5.53, Viewpoint 22, Figure 5.54). From these viewpoints the impacts of the Thurrock Flexible Generation Plant development will not increase the significance of effects on visual receptors.
- 5.2.14 In some views, usually due to distance but sometimes due to intervening infrastructure, the cumulative views of all three NSIPs will not be significant. Indeed, the incremental, cumulative effects of Thurrock Flexible Generation Plant on visual receptors from most viewpoints would not change the effect to a significant one (Viewpoint 6, Figure 5.45, Viewpoint 8, Figure 5.47, Viewpoint 9, Figure 5.48, Viewpoint 12, Figure 5.50, Viewpoint 24, Figure 5.56 and Viewpoint 26, Figure 5.75).
- 5.2.15 In the view from a short section of The Thames Estuary Path/Two Forts Way/FP146, the impact of TEC would have a significant effect on the open nature of this view, which Tilbury2 and Thurrock Flexible Generation Plant intensify (Viewpoint 15, Figure 5.52).
- 5.2.16 From certain points on the Chadwell St. Mary – West Tilbury – East Tilbury ridgeline, Tilbury2, TEC and Thurrock Flexible Generation Plant will be seen with little overlap/screening of the projects. The taller elements of all three proposed developments are visible above the skyline, Viewpoint 7, Figure 5.46 is a cumulative visualisation from the representative view from the graveyard of St. James' Church, West Tilbury. The impact of TEC has a significant effect on this view, which Tilbury2 and Thurrock Flexible Generation Plant compound.

Cumulative Night Time Landscape Effects

- 5.2.17 Assessment work is on-going and this will be reported on in the final ES.

Cumulative Night Time Visual Effects

5.2.18 Assessment work is on-going and this will be reported on in the final ES.

Cumulative Decommissioning Effects

5.2.19 It is assumed that the LTC and the housing developments will not be decommissioned and that they are permanent developments. With regards to the decommissioning of the Tilbury2, TEC developments and the waste wood processing plant at Marsh Farm, it is unlikely that the decommissioning of the facilities would overlap. Should this be likely it could be managed at the time to avoid significant effects. This could be achieved by means of a decommissioning strategy, which could be completed towards the end of the facilities' lives.

5.3 Cumulative effects with specific developments

Short Listed Projects

Nationally Significant Infrastructure Projects

CP 042 Ref: TRO30003 – Site of Tilbury B Power Station, East Tilbury

5.3.1 Tilbury2 is a new port facility alongside the existing Port of Tilbury. This will involve the extension of existing jetty facilities and the dredging of berth pockets in the River Thames, and land works and facilities for: a "Roll-On / Roll-Off" (Ro-Ro) terminal for importing and exporting containers on road trailers; a facility for importing and processing bulk construction materials; and areas of external storage for a variety of goods such as imported cars. The project also involves the construction of road and rail links to the site from adjacent networks.

5.3.2 It is considered that Tilbury2 will be operational before the construction of Thurrock Flexible Generation Plant commences. Therefore, there will be no cumulative construction impacts on either landscape or visual resources and receptors.

5.3.3 Neither project is within a designated landscape. The Tilbury2 silo will be identifiable from the Kent Downs AONB, as this element of the project is adjacent to the river, at the edge of the drained marshland. However, it will not break the skyline. The Thurrock Flexible Generation Plant will be barely visible, situated further from the river and closer to the higher land to the north. The cumulative development of these two projects will not affect the special qualities of the AONB or compromise the reasons for its designation.

5.3.4 The Tilbury2 project is situated within LCA C5: Tilbury Marshes, as is Thurrock Flexible Generation Plant. The Thurrock Flexible Generation Plant development is separated from the proposed Tilbury2 jetty and silo by Tilbury Substation. The silo and container storage area are to be located on areas of brownfield land. The three processing buildings and heaps of aggregates are proposed for areas that are rough grassland with some scrub. The cumulative impact will be to reduce the areas of open grassland within the LCA. However, given the character of this part of the LCA, the cumulative effect of the two projects will not have a significant effect on the LCA.

5.3.5 Views from the west will have the Tilbury2 processing buildings to the fore, with Thurrock Flexible Generation Plant behind. In views from the north-east the Thurrock Flexible Generation Plant is seen to one side of the Tilbury2 processing buildings (Viewpoint 3, Figure 5.44 and Viewpoint 6, Figure 5.45). The cumulative impact of views from this direction will not be significant.

5.3.6 From the south-east, e.g. at Tilbury Fort, the container storage areas will be closest to the viewer, with Thurrock Flexible Generation Plant development barely visible behind (Viewpoint 12, Figure 5.50 and Viewpoint 14, Figure 5.51). In views from Gravesend the Tilbury2 jetty, silo and container storage areas are seen, with Thurrock Flexible Generation Plant barely visible, behind (Viewpoint 19, Figure 5.53 and Viewpoint 20, Figure 5.54). The cumulative impact on views from this direction is not significant.

5.3.7 From the south-west on the Saxon Shore Way, the Thurrock Flexible Generation Plant stacks are seen apart from the Tilbury2 silo, container storage areas and processing buildings. The cumulative impact of the two projects in close views from this direction are not significant (Viewpoint 23, Figure 5.55) nor is the cumulative impact from further east from Shornmead Fort and Cliffe Fort (Viewpoint 24, Figure 5.56 and Viewpoint 26, Figure 5.57).

5.3.8 In views from the vicinity of Coalhouse Fort the Thurrock Flexible Generation Plant stacks are seen even further from Tilbury2 silo, container storage areas and processing buildings. There will be no significant effects experienced by receptors from this part of the Saxon Shore Way due to distance.

- 5.3.9 Users of the Thames Estuary Path/Two Forts Path/Footpath 146, on the short section of the path immediately to the east of Tilbury Power Station, have to turn their heads to see both the Thurrock Flexible Generation Plant stacks and the Tilbury2 silo and jetty. However, the Tilbury2 container storage areas and processing buildings can be seen with the stacks of the Thurrock Flexible Generation Plant in same view (Viewpoint 15, Figure 5.52). Nevertheless, due to the distance and comparative low height of the Tilbury2 container areas and processing plants the cumulative visual impacts will not intensify the effects at this location and will not be significant.
- 5.3.10 The viewpoint from the graveyard of St James' Church is representative of the views south that might be obtained from elevated positions directly north of Tilbury Power Station. Individually the Thurrock Flexible Generation Plant development has the potential to have a significant effect on viewers. The Tilbury2 proposal adds built development and industrial elements to the view and so intensifies this effect (Viewpoint 7, Figure 5.46).
- [CP 046 Ref: ENO10089 – Site of Tilbury B Power Station, East Tilbury](#)
- 5.3.11 Tilbury Energy Centre is a Combined Cycle Gas Power Station with a generating capacity up to 2500 megawatts (MW), Open Cycle Gas Turbines with a generating capacity up to 300 MW and an energy storage facility, on the Tilbury Power Station site.
- 5.3.12 It is considered that there may be overlap of the construction programme of the TEC with Thurrock Flexible Generation Plant. Therefore, there are cumulative construction impacts resulting from both the projects, as well as cumulative impacts during the operational phases.
- 5.3.13 Neither project is within a designated landscape. The TEC project will be identifiable from the Kent Downs AONB, due to the scale of the buildings and associated stacks. These elements of the TEC are relatively close to the river, situated to the fore of the drained marshland. Despite the scale of the buildings and stacks they are unlikely to break the skyline. The Thurrock Flexible Generation Plant will be barely visible, situated further away from the river and closer to the higher land to the north. The cumulative development of these two projects will not affect the special qualities of the AONB or compromise the reasons for its designation.
- 5.3.14 The TEC project is situated within LCA C5: Tilbury Marshes, as is Thurrock Flexible Generation Plant. The Thurrock Flexible Generation Plant development is separated from the proposed TEC by Tilbury Substation. The TEC project is to be located on areas of brownfield land, with aspects of the development stretching into the flat farmland to the east during the construction phase. Due to the scale of the TEC structures, the character of the open drained marshland with wide views will be affected, as will areas of drained marshland during the construction phase. The cumulative effect of the two projects during the construction phase will have a significant effect on the LCA, due to the extent of the working area. When both projects are operational the effect on the LCA C5: Tilbury Marshes will not be significant.
- 5.3.15 Due to the scale and extent of the TEC buildings and structures, the visual impact of the project on its own will be significant from certain directions. Views from the north and close views from the east are considered to be those most affected. Viewpoint 7 (Figure 5.46) and Viewpoint 15 (Figure 5.52) represent these views.
- 5.3.16 The viewpoint from the graveyard of St James' Church is representative of the views that might be obtained from elevated positions directly north of Tilbury Power Station. Individually the TEC project will have a significant effect on views from this location. The Thurrock Flexible Generation Plant development compounds this (Viewpoint 7, Figure 5.46).
- 5.3.17 Users of the Thames Estuary Path/Two Forts Path/Footpath 146, on the short section of the path immediately to the east of Tilbury Power Station, will see both the TEC buildings and stacks in the same view as the Thurrock Flexible Generation Plant stacks (Viewpoint 15, Figure 5.52). The cumulative impacts on these close views will intensify the already significant effects of the TEC project at this location.
- [CP 058 Ref: TR010032 – East of Gravesend and Tilbury](#)
- 5.3.18 The Lower Thames Crossing (LTC) will be a new road crossing connecting Essex and Kent. It is located to the east of Gravesend and Tilbury.
- 5.3.19 It is considered likely that the main visible structures Thurrock Flexible Generation Plant will be built and operational before the construction of the LTC commences even in a phased construction programme for Thurrock Flexible Generation Plant, as the gas engines and stacks would be built in the initial phases. Therefore, there will be no cumulative construction impacts on landscape and visual resources and receptors.

- 5.3.20 Neither project is within a designated landscape. The LTC project will be identifiable from the Kent Downs AONB, due to the scale of project. It will impact on the landscape in north Kent, to the north of the Kent Downs AONB and will be clearly visible from parts of the AONB (Viewpoint 29, Figure 3.22) and will pass very close to, if not on the alignment of Viewpoint 28, Figure 3.21. The LTC might affect the special qualities of the AONB, as a result of the north Kent section of the proposed transport infrastructure. The Thurrock Flexible Generation Plant does not intensify the effects on the AONB caused by the construction of the LTC.
- 5.3.21 The LTC project is situated within LCA C5: Tilbury Marshes, as is Thurrock Flexible Generation Plant. The main roads of the LTC will cross the drained marshland and the associated connecting roads will also cross some drained marshland. The land take for the LTC will have a significant impact on the character of the LCA. The cumulative impact of the Thurrock Flexible Generation Plant slightly intensifies the effect on the LCA.
- 5.3.22 The effect on wider views from the south-east are discussed in paragraph 5.3.20 above. In closer views from the east, in which the two NSIP projects may be seen together are limited, as the views from Coalhouse Fort will be primarily of the LTC infrastructure, which has the potential to screen the Thurrock Flexible Generation Plant entirely. The Thurrock Flexible Generation Plant development would only add a negligible cumulative visual effect to that of the LTC from this direction.
- 5.3.23 Cumulative views from the flat land to the north of the Thurrock Flexible Generation Plant (e.g. Viewpoint 6, Figure 5.45) would include a connecting road, to the south of the railway. If at grade, the traffic and associated lighting columns and signage would be seen to the fore of the FGP. If raised, lower elements of the Thurrock project would be screened.
- 5.3.24 From the ridgeline views of both projects together would be limited to the views of the approach/connecting roads for the tunnel, crossing the land to the south of the railway (Viewpoint 7, Figure 5.46). These cumulative effects of this part of the LTC project with the Thurrock Flexible Generation Plant would not be significant.
- Other Potential Cumulative Projects***
- [CP 005 Application Ref: 18/00664/COND – One Big Self Store Ltd Trafalgar House Thames Industrial Park, Princess Margaret Road, East Tilbury, Essex](#)
- 5.3.25 Redevelopment of an area of previously developed land towards the southern boundary of Thames Industrial Estate to provide 50 dwellings, improved access arrangements and the creation of an area of public open space.
- 5.3.26 Neither project is within, or adjacent to, a designated landscape. The residential development is located within LCA D7: West Tilbury Urban Fringe, the same character area as the gas connection point of the Thurrock Flexible Generation Plant development. The cumulative impact will be negligible during both the construction and operation and maintenance phases of the Thurrock Flexible Generation Plant and the effects of no significance.
- 5.3.27 Should the construction phases of the two projects overlap, cumulative visual impacts would be negligible. No cumulative visual impacts would be experienced during the operation and maintenance phases and the effects of no significance or none.
- [CP 012 Application Ref: 16/01232/OUT – Land for Development, Muckingford Road, Linford, Essex](#)
- 5.3.28 Application for outline planning permission for a proposed development of up to 1,000 dwellings, a new local road network, a new single form entry primary school, local centre including provision for shops and new areas of open space, including formal recreation.
- 5.3.29 Neither project is within, or adjacent to, a designated landscape. This residential development with school and shops/local centre is located within two LCAs, LCA D5: Linford/Buckingham Hill Urban Fringe and LCA D7: West Tilbury Urban Fringe. It shares the latter with the Thurrock Flexible Generation Plant gas connection point. However, the cumulative impact will be negligible during both the construction and operation and maintenance phases of the Thurrock Flexible Generation Plant and the effects of no significance.
- 5.3.30 Similarly, the cumulative visual impacts will be negligible during the construction phase (should the construction phases of the two projects overlap) and no change during the operation and maintenance phases. The effects would not be significant.
- [CP 016 Application Ref: 17/00977/FUL – Land Part of Marsh Farm Sewage Treatment Plant, Fort Road, Tilbury, Essex](#)
- 5.3.31 Retention and completion of waste wood processing plant and fire retained area bounded by concrete push walls, erection of buildings to form associated storage, reception/administration, security, and staff welfare area; formation of impermeable surface to form a lorry parking/waiting area; weighbridge and staff parking area together with associated highways and drainage works.
- 5.3.32 Neither project is within, or adjacent to, a designated landscape. The cumulative impact of the two projects would not affect the special qualities of the Kent Downs AONB.

- 5.3.33 The waste wood processing plant project is situated within LCA C5: Tilbury Marshes, as is Thurrock Flexible Generation Plant. It is anticipated that the remaining construction works at the waste wood processing plant, at Marsh Farm, will be completed before the construction of Thurrock Flexible Generation Plant commences, therefore there would be no cumulative construction effects. The cumulative impacts on landscape character are considered to be small, as the waste wood processing plant is already part of the baseline to some degree. The effects on the landscape character of the LCA are not considered to be significant.
- 5.3.34 The processing plant is not seen in the same view as the Thurrock Flexible Generation Plant facility in elevated views from the north. In the views from the north-east, situated in the flat landscape the two schemes would only be seen, either by turning the head, or with the processing plant forming an indistinct, distant element behind the Thurrock Flexible Generation Plant facility. The cumulative impacts of the two schemes would be negligible to small and not significant.
- 5.3.35 Similarly, in elevated views from the north-west, (e.g. Viewpoint 3, Figure 5.44) the processing plant would be barely noticeable against the backdrop of the surrounding woodland and infrastructure. The cumulative impacts would be small to negligible and the effects not significant.
- 5.3.36 The closest elevated location from which the two schemes might be visible is Fort Road Bridge (Viewpoint 11, Figure 5.49). However, the viewer would have to turn their head to glimpse both projects. The impact from this location is considered to be small and the cumulative visual effect not significant.
- [CP 025 Application Ref: 16/00186/DMI – National Power PLC, Tilbury Power Station, Fort Road, Tilbury, Essex](#)
- 5.3.37 Demolition of Tilbury B power station and all associated buildings and structures (including remaining structures from Tilbury A power station). The jetty will not be demolished.
- 5.3.38 This project is considered as having been completed for the purpose of this assessment and the land following demolition forms part of the future baseline.

6. Conclusion and summary

6.1 Landscape Resources and Receptors

- 6.1.1 The Thurrock Flexible Generation Plant development would be located in a dynamic landscape, and one that is undergoing rapid change. Within the Tilbury Marshes character area, to the south of the railway line, vehicles involved in land raising are seen in the farmland to the east of Zone A and plant involved in construction works is busy in the fields immediately to the west of the main Flexible Generation Plant site.
- 6.1.2 To the south of Zone A, the upper decks and bridges of the shipping travelling to and from Tilbury Docks are seen gliding through the landscape on an unseen river. Closer to the Thames, the full size of the commercial shipping is revealed. From the Thames Estuary Path, smaller vessels are also seen, crossing the river and making more local trips. The sound and sight of the decommissioning of the coal-fired Tilbury B Power Station is also more apparent closer to the river, the power station jetty being currently occupied by the incongruous looking drill ship Sertão.
- 6.1.3 To the north of Zone A, the railway carries not only passengers, but long freight trains frequently cross the landscape. The flat farmland is crossed by many pylons carrying the high voltage overhead power lines from National Grid's 400 kV Tilbury Substation. A discordant but interesting variety of towers surround the substation, with several high voltage lines crossing Thurrock Flexible Generation Plant Zone A.
- 6.1.4 The condition of the land to the west of the substation, around the sewage treatment works and either side of Fort Road, is poor. Fly-tipping is rife and horse grazing prevalent on the degraded common land.
- 6.1.5 There are few trees within the drained marshland to the north south and east of the substation, the land being divided by ditches rather than hedgerows. However, the line of the railway is recognisable in the landscape as there is scrubby, trackside vegetation with some small trees. There are some woodland, scrub and rough grassland areas around the sewage treatment works, extending north to the railway and east towards the power station, within which are areas of hardstanding used for car storage. There are also areas of trees associated with Coalhouse Fort, at the eastern end of the drained marshes. A hedgerow runs along a section of the northern side of the Thames Estuary Path, extending west from Coalhouse Fort.

6.1.6 A small ridgeline rises up from the flat farmland beyond the railway to the north of the Flexible Generation Plant main development site, and small villages, hamlets and farmsteads are located here, elevated from what were poorly drained marshes. In contrast to the relative lack of vegetation on the flat farmland to the south, there are trees, copses and hedgerows lining roads and lanes on this higher land.

6.1.7 Thurrock Flexible Generation Plant would be situated on a small area of land immediately to the north of Tilbury Substation. Although in part an area of mown grassland, it has two sets of high voltage power lines crossing it and another immediately to the east. There would be minor adverse effect on NCA 81: Thames Estuary and a moderate adverse effect on LCA C5: Tilbury Marshes, neither of which are significant.

6.1.8 It does not lie in or adjacent to the Kent Downs AONB and has no impact on the special qualities of the AONB, nor does it compromise the reasons for its designation.

6.2 Visual Resources and Receptors

6.2.1 The visual resources of the area are complex. As the land adjacent to this part of the River Thames is very flat, changes in topography and vertical elements such as buildings, ships and pylons are noticeable, but also more effective as screens. Due to the broad floodplain of the river, wide views are available from north Kent. As the river curves round to the north, the wind turbines and cranes at Tilbury docks are just distinguishable from the Hoo Peninsula. However, although low-lying, the ridgeline that curves south to Coalhouse Fort, with its attendant tree planting, provides an effective screen for views slightly to the north. While the Thurrock Flexible Generation Plant development would be visible in some long views west from north Kent, the distance and percentage of the wide view occupied by the development mean that the effects from this direction are only negligible to minor adverse, which are not significant.

6.2.2 From the waterfront at Gravesend the views north are effectively shortened by a series of industrial infrastructure elements, such as the sewage treatment works, the jetties adjacent to the power station, the remaining structure of Tilbury B Power Station, the electrical substation and the wirescape of pylons and overhead power lines. From higher land in north Kent, be it Windmill Hill in Gravesend or further east from the edge of the Kent Downs AONB, the industrial buildings on the north side of the estuary do not break the skyline and the backdrop is formed either by the low Chadwell St. Mary – West Tilbury – East Tilbury ridgeline, or in some more elevated hills, Horndon-on-the-Hill. The effects on views from this direction would vary from negligible to minor adverse, which are not significant.

- 6.2.3 From the south-west the views towards the flat farmland are short, curtailed by the sewage treatment works and the woodland that surrounds it, the remaining section of Tilbury B Power Station, as well as the multitudinous pylons and overhead power lines. Views from Tilbury Fort towards the proposed development will be restricted by these elements in the landscape. The effect on views from this direction would be negligible to minor adverse, which are not significant.
- 6.2.4 From Fort Road bridge and from the easternmost properties at Tilbury, the Thurrock Flexible Generation Plant development will be seen in the context of the infrastructure and pylons in the foreground. From the residences, the vegetation along the railway will help to screen views of the lower elements of the development. The effects on views vary from minor to moderate, which are not significant.
- 6.2.5 From the flat farmland immediately to the north of the railway line, views are across arable farmland crossed by pylons and overhead powerlines towards Tilbury Substation, Tilbury B Power Station and beyond to higher land in north Kent. From the ridgeline the elevation gives views into and across the drained marshland. The full extent of the pylons and power lines are revealed as are the industrial operations to the west of the power station. While most views will not be significant from this direction, elevated views from directly north and close views from the Access Land to the north will experience moderate to major adverse effects, which while significant, would not be unacceptable given the landscape context in which the Thurrock Flexible Generation Plant would be seen and the limited locations of these viewpoints.
- 6.2.6 Views west towards Zone A from locations on the northern side of the River Thames are gained from a few locations at Coalhouse Fort. However, due to distance and intervening vegetation, the effects would be minor to negligible adverse, which are not significant.
- 6.2.7 From the Thames Estuary Path/Two Forts Way/Footpath 146, the views are limited until the area of farmland that is being land raised is passed, travelling west along the path. For a short section the elevation and the lack of vegetation on the northern side of the path would allow views across to the Thurrock Flexible Generation Plant development, the context of the view being that of the substation and powerlines. The effect on the views from this direction would be moderate, which are not significant.

6.3 Next Steps

- 6.3.1 Fieldwork based on the responses received in the Scoping Opinion will be completed. This will include winter photography from selected viewpoints, after the leaves have fallen from the trees. Following consultation on the PEIR any additional photography will be taken at the same time. This information will be analysed and incorporated into the assessment. The night time baseline will be established. Following these further studies and in consultation with other specialists, landscape mitigation proposals will be produced, and will form part of an outline Landscape Scheme and Management Plan.

Table 6.1: Summary of potential environment effects, mitigation and monitoring.

Description of impact	Measures adopted as part of the project	Magnitude of impact	Sensitivity of receptor	Significance of effect	Additional measures	Residual effect	Proposed monitoring
Construction							
Direct and indirect impacts on landscape resources and receptors	None at the construction phase	Small	Medium	Minor to moderate adverse (not significant)	None	Minor to moderate adverse (not significant)	None
Direct impact on visual resources and receptors	None at the construction phase	No change to medium	Low to high	None to major adverse (not significant to significant)	None	None to major adverse (not significant to significant)	None
Operation							
Direct and indirect impacts on landscape resources and receptors	Built in landscape mitigation measures will form part of the proposed development (see Table 4.7)	Negligible to medium	Low to medium	Negligible to moderate adverse (not significant)	None	Negligible to moderate adverse (not significant)	Five year defects liability period as part of a Landscape Scheme and Management Plan to be produced
Direct impact on visual resources and receptors	Built in landscape mitigation measures will form part of the proposed development (see Table 4.7)	No change to medium	Low to high	None to major adverse (not significant to significant)	None	None to major adverse (not significant to significant)	Five year defects liability period as part of a Landscape Scheme and Management Plan to be produced
Decommissioning							
Direct and indirect impacts on landscape resources and receptors	None at the decommissioning phase	Negligible to medium	Medium	Negligible to moderate adverse (not significant)	None	Negligible to moderate adverse (not significant)	None
Direct impact on visual resources and receptors	None at the decommissioning phase	Negligible to medium	Low to high	Negligible to moderate to major (not significant to significant)	None	Negligible to moderate to major adverse (not significant to significant)	None

7. References

Chris Blandford Associates (2005) Thurrock Landscape Capacity Study. Thurrock Borough Council, Grays.

Council of Europe (2000) European Landscape Convention. Strasbourg, Council of Europe.

Department of Energy and Climate Change (2011) National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2). London, The Stationery Office.

Department of Energy and Climate Change (2011) National Policy Statement for Gas Supply Infrastructure and gas and Oil Pipelines (EN-4). London, The Stationery Office.

Department of Energy and Climate Change (2011) National Policy Statement for Electricity Networks Infrastructure (EN-5). London, The Stationery Office.

Department of Energy and Climate Change (2011) Overarching National Policy Statement for Energy (EN-1). London, The Stationery Office.

Essex County Council (2005) Landscape Character Assessment of the Essex Coast. SAIL (Schéma d'Aménagement Intègre du Littoral) and Essex County Council, Chelmsford.

Jacobs Engineering (UK) Ltd. (2009) Gravesham Landscape Character Assessment. Gravesham Borough Council.

Kent Downs AONB Unit (2014) Kent Downs Area of Outstanding Natural beauty: Management Plan 2014 – 2019 (Second Revision). Kent Downs AONB Partnership, Ashford.

Landscape Institute (2016) Technical Information Note 08/2015: Landscape Character Assessment. London, Landscape Institute.

Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment: Third Edition. London, Routledge.

Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework. London, The Stationery Office.

Natural England (2014) National Character Area Profiles. [Online] Available at: <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-south-east-england-and-london>. [Accessed September 2018].

Scottish Natural Heritage (2012) Assessing the cumulative impact of onshore wind energy development. Inverness, Scottish Natural Heritage.

Swanwick, C. and Land Use Consultants (2002) Landscape Character Assessment: Guidance for England and Scotland. Cheltenham, Countryside Agency and Battleby, Scottish Natural Heritage.

Thurrock Borough Council (2015) Local Development Plan – Core Strategy. Thurrock Borough Council, Grays.

Thurrock Borough Council (2017) Thurrock Design Guide: Design Strategy Supplementary Planning Document. Thurrock Borough Council, Grays.

Thurrock Borough Council (undated) Thurrock Landscape Character Assessment (part of the evidence base for the local development framework).

8. Viewpoint, Panorama and Wireline Figures

Figures 3.8 to 3.22: Representative Viewpoints

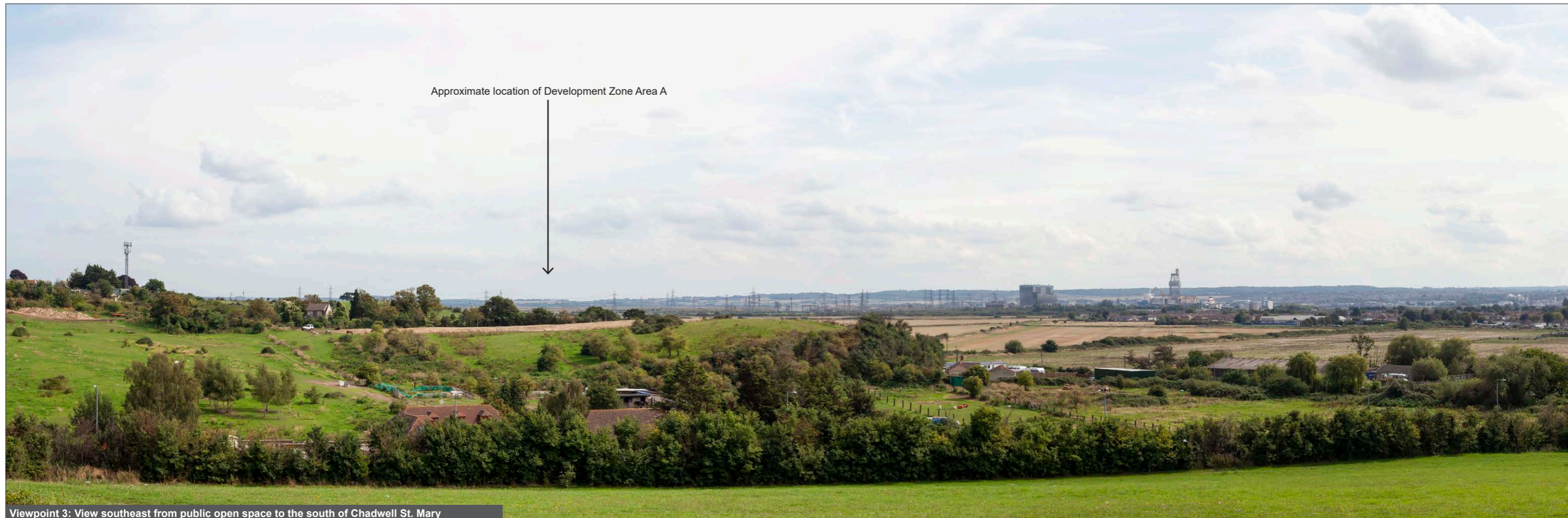


Viewpoint 1: View southwest from publicly accessible roof of the Essex Wildlife Trust Visitor centre

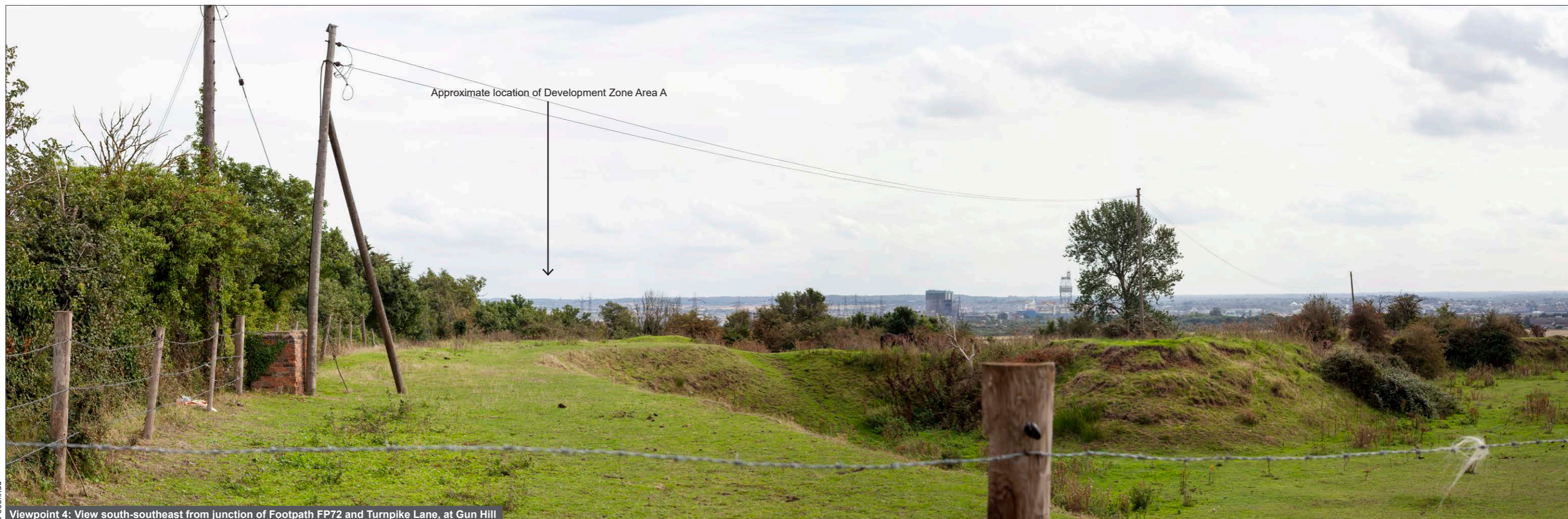


Viewpoint 2: View southwest from junction of Muckingford Road and Footpath 60

Ref: 10872-0030-005.indd

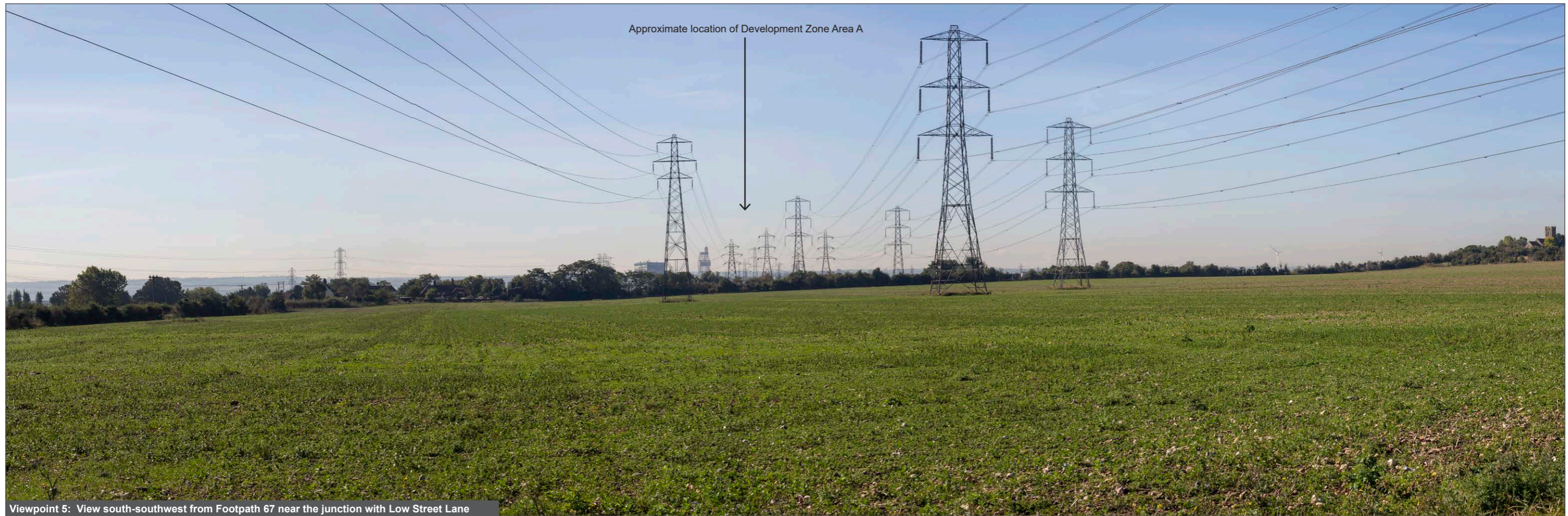


Viewpoint 3: View southeast from public open space to the south of Chadwell St. Mary



Viewpoint 4: View south-southeast from junction of Footpath FP72 and Turnpike Lane, at Gun Hill

Ref: 10872-0030-005.indd



Viewpoint 5: View south-southwest from Footpath 67 near the junction with Low Street Lane

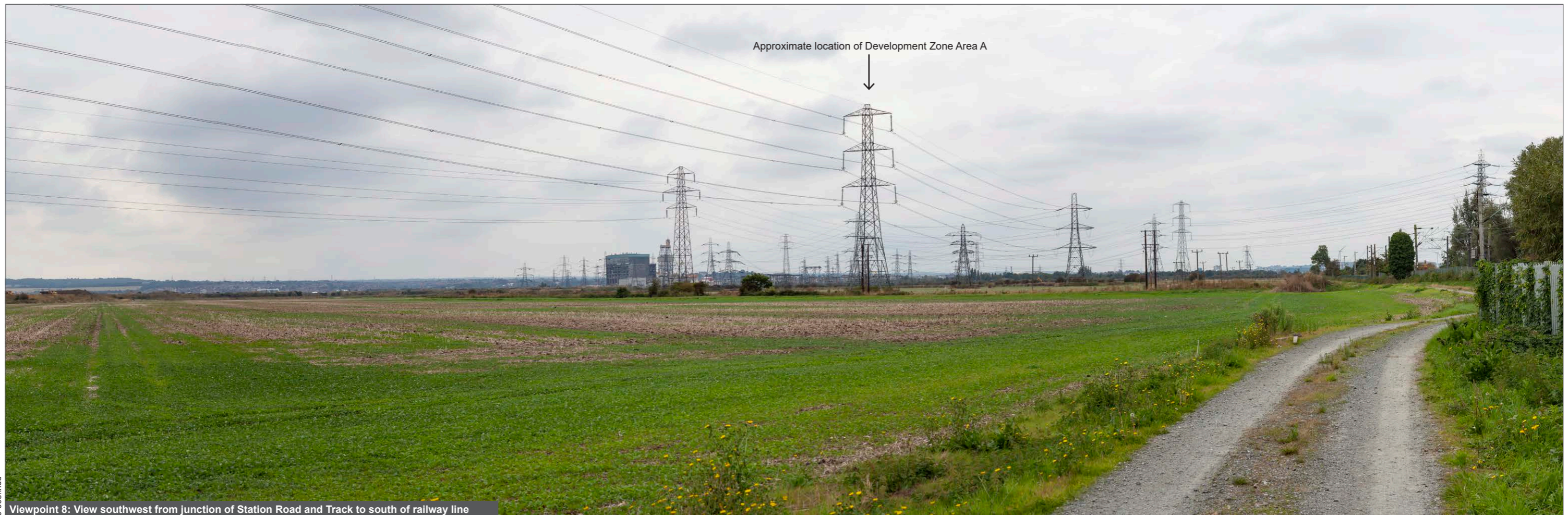


Viewpoint 6: View south from Junction of Gun Hill Lane, Cooper Shaw Road and Fort Road

Ref: 10872-0030-005.indd



Viewpoint 7: View south from the graveyard of St James' Church, West Tilbury

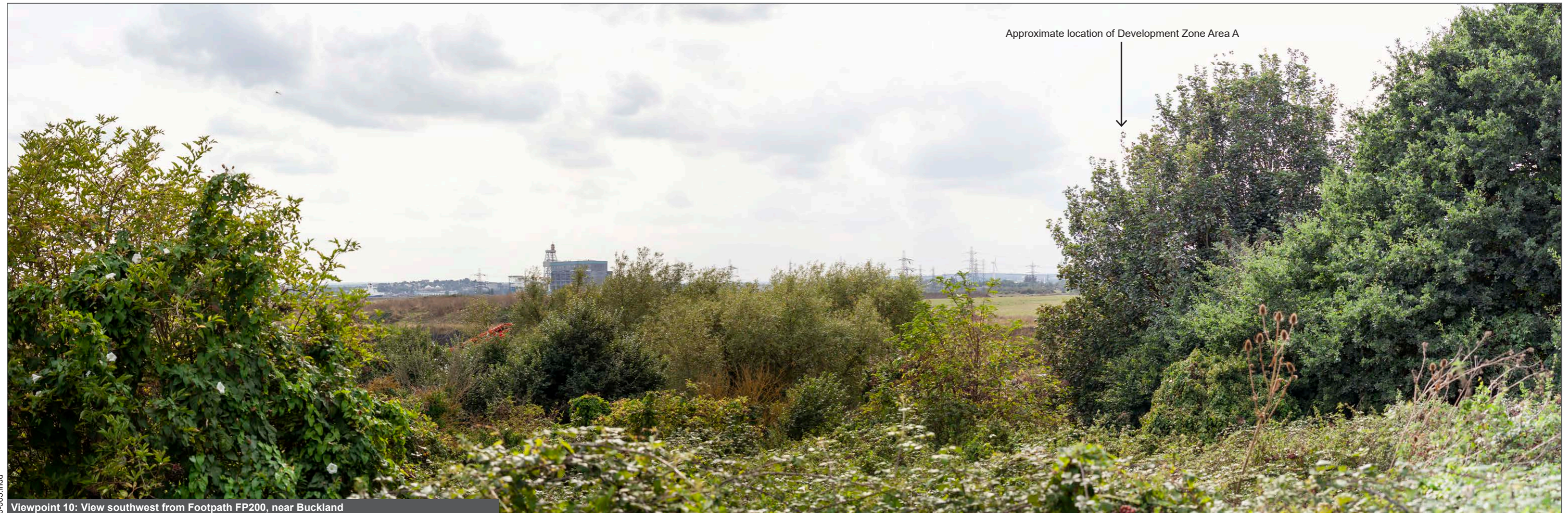


Viewpoint 8: View southwest from junction of Station Road and Track to south of railway line

Ref: 10872-0030-005.indd



Viewpoint 9: View east-southeast from Fort Road to the east of Tilbury



Viewpoint 10: View southwest from Footpath FP200, near Buckland

Ref: 10872-0030-005.indd



Viewpoint 11: View east from Fort Road bridge over railway



Viewpoint 12: View northeast from Footpath 146 adjacent to the sewage treatment works

Ref: 10872-0030-005.indd



Viewpoint 13: View northeast from Byway 98, to the south of Tilbury Fort



Viewpoint 14: View northeast from Byway 98, to the south of Tilbury Fort

Ref: 10872-0030-005.indd



Viewpoint 15: View north-northwest from Thames Estuary Path



Viewpoint 16: View northwest from Thames Estuary Path

Ref: 10872-003-005.indd



Viewpoint 17: View west from the defensive moats at Coalhouse Fort

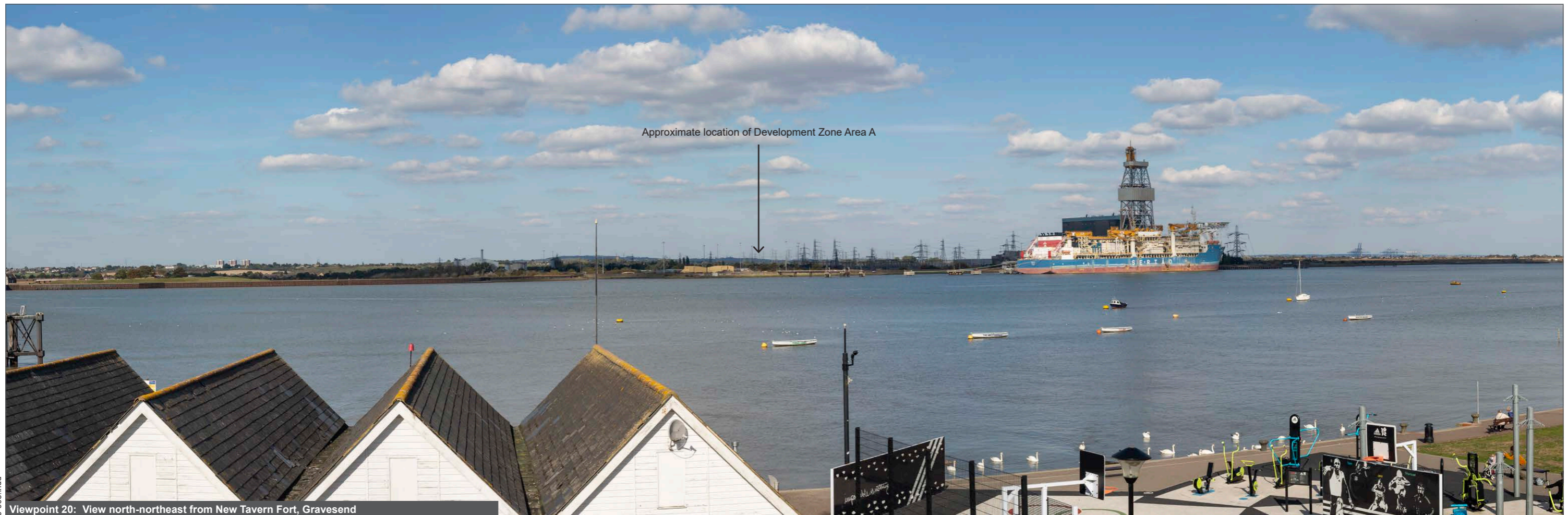


Viewpoint 18: View northeast from raised seating area to west of Town Pier, Gravesend

Ref: 10872-0030-005.indd



Viewpoint 19: View northeast from access ramp to ferry at Town Pier, Gravesend

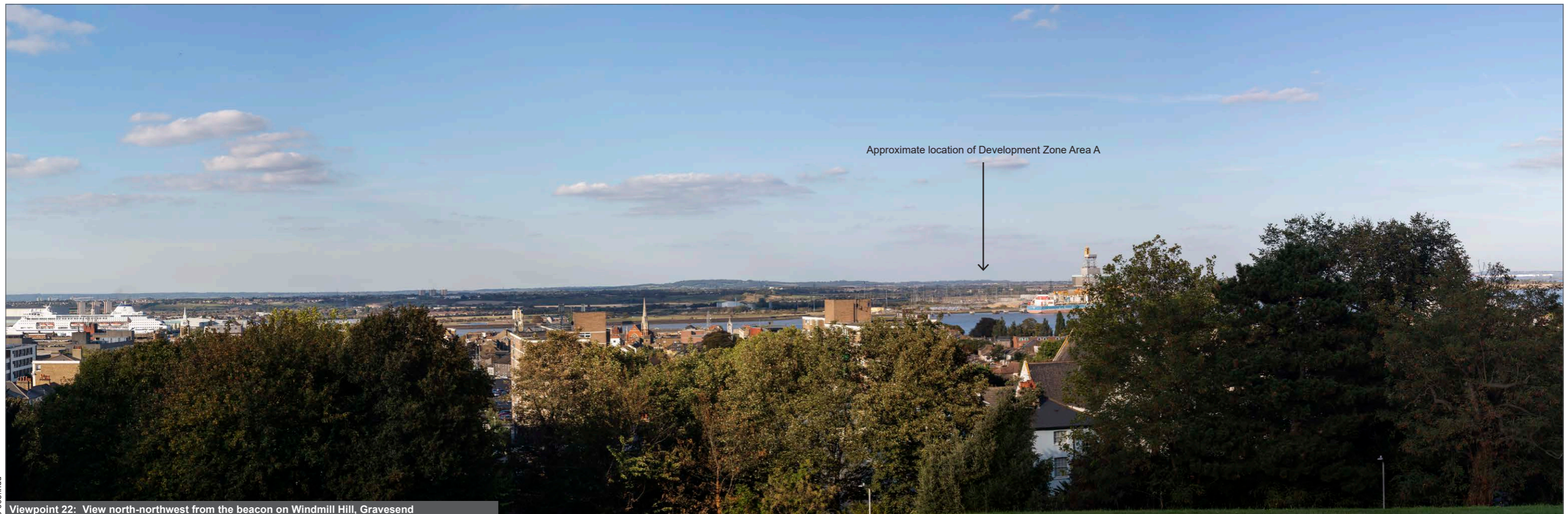


Viewpoint 20: View north-northeast from New Tavern Fort, Gravesend

Ref: 10872-0030-005.indd



Viewpoint 21: View north-northeast from Gordon Promenade, Gravesend



Viewpoint 22: View north-northwest from the beacon on Windmill Hill, Gravesend

Ref: 10872-0030-005.indd



Viewpoint 23: View north-northwest from Saxon Shore Way, north of the police training centre



Viewpoint 24: View northwest from Saxon Shore Way at Shornmead Fort

Ref: 10872-0030-005.indd



Viewpoint 25: View northwest from Saxon Shore Way at Junction of with Footplath NS138



Viewpoint 26: View north-northwest from Saxon Shore Way at Cliffe Fort

Ref: 10872-003-005.indd



Viewpoint 27: View west-southwest from junction of Mead Wall track with path around Hoo Peninsular



Viewpoint 28: View north-northwest from Footpath NG7, to south of Chalk

Ref: 10872-003-005.indd



Viewpoint 29: View north-northwest from minor road, at Brummelhill Wood, on the Kent Downs AONB boundary

Ref: 10872-0030-005.indd



Viewpoint 29 - Date of photographs: 25/09/2018

Lens type: 50mm

Distance to Development Zone Area A: 5.88km

OS reference 567817, 170986

Thurrock Flexible Generation Plant
Figure: 3.22

Figures 3.23 to 3.29: Character Panoramas



Character photograph C1: Development Zone, Area A - Walton Common



Character photograph C2: Development Zone, Area A - eastern Field



Character photograph C3: Development Zone, Area B, Tilbury Substation from Walton Common

Ref: 10872-0046-005.indd



Date of photographs: 04/09/2018
Lens type: 50mm

Thurrock Flexible Generation Plant
Figure: 3.23



Character photograph C4: Development Zone, Area B, Tilbury Substation from Walton Common



Character photograph C5: Development Zone, Area C - View southwest from farm track to south of railway line



Character photograph C6: Development Zone, Area D - View north from corner of field adjacent to Station Road

Ref: 10872-0046-005.indd



Character photograph C7: Development Zone, Area D -View west from Bridleway 58, north of Station Road



Character photograph C8: Development Zone, Area E - View southeast from Station Road



Character photograph C9: Development Zone, Area E - View north from Station Road, opposite Barvills Farm

Ref: 10872-0046-005.indd



Character photograph C10: Development Zone, Area I - View north along Access Land to railway



Character photograph C11: Development Land, Area H - View west from junction of High House Lane and Footpath 78



Character photograph C12: Development Zone, Area H - View west from junction of High House Lane and Footpath 64

Ref: 10872-0046-005.indd



Character photograph C13: Development Zone, Area H - View west from junction of High House Lane and Footpath 65



Character photograph C14: Development Zone, Area H - View north along Turnpike Lane at junction with Footpath 69



Character photograph C15: Development Zone, Area H - View south along Turnpike Lane at junction with Footpath 74



Character photograph C16: Development Zone, Area H - View north from junction of Gun Hill lane, Cooper Shaw Road and Fort Road



Character photograph C17: Development Zone, Area I - View north along Access Land to railway



Character photograph C18: Development Zone, Area J - View southeast from junction of Biggin Lane and Footpath 72

Ref: 10872-0046-005.indd



Character photograph C19: Development Zone, Area J - View south from Biggin Lane

**Figures 4.30 to 4.43: Thurrock Flexible Generation Plant
Wire Lines**



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 30/08/2018
 Lens Type: 50mm

Distance to site: 2.19km
 OS reference: 564469, 178159

Direction to site: southeast
 Viewpoint height: 24.1m AOD

Thurrock FGP Facility

Viewpoint 3
Figure: 4.30



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 07/09/2018
 Lens Type: 50mm

Distance to site: 0.869km
 OS reference: 565739, 177493

Direction to site: southeast
 Viewpoint height: 2.9m AOD

Thurrock FGP Facility

Viewpoint 6
 Figure: 4.31



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 25/09/2018
 Lens Type: 50mm

Distance to site: 0.992km
 OS reference: 566134, 177692

Direction to site: south
 Viewpoint height: 25.68m AOD

Thurrock FGP Facility

Viewpoint 7
 Figure: 4.32



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 04/09/2018
 Lens Type: 50mm

Distance to site: 0.84km
 OS reference: 566911, 177559

Direction to site: southwest
 Viewpoint height: 3.5m AOD

Horizontal field of view: Approx. 75°
 Viewing distance: 300mm @ A3

— Thurrock FGP Facility

Viewpoint 8
Figure: 4.33



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 25/09/2018
 Lens Type: 50mm

Distance to site: 0.68km
 OS reference: 565431, 176817

Direction to site: southeast
 Viewpoint height: 2.85m AOD

— Thurrock FGP Facility

Viewpoint 9
Figure: 4.34



Existing view



Proposed wireline view

Ref: 10872-0047-005

		Date of Photo: 30/08/2018 Lens Type: 50mm	Distance to site: 0.776km OS reference: 565335, 176364	Direction to site: east northeast Viewpoint height: 6.4m AOD	Horizontal field of view: Approx. 75° Viewing distance: 300mm @ A3		Viewpoint 11 Figure: 4.35



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 04/09/2018
 Lens Type: 50mm

Distance to site: 1.093km
 OS reference: 565278,175783

Direction to site: northeast
 Viewpoint height: 4.567m AOD

Horizontal field of view: Approx. 75°
 Viewing distance: 300mm @ A3

— Thurrock FGP Facility

Viewpoint 12
Figure: 4.36



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 04/09/2018
 Lens Type: 50mm

Distance to site: 1.461km
 OS reference: 565269, 175252

Direction to site: northeast
 Viewpoint height: 7.2m AOD

— Thurrock FGP Facility

Viewpoint 14
Figure: 4.37



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 30/08/2018
 Lens Type: 50mm

Distance to site: 1.093km
 OS reference: 566905, 175513

Direction to site: north northwest
 Viewpoint height: 8.8m AOD

Horizontal field of view: Approx. 75°
 Viewing distance: 300mm @ A3

Thurrock FGP Facility

Viewpoint 15
Figure: 4.38



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 05/09/2018
Lens Type: 50mm

Distance to site: 2.31km
OS reference: 564842, 174534

Direction to site: northeast
Viewpoint height: 3.5m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

Thurrock FGP Facility

Viewpoint 19
Figure: 4.39



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 05/09/2018
Lens Type: 50mm

Distance to site: 3.3km
OS reference: 564846, 173387

Direction to site: north northeast
Viewpoint height: 55.85m AOD

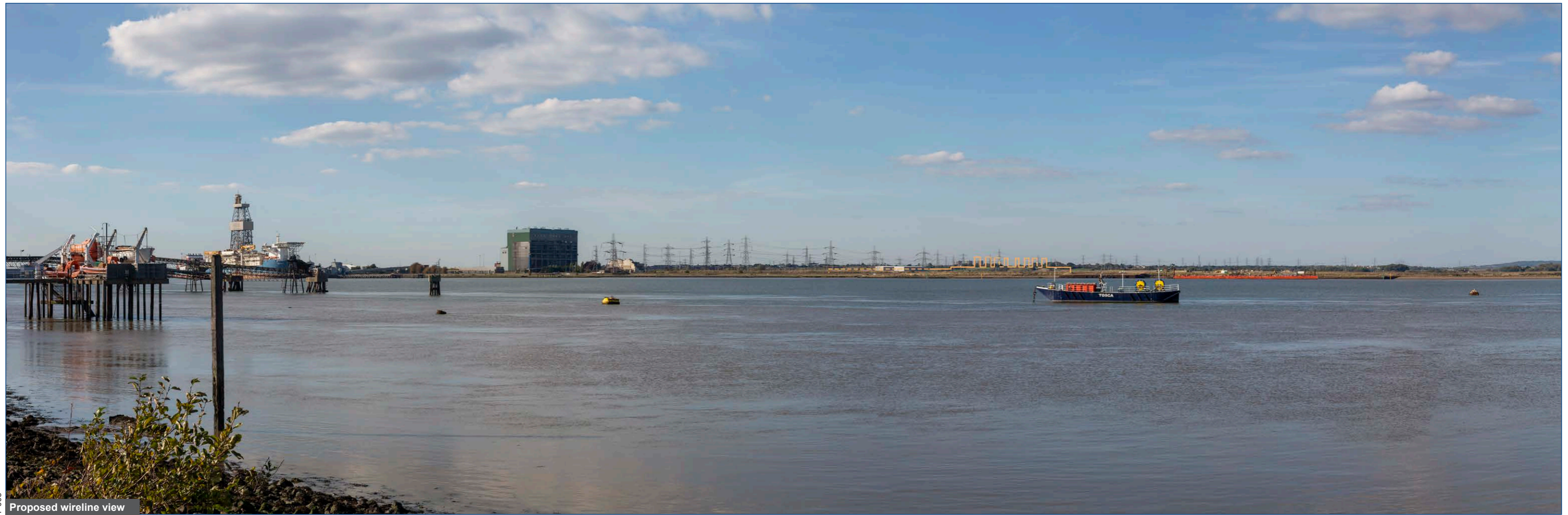
Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

Thurrock FGP Facility

Viewpoint 22
Figure: 4.40



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 25/09/2018
 Lens Type: 50mm

Distance to site: 2.32km
 OS reference: 67307, 174332

Direction to site: northwest
 Viewpoint height: 6.8m AOD

— Thurrock FGP Facility

Viewpoint 23
Figure: 4.41



Existing view



Proposed wireline view

Ref: 10872-0047-005



Date of Photo: 07/09/2018
Lens Type: 50mm

Distance to site: 3.23km
OS reference: 569169, 174825

Direction to site: west northwest
Viewpoint height: 5.25m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

— Thurrock FGP Facility

Viewpoint 24
Figure: 4.42



Existing view



Proposed wireline view

Ref: 10872-0047-005



Photo Date: 05/09/2018
Lens Type: 50mm

Distance to site: 4.18km
OS reference: 570611, 176687

Direction to site: west
Viewpoint height: 6.1m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

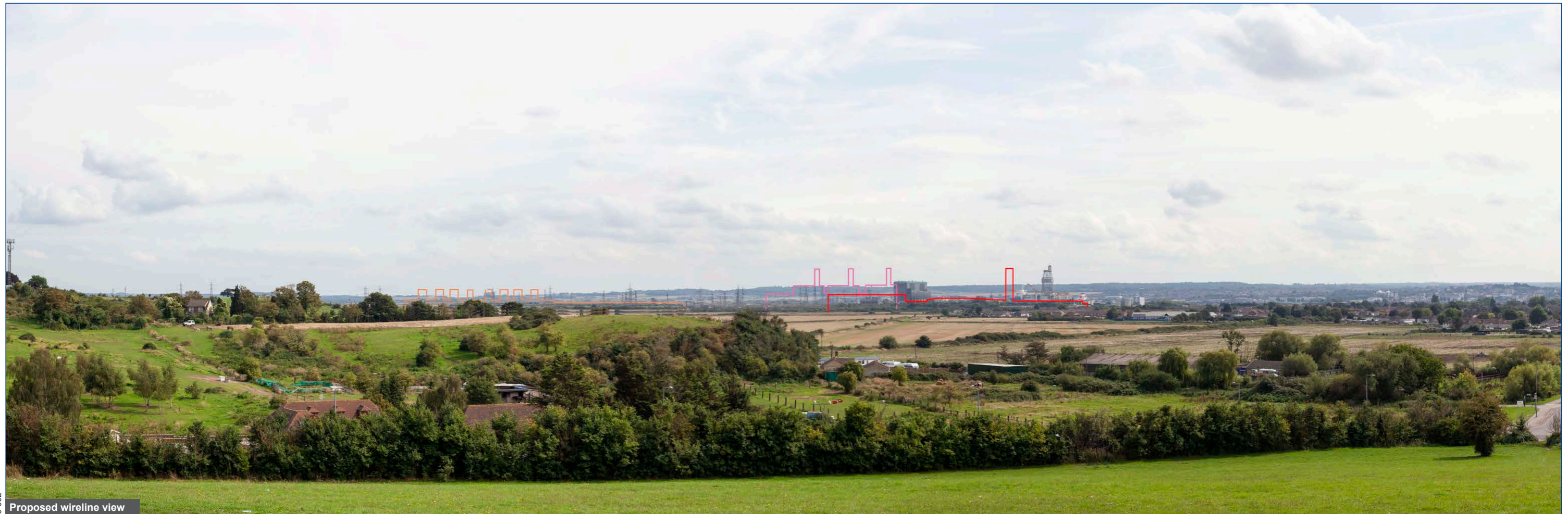
Thurrock FGP Facility

Viewpoint 26
Figure: 4.43

Figures 5.44 to 5.57: Cumulative Wire Lines



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 30/08/2018
Lens Type: 50mm

Distance to site: 2.19km
OS reference: 564469, 178159

Direction to site: southeast
Viewpoint height: 24.1m AOD

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 3
Figure: 5.44



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 07/09/2018
 Lens Type: 50mm

Distance to site: 0.869km
 OS reference: 565739, 177493

Direction to site: southeast
 Viewpoint height: 2.9m AOD

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 6
Figure: 5.45



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 25/09/2018
 Lens Type: 50mm

Distance to site: 0.992km
 OS reference: 566134, 177692

Direction to site: south
 Viewpoint height: 25.68m AOD

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 7
 Figure: 5.46



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 04/09/2018
 Lens Type: 50mm

Distance to site: 0.84km
 OS reference: 566911, 177559

Direction to site: southwest
 Viewpoint height: 3.5m AOD

Horizontal field of view: Approx. 75°
 Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 8
Figure: 5.47



Existing view



Proposed wireline view

Ref: 10872-0109-002

		<p>Date of Photo: 25/09/2018 Lens Type: 50mm</p>	<p>Distance to site: 0.68km OS reference: 65431, 176817</p>	<p>Direction to site: southeast Viewpoint height: 2.85m AOD</p>	<ul style="list-style-type: none"> — Thurrock FGP Facility — Tilbury Energy Centre — Tilbury2 	<p>Viewpoint 9 Figure: 5.48</p>
--	--	--	---	---	---	---



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 30/08/2018
 Lens Type: 50mm

Distance to site: 0.776km
 OS reference: 565335, 176364

Direction to site: east northeast
 Viewpoint height: 6.4m AOD

Horizontal field of view: Approx. 75°
 Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 11
Figure: 5.49



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 04/09/2018
Lens Type: 50mm

Distance to site: 1.093km
OS reference: 565278,175783

Direction to site: northeast
Viewpoint height: 4.567m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 12
Figure 5.50



Existing view



Proposed wireline view

Ref: 10872-0109-002

 	<p>Date of Photo: 04/09/2018 Lens Type: 50mm</p>	<p>Distance to site: 1.461km OS reference: 565269, 175252</p>	<p>Direction to site: northeast Viewpoint height: 7.2m AOD</p>	<ul style="list-style-type: none"> — Thurrock FGP Facility — Tilbury Energy Centre — Tilbury2 	<p>Viewpoint 14 Figure: 5.51</p>
---	--	---	--	--	--



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 30/08/2018
Lens Type: 50mm

Distance to site: 1.093km
OS reference: 566905, 175513

Direction to site: north northwest
Viewpoint height: 8.8m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 15
Figure 5.52



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 05/09/2018
Lens Type: 50mm

Distance to site: 2.31km
OS reference: 564842, 174534

Direction to site: northeast
Viewpoint height: 3.5m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 19
Figure 5.53



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 05/09/2018
Lens Type: 50mm

Distance to site: 3.3km
OS reference: 564846, 173387

Direction to site: north northeast
Viewpoint height: 55.85m AOD

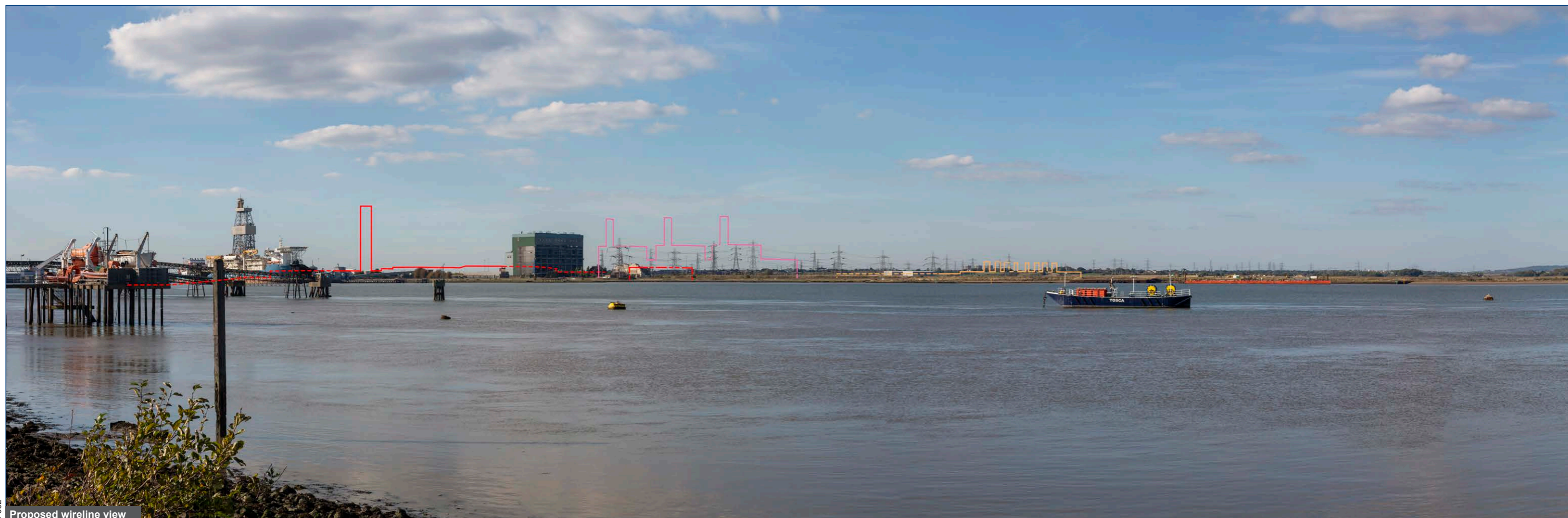
Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 22
Figure: 5.54



Existing view



Proposed wireline view

Ref: 10872-0109-002

 	Date of Photo: 25/09/2018 Lens Type: 50mm	Distance to site: 2.32km OS reference: 67307, 174332	Direction to site: northeast Viewpoint height: 6.8m AOD	 Thurrock FGP Facility  Tilbury Energy Centre  Tilbury2	Viewpoint 23 Figure: 5.55
---	--	---	--	--	--



Existing view



Proposed wireline view

Ref: 10872-0109-002



Date of Photo: 07/09/2018
Lens Type: 50mm

Distance to site: 3.23km
OS reference: 569169, 174825

Direction to site: west northwest
Viewpoint height: 5.25m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 24
Figure 5.56



Existing view



Proposed wireline view

Ref: 10872-0109-002



Photo Date: 05/09/2018
Lens Type: 50mm

Distance to site: 4.18km
OS reference: 570611, 176687

Direction to site: west
Viewpoint height: 6.1m AOD

Horizontal field of view: Approx. 75°
Viewing distance: 300mm @ A3

- Thurrock FGP Facility
- Tilbury Energy Centre
- Tilbury2

Viewpoint 26
Figure: 5.57