Thurrock Flexible Generation Plant

Preliminary Environmental Information Report
Chapter 4: Environmental Impact Assessment Methodology

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Environmental Impact Assessment

Preliminary Environmental Information Report

Volume 2

Chapter 5

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Summary

This chapter describes the principles of the EIA process and the approach that has been taken to identify and evaluate the likely impacts and, subsequently, evaluate the significance of effects associated with Thurrock Flexible Generation Plant.

Qualifications

This document has been prepared by Natalie Brisland BSc (Hons), a Senior Consultant who has five years’ experience of planning consultancy and environmental impact assessment.

It has been checked by Tom Dearing, a Chartered Environmentalist and full Member of the Institute of Environmental Management and Assessment, who has eight years’ experience of environmental impact assessment.

1. Introduction

1.1 Overview

1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) sets out the principles of the environmental assessment process undertaken to date. It details the approach that has been taken to identify and evaluate the likely impacts and significance of effects associated with Thurrock Flexible Generation Plant.

1.1.2 This PEIR sets out the current findings of the Environmental Impact Assessment (EIA) process. Following consultation, an Environmental Statement (ES) will be submitted with the application for development consent, which will set out the final conclusions of the EIA process, based on the methodology and principles set out in this chapter. The EIA process that forms the basis of this PEIR (and the subsequent ES), has been undertaken with reference to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended.

1.1.3 Further details of the topic-specific methodologies (e.g. survey methodologies) are provided in each relevant topic chapter in Volume 3 of this PEIR.

1.2 Environmental Impact Assessment legislation and guidance

1.2.1 The impact assessment methodology employed in this PEIR draws upon legislation, policy and guidance including:

- Council Directive 2011/92/EU of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (the EIA Directive), as amended by Council Directive 2014/52/EU;
- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended);
- Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change (DECC), 2011a);
- National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2) (DECC, 2011b);
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (DECC, 2011c);
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (DECC, 2011d);
- Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping (PINS, 2017);
- Advice Note Nine: Rochdale Envelope (PINS, 2018a);
- Advice Note Twelve: Transboundary Impacts and Process (PINS, 2018b);
- Advice Note Seventeen: Cumulative Effects Assessment (PINS, 2015);
- Highways Agency *et al.* (2008) Design Manual for Roads and Bridges, Volume 11, Section 2, Part 5. HA 205/08;
- Other guidance in relation to the principles of EIA, including:
    - Department of the Environment, Transport and the Regions (DETR) (1997) Mitigation Measures in Environmental Statements. HMSO;
    - Institute of Environmental Management and Assessment (2004) Guidelines for Environmental Impact Assessment;
    - Institute of Environmental Management and Assessment (2011) The State of Environmental Impact Assessment Practice in the UK. Special Report;
    - Institute of Environmental Management and Assessment (2015a) Environmental Impact Assessment Guide to Shaping Quality Development;
    - Institute of Environmental Management and Assessment (2015b) Climate Change Resilience and Adaptation; and
    - Institute of Environmental Management and Assessment (2016) Guide to Delivering Quality Development.

1.2.2 Further details regarding the legislative context of the assessments undertaken in this ES are provided in Volume 2, Chapter 1: Introduction.

2. Key principles of assessment for Thurrock Flexible Generation Plant

2.1 Overview

2.1.1 The assessment for each environmental topic forms a separate chapter of this PEIR (Volume 3, Chapters 6 to 16). For each topic chapter the following components have been set out:

- identification of the study area for the topic specific assessments;
- description of the planning policy and guidance context;
- summary of consultation activity undertaken to date, including comments received in the Scoping Opinion;
- description of the approach to assessment, including details of the methodologies used;
- description of the baseline environmental conditions;
- presentation of the impact assessment undertaken to date, which includes:
  - identification of the maximum design scenario for each impact assessment;
  - a description of the measures adopted as part of the design of the proposed development, including mitigation and design measures which seek to prevent, reduce or offset environmental effects;
  - an assessment of the likely impacts and effects associated with the proposed development;
  - identification of any further mitigation measures required in respect of likely significant effects (in addition to those measures adopted as part of the project design);
  - identification of any future monitoring required; and
  - assessment of any cumulative effects with other major developments.

2.1.2 Inter-related effects (i.e. inter-relationships between environmental topic areas) are assessed in Volume 4, Chapter 17: Summary of Inter-related Effects.

2.2 Methodology and assessment criteria

2.2.1 Each topic chapter provides details of the methodology for baseline data collection and the approach to the assessment of effects. Each environmental topic has been considered by a specialist in that area.

2.2.2 Each topic chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken and the approach to the assessment of effects. The identification and evaluation of effects have been based on the information set out in Volume 2, Chapter 2: Project Description of this PEIR, environmental assessment good practice guidance documents and relevant topic-specific guidance where available.

2.3 Description of the environmental baseline conditions (Including future baseline conditions)

2.3.1 The existing and likely future environmental conditions in the absence of the proposed development are known as ‘baseline conditions’. Each topic based chapter includes a description of the current (baseline) environmental conditions. The baseline conditions at the site and within the study area form the basis of the assessment, enabling the likely significant effects to be identified through a comparison with the baseline conditions.

2.3.2 An evidence-based approach to environmental assessment has been used, which involves utilising existing data and information from sufficiently similar or analogous studies to inform baseline understanding and/or impact assessments. In this way, the evidence based approach does not always require new data to be collected, or new modelling studies to be undertaken, in order to characterise the potential impact with sufficient confidence for the purposes of assessment.

2.3.3 Where relevant, each topic chapter of this PEIR (Volume 3, Chapters 6 to 16) sets out:

- the data that have been obtained from previous studies as well as publicly available desktop data sources, in defining the baseline environment; and
- where it is necessary, a description of additional data that have been collected in order to inform the impact assessment.

2.3.4 The baseline for the assessment of environmental effects is primarily drawn from existing conditions during the main period of the assessment work during 2018.

2.3.5 The baseline for the assessment should represent the conditions that will exist in the absence of the proposed development at the time that the development is likely to be implemented. The anticipated start date for construction is 2021, with enabling works likely to occur in 2020. The programme would be of up to six years duration. Further information about the construction programme assessed can be found in Volume 2, Chapter 2: Project Description of this PEIR.

2.3.6 Consideration has been given to any likely changes between the time of survey and the future baseline for the construction and operation of the proposed development. In some cases, these changes may include the construction or operation of other planned developments in the area. Where such developments are built and operational at the time of writing and data collection, these have been considered to form part of the baseline environment. Where sufficient and robust information is available other future developments have been considered as part of the future baseline conditions. In all other cases, planned future developments are considered within the assessment of cumulative effects.

2.3.7 The consideration of future baseline conditions has also taken into account the likely effects of climate change, as far as these are known at the time of writing. This has been based on information available from the UK Climate Projections project (UKCP09), which provides information on plausible changes in climate for the UK (Environment Agency and Met Office, 2016) and on published documents such as the UK Climate Change Risk Assessment 2017 (Committee on Climate Change, 2016).

Limitations

2.3.8 Each topic chapter identifies any limitations identified in the available baseline data and whether there were any difficulties encountered in compiling the information required.

2.4 Measures envisaged to prevent, reduce and where possible offset significant adverse effects

Introduction

2.4.1 Regulation 14(2) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (hereafter referred to as the EIA Regulations 2017 as amended) requires a PEIR to include *"A description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment*".

2.4.2 The iterative approach to assessment employed for Thurrock Generation Plant, the interim findings of which are reported in this PEIR, involves a feedback loop during the impact assessment process. This is shown on Figure 2.1 below. A specific impact, and the significance of the resulting effect, is initially assessed and, if this is deemed to be a significant adverse effect in terms of the EIA Regulations, changes are made (where practicable) to relevant parameters or design of the proposed development in order to avoid, reduce or offset the impact. The assessment is then repeated and the process continues until the EIA practitioner is satisfied that:

- the effect has been reduced to a level that is not significant in terms of the EIA Regulations; or
- having regard to other constraints, no further changes may be made to design parameters in order to reduce the magnitude of impact (and hence significance of effect). In such cases, an overall effect that is still significant in terms of the EIA Regulations may be presented in the PEIR/subsequent ES.

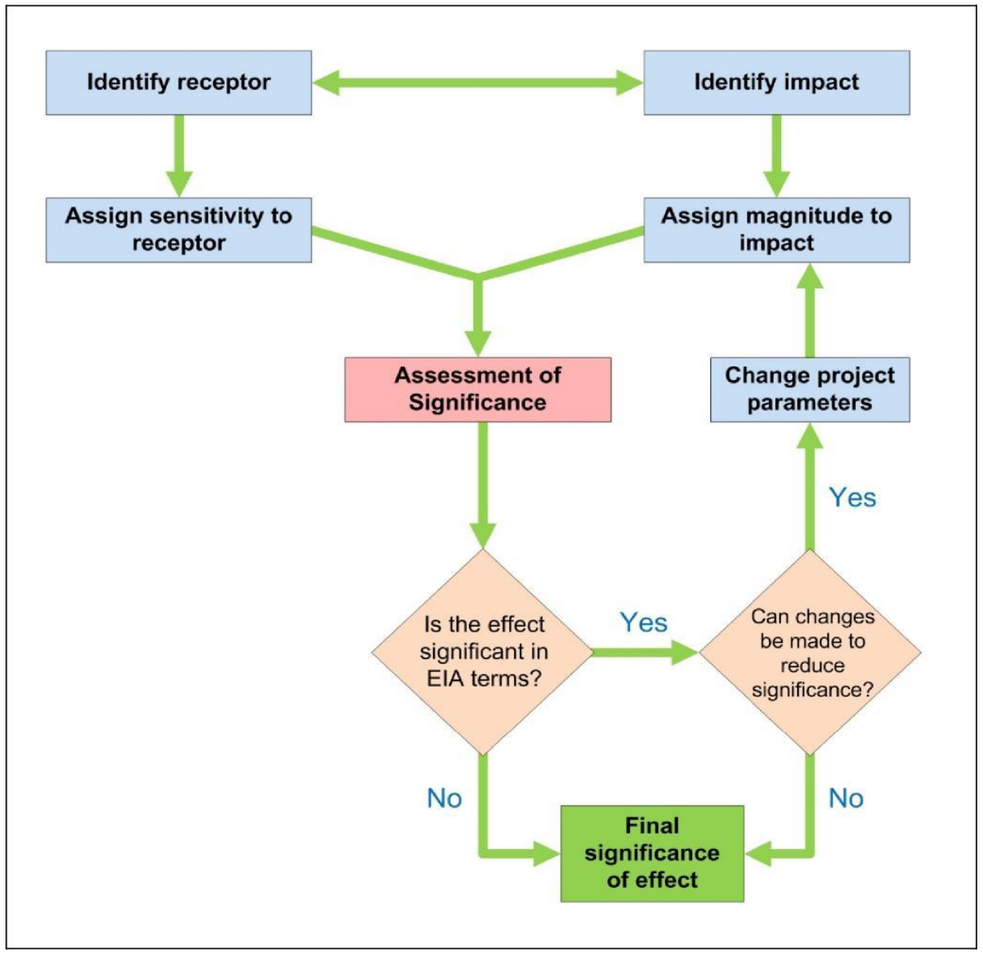

Figure 2.1: Iterative approach to measures adopted as part of the project within the Thurrock Flexible Generation Plant

Measures adopted as part of the project

2.4.3 The iterative approach to the assessment process, as described in paragraph 2.4.2 above, has been used as a means of informing the design of the proposed development (through the identification of likely significant effects and development of mitigation measures to address these). The incorporation of such measures within the design of the proposed development demonstrates commitment to implementing the identified measures.

2.4.4 By employing this approach, the significance of effect presented in the PEIR and subsequent ES is representative of the maximum residual effect that the project will have, should it be approved and constructed.

2.4.5 Volume 5, Appendix 2.1: Enhancement, Mitigation and Monitoring Commitments will set out a summary of the enhancement measures and mitigation commitments (including measures adopted as part of the proposed development) in the ES produced following consultation. The means of implementation will be specified for each of the commitments.

2.5 Identification of impacts and the assessment of significance of effects

Scope of impact assessment

2.5.1 Taking into account the nature, size and location of the proposed development (see Volume 2, Chapter 2: Project Description), the information provided in the scoping report and other consultation responses provided throughout the EIA process, the following topics have been identified as requiring consideration within this ES:

- Landscape and Visual Resources (Volume 3, Chapter 6);
- Historic Environment (Volume 3, Chapter 7);
- Land Use, Agriculture and Socio-Economics (Volume 3, Chapter 8);
- Ecology (Volume 3, Chapter 9);
- Traffic and Transport (Volume 3, Chapter 10);
- Noise and Vibration (Volume 3, Chapter 11);
- Air Quality (Volume 3, Chapter 12);
- Human Health (Volume 3, Chapter 13);
- Climate Change (Volume 3, Chapter 14);
- Hydrology and Flood Risk (Volume 3, Chapter 15); and
- Geology, Hydrogeology and Ground Conditions (Volume 3, Chapter 16).

2.5.2 A number of impacts have been scoped out based on the baseline information that has been collected. Further details are provided in Volume 2, Chapter 5: Scoping and Consultation and within each of the topic chapters.

Maximum design scenario

2.5.3 The assessment undertaken to date for the Thurrock Flexible Generation Plant has employed a maximum design scenario (Rochdale Envelope) approach. This approach allows for a proposed development to be assessed on the basis of maximum project design parameters in order to provide flexibility, while ensuring all potentially significant effects (adverse or beneficial) are assessed and reported. Those parameters include a range of potential values. The maximum design scenario approach employed for Thurrock Flexible Generation Plant is consistent with the Planning Inspectorate's (PINS) Advice Note Nine: Using the Rochdale Envelope (PINS, 2018a). Further details of the legislative context of this approach are included in Volume 2, Chapter 2: Project Description.

2.5.4 This approach has been taken for the assessment because it is not possible to provide precise final design details of the proposed development, or the way it will be built, a number of years ahead of the time it will be constructed. Improvements in technology and construction methodologies occur frequently and an unnecessarily prescriptive approach could preclude the adoption of new, more cost-effective technology and methods, potentially affecting the viability of a project. Volume 2, Chapter 2: Project Description describes the project design and identifies the range of potential parameters for all relevant components.

2.5.5 For each of the impacts assessed within the topic chapters (Volume 3: Chapters 6 to 16), the maximum design scenario is identified from the range of potential options for each parameter within Volume 2, Chapter 2: Project Description. The maximum design scenario assessed is therefore the scenario which would give rise to the greatest potential impact. For example, the size of the buildings proposed would be of the maximum dimensions required. By identifying the maximum design scenario for any given impact, it can therefore be concluded that the impact (and therefore the effect) will be no greater for any other design scenario than that assessed for the maximum design scenario. By employing the maximum design scenario approach, the Applicant retains some flexibility in the final design of the plant and associated infrastructure, but within defined maximum parameters, which are assessed in this PEIR.

Sensitivity or importance of receptors

2.5.6 Receptors are defined as the physical or biological resource or user group that would be affected by a project. For each topic, baseline studies have informed the identification of potential environmental receptors. Some receptors will be more sensitive to certain environmental effects than others. The sensitivity or value of a receptor may depend, for example, on its frequency, extent of occurrence or conservation status at an international, national, regional or local level.

2.5.7 Sensitivity is defined within each topic chapter of this PEIR and takes into account factors including the:

- vulnerability of the receptor;
- recoverability of the receptor; and
- value/importance of the receptor.

2.5.8 Sensitivity is generally described using the following scale:

- high;
- medium;
- low; and
- negligible.

2.5.9 In some cases, a further category of very high has been used.

2.5.10 An example of the definitions for each of these categories is set out in Table 2.1. These definitions have been adapted from the DMRB (Highways Agency *et. al.,* 2008). Topic-specific definitions for each of these categories are provided in each of the topic chapters. The value of a receptor for each topic draws upon relevant topic specific guidance and material, including specialist knowledge, which is relevant to that topic.

Table 2.1: Definition of terms relating to the environmental value (sensitivity)

Value (sensitivity of the receptor)	Description
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale and limited potential for substitution.
Medium	High or medium importance and rarity, regional scale, limited potential for substitution.
Low	Low or medium importance and rarity, local scale.
Negligible	Very low importance and rarity, local scale.

Magnitude of impact

2.5.11 Impacts are defined as the physical changes to the environment attributable to the project. For each topic, the likely environmental impacts have been identified. For each topic the likely environmental change arising from the proposed development has been identified and compared with the baseline (the situation without the proposed development). Impacts are divided into those occurring during the construction and operational phases.

2.5.12 The categorisation of the magnitude of impact is topic-specific but generally takes into account factors such as:

- extent;
- duration;
- frequency; and
- reversibility.

2.5.13 With respect to the duration of impacts, the following has been used as a guide within this assessment, unless defined separately within the topic assessments:

- short term: a period of months, up to one year
- medium term: a period of more than one year, up to five years; and
- long term: a period of greater than five years.

2.5.14 The magnitude of an impact has generally been defined used the following scale:

- major;
- moderate;
- minor; or
- negligible.

2.5.15 In some cases, a further category of 'no change' has been used.

2.5.16 An example of the definitions for each of these categories is set out in Table 2.2 below. The table describes both adverse and beneficial magnitudes of change. These definitions have been adapted from the DMRB (Highways Agency *et. al.*, 2008). Topic specific definitions for each of these categories are provided in each topic chapter. The design of these topic specific scales drawls upon relevant external policy, guidance, standards and other material, including specialist knowledge, which is relevant to that topic.

Table 2.2: Definition of terms relating to the magnitude of impacts

Magnitude of impact	Description
Major	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (adverse)
	Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (beneficial)
Moderate	Loss of resource, but not adversely affecting integrity of resource; partial loss of/damage to key characteristics, features or elements (adverse)
	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (beneficial)
Minor	Some measurable change in attributes, quality or vulnerability, minor loss of, or alteration to, one (maybe more) key characteristics, features or elements (adverse)
	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (beneficial)
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (adverse)
	Very minor benefit to, or positive addition of one or more characteristics, features or elements (beneficial)
No change	No loss or alternation of characteristics, features or elements; no observable impact in either direction

Significance of effects

2.5.17 Effect is the term used to express the consequence of an impact (expressed as the 'significance of effect'). This is identified by considering the magnitude of the impact and the sensitivity or value of the receptor.

2.5.18 The magnitude of an impact does not directly translate into significance of effect. For example, a significant effect may arise as a result of a relatively modest impact on a resource of national value, or a large impact on a resource of local value. In broad terms, therefore, the significance of the effect can depend on both the impact magnitude and the sensitivity or importance of the receptor.

2.5.19 In order to ensure a transparent and consistent approach throughout the assessment, a matrix approach has been adopted as a guide. There is, however, latitude for professional judgement where deemed appropriate in the application of the matrix. Where the matrix offers a choice of significance levels, professional judgement has been used to determine the most likely outcome. An example of the matrix used to inform the topic-specific methodologies in each topic is set out in Table 2.3. This matrix has been adapted from the DMRB (Highways Agency *et al.,* 2008).

Table 2.3: Matrix used for the assessment of significance of effect

		Magnitude of Impact				
Sensitivity of Receptor		**No Change**	**Negligible**	**Minor**	**Moderate**	**Major**
	Negligible	Negligible	Negligible	Negligible or minor	Negligible or minor	Minor
	Low	Negligible	Negligible or minor	Negligible or minor	Minor	Minor or Moderate
	Medium	Negligible	Negligible or minor	Minor	Moderate	Moderate or Major
	High	Negligible	Minor	Minor or Moderate	Moderate or Major	Major or Substantial
	Very High	Negligible	Minor	Moderate or Major	Major or Substantial	Substantial
The final significance of effect is based upon the expert's professional judgement as to which outcome delineates the most likely effect, with an explanation as to why this is the case.						

2.5.20 Except where otherwise set out, a significance of effect of moderate or greater is considered 'significant' in terms of the EIA Regulations.

2.5.21 In cases where a range is suggested for the significance of effect, there remains the possibility that this may span the significance threshold (i.e. the range is given as minor to moderate). In such cases the final significance is based upon the expert's professional judgement as to which outcome delineates the most likely effect, with an explanation as to why this is the case.

2.5.22 The definitions for each of the significance levels are shown in Table 2.4.

Table 2.4: Definition of significance levels

Significance Level	Definition (Highways Agency *et. al*, 2008)
Negligible	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
Minor	These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project.
Moderate	These beneficial or adverse effects have the potential to be important and may influence the decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse or beneficial effect on a particular resource or receptor.
Major	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Substantial	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category. Effects upon human receptors may also be attributed this level of significance.

Further mitigation and future monitoring

2.5.23 In select cases, further mitigation measures have been outlined after the assessment of significance within the topic chapters (Volume 3: Chapters 6 to 16). These select cases are where:

- an effect is considered significant in terms of the EIA Regulations, when already including designed-in mitigation measures, and there are additional mitigation measures that could further reduce the level of effect; and/or
- mitigation has been proposed but has not yet been confirmed as feasible or deliverable (i.e. awaiting sign-off from regulators, stakeholders etc.) as agreed mitigation, or is as yet unproven (i.e. the mitigation is not yet proven to be effective at reducing the residual significance of effect).

2.5.24 Volume 5, Appendix 2.1: Enhancement, Mitigation and Monitoring Commitments will set out a summary of the enhancement measures and mitigation commitments (including measures adopted as part of the proposed development) in the ES produced following consultation. The means of implementation will be specified for each of the commitments.

2.5.25 Where relevant and necessary, future monitoring measures have been set out within the topic chapters.

Residual effects

2.5.26 Residual effects are defined as the effects remaining once all further mitigation measures have been taken into consideration. Following the identification of further mitigation measures as described above, the assessment re-evaluates the significance of effect.

3. Cumulative effects assessment

3.1 Introduction

3.1.1 Cumulative effects result from multiple actions on receptors or resources occurring in combination over time. This includes the assessment of effects of the proposed development together with other proposed (but not yet built) developments, where there is the potential for impacts to overlap spatially or temporally.

3.2 Legislation and guidance

Legislation

3.2.1 The EIA Regulations require the PEIR and subsequent ES to consider cumulative effects. Cumulative effects result from multiple actions on receptors and resources over time and are generally additive or interactive (synergistic) in nature. Cumulative impacts can also be considered as:

"…impacts resulting from incremental changes caused by other past, present or reasonably foreseeable actions together with the project." (European Commission, 1999)"

Guidance

3.2.2 A range of guidance is available on cumulative effects assessment (CEA) but at present there is no single, agreed industry standard method. Relevant guidance taken into account in this assessment is as follows:

- Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects (Planning Inspectorate, 2015) and
- Advice Note Nine: Using the Rochdale Envelope (Planning Inspectorate, 2018a).

3.2.3 Planning Inspectorate Advice Note 17 (Planning Inspectorate, 2015) provides a clear and systematic approach to cumulative effects assessment. This guidance identifies a wide range of other proposed developments to be taken into account in CEA, as set out below:

- under construction;
- permitted applications not yet implemented;
- submitted applications not yet determined;
- planning applications where a scoping report has been submitted;
- projects on the planning register where a scoping report has been submitted;
- sites identified in the relevant Local Development Plans (and emerging Local Development Plans – with appropriate weight being given as they move closer to adoption); and
- other plans and programmes (as appropriate) which set the framework for future development consent/approval, where such development is reasonably likely to come forward.

3.3 Approach to the assessment of cumulative effects

3.3.1 The approach taken within this assessment for the assessment of effects follows the guidance published by the Planning Inspectorate (2015) and centres on screening other proposed developments within the zone of influence of the proposed development. The activities have included the following:

- undertake a desk study and review baseline data/initial assessment findings for each topic to establish the zone of influence of the proposed development;
- set out the other developments in a matrix detailing the key information, including consideration of the level of certainty associated with the proposed development;
- consult with the relevant planning authorities and statutory consultees regarding the list of 'other developments';
- gather information regarding the 'other developments' to inform the CEA;
- review each of the 'other developments' in turn to assess whether cumulative effects may arise;
- identify mitigation measures in relation to adverse cumulative effects and document the means of delivering the mitigation; and
- consider the apportionment of effect between the Thurrock Flexible Generation Plant and the 'other developments' e.g. the contribution to the effect demonstrably related to one development or is there an equal contribution from either development.

3.3.2 The types of other development considered are set out below. The key difficulties in any cumulative effects assessment relate to the level of detail available in relation to other proposed developments and the reliance needs to be made on environmental assessment carried out by others. For those applications at earlier stages of development or those for which EIA has not been undertaken, professional judgement and knowledge of the study area has been employed to consider the receptors or resources that may be affected by the Thurrock Flexible Generation Plant and the other developments in question.

Table 3.1: Tiers for 'other developments' to be included in the CEA

Tier	Description	
Tier 1	Under construction (however, where projects are expected to be completed before construction of the Scheme and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline).	Decreasing level of detail likely to be available
	Permitted application(s) but not yet implemented.	
	Submitted applications but not yet determined.	
Tier 2	Planning applications where a scoping report has been submitted.	
Tier 3	Projects on the planning register where a scoping report has not been submitted.	
	Sites identified in the relevant Local Development Plans (and emerging Local Development Plans – with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposal will be limited.	
	Other plans and programmes (as appropriate) which set the framework for future development consent/approval, where such development is reasonably likely to come forward.	

3.3.3 Further details of the other proposed developments identified for consideration in the CEA process and the approach to assessment are provided in Volume 5, Appendix 4.1: Cumulative Developments and Screening.

Assessment criteria and assignment of significance

3.3.4 The assessment does not aim to assign significance levels. Instead the assessment is to be used to identify where there is the potential for cumulative effects to occur and to provide details of whether cumulative effects are likely to be significant. A statement is made as to whether the cumulative effect would be worse or better than the effects predicted for the Thurrock Flexible Generation Plant alone, whether the cumulative effects have the potential to be more significant than the effects of the Thurrock Flexible Generation Plant alone and, if so, whether this would be adverse or beneficial.

3.3.5 The findings of the CEA process are set out within each topic chapter of this PEIR and are summarised in Volume 4, Chapter 18: Summary of Cumulative Effects.

4. Inter-related effects

4.1 Inter-related effects guidance

4.1.1 It is good practice to consider the inter-relationships between topics that may lead to environmental effects. For example, the separate impacts of noise and habitat loss may have an effect upon a single ecological receptor.

4.1.2 The approach presented in this PEIR has been developed with specific regard to PINS Rochdale Envelope Advice Note (Advice Note Nine) (PINS, 2018a), which states that:

"Inter-relationships consider impacts of the proposals on the same receptor. These occur where a number of separate impacts, (e.g. noise and air quality), affect a single receptor such as fauna."

4.2 Approach to assessment of inter-related effects

4.2.1 The assessment of potential inter-related effects has been carried out concurrently considering two levels of potential effect:

- project lifetime effects: effects that occur throughout more than one phase of the proposed development (construction, operational and decommissioning) interacting to potentially create a more significant effect upon a receptor than if just assessed in isolation in a single phase; and
- receptor-led effects: effects that interact spatially and/or temporally resulting in inter-related effects upon a single receptor. For example, the effect upon habitat loss or disturbance may be greater when multiple sources of impact interact or combine to produce a different or greater effect upon this receptor than when single sources of impact are considered in isolation. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

4.2.2 The assessment of inter-related effects within the Thurrock Flexible Generation Plant environmental assessment process has been undertaken with specific reference to the potential for such effects to arise in relation to key receptors or receptor groups. A descriptive assessment is included outlining the potential for individual effects to combine, incorporating qualitative and, where reasonably possible, quantitative assessments, to potentially create additional effects that may be of greater significance than the individual effects acting in isolation.

4.2.3 The term 'receptor group' is used to highlight the fact that the proposed approach to inter-relationships assessment will, in the main, not assess every individual receptor assessed at the EIA stage, but rather potentially sensitive groups of receptors.

4.2.4 These receptor groups are explained in the relevant topic chapters (Volume 3, Chapters 6 to 16) and are summarised in Volume 4, Chapter 17: Summary of Inter-related Effects.

4.2.5 The approach for assessing the potential inter-related effects on each 'receptor group' follows the key steps below:

- review of the PEIR topic chapters undertaken to identify receptor groups requiring assessment and the likely effects on each receptor group;
- assessment undertaken on how individual effects may combine to create inter-related effects on each receptor group for:
    - during construction, operational and decommissioning phases (i.e. 'project lifetime effects'); and
    - multiple effects on a single receptor (i.e. 'receptor-led effects').

4.2.6 Where the significance of an effect within the topic-specific assessment has been identified as 'no effect' across all stages of the proposed development, the assumption has been made that these effects can not contribute to any inter-related effects. In determining the boundaries of the inter-related assessment, these effects are omitted from the inter-related effects assessment due to there being no effect from the Thurrock Flexible Generation Plant over the life time of the proposed development.

4.2.7 It is important to note that the inter-relationships assessment considers only effects produced by Thurrock Flexible Generation Plant and not those from other projects (which are considered within the CEA).

5. Transboundary effects

5.1.1 Transboundary effects arise when development within one European Economic Area (EEA) state affects the environment of another EEA state(s).

5.1.2 The need to consider such transboundary effects has been embodied by the United Nations Economic Commission for Europe (UNECE) Convention on EIA in a Transboundary Context, adopted in 1991 in the Finnish city of Espoo and commonly referred to as the 'Espoo Convention'. The Convention requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary impacts.

5.1.3 The Espoo Convention has been implemented by the EIA Directive and transposed into UK law under the EIA Regulations. Regulation 32 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended, requires that where the Secretary of State is of a view that an EIA application may have significant effect(s) upon the environment of another EEA state, or the Secretary of State receives a request for involvement from another EEA member state, it must undertake a prescribed process of consultation and notification.

5.1.4 A transboundary impacts screening exercise has been undertaken and is presented in Volume 5, Appendix 4.2: Transboundary Impacts Screening Note. No significant transboundary effects have been identified and therefore more detailed assessment of such effects has been scoped out of the assessment process.

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