



Thurrock Flexible Generation Plant

Environmental Statement Volume 6 Appendix 2.1: Register of Mitigation, Enhancement and Monitoring Commitments

Date: February 2021

Environmental Impact Assessment

Environmental Statement

Volume 6

Appendix 2.1

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Summary

This document lists all mitigation, enhancement and monitoring commitments made in this Environmental Statement. For each measure, it gives a summary of the purpose, actions or requirements and the timescale with any dependencies or inter-relationships of the measure.

Further details of measures can be found in the environmental topic chapters (Volume 3 Chapters 6 to 17) and appendices (Volume 6) of this Environmental Statement.

Qualifications

This document has been prepared by Clare Russell, an Associate and EIA Practitioner with over 18 years’ experience in environmental consultancy focusing on environmental impact assessment and management of construction impacts.

1. Introduction

- 1.1.1 This document sets out a summary of the enhancement measures, mitigation and monitoring commitments detailed within the Environmental Statement for Thurrock Flexible Generation Plant. The means of implementation is also specified for each of the enhancement measures, mitigation and monitoring commitments.
- 1.1.2 The numbering of headings in this document corresponds to the topic chapter numbering in Volume 3 of the Environmental Statement.

6. Landscape and Visual Resources

Table 6.1: Landscape and Visual Resources enhancement, mitigation and monitoring commitments.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	Existing trees that are to be retained will be identified and protected during the construction process in accordance with the requirements of British Standard 5837:2012 Trees in relation to design, demolition and construction.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO and the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Operation and Maintenance Phase			
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	The detailed design of Thurrock Flexible Generation Plant will take into account landscape and visual resources and will be agreed with the local planning authority prior to development commencing.	Secured by Schedule 2, Part 1, Requirement 4 of the DCO.
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	Landscape mitigation will be provided in accordance with a planting scheme that will be based on the Illustrative Landscape Plan (Figure A2.9). Planting will include gapping up and boundary thickening of the hedgerow on the southern boundary of the common land (Zone E) and the hedgerow parallel to the southern boundary of Zone D3. Planting will also be provided along a bund, which runs parallel with the access track from Station Road to Zone A.	The measures will be implemented by the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	The landscape mitigation planting will not commence until construction has completed to avoid the planting being compromised.	The measures will be implemented by the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	Landscape planting will used native species. Planting within pipeline easements and proximity to overhead power lines will be in accordance with the National Grid's guidance.	The measures will be implemented by the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 6: Landscape and Visual Resources	The landscape mitigation planting will be maintained and managed in accordance with the measures set out in the Landscape and Ecology Management Plan. This will include a five-year defects liability period.	The measures will be implemented by the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Decommissioning Phase			
None proposed			

7. Historic Environment

Table 7.1: Historic Environment enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.9	Volume 3, Chapter 7: Historic Environment	A Written Scheme of Investigation will be prepared setting out a comprehensive mitigation strategy for undertaking non-intrusive and intrusive archaeological recording for both the terrestrial and marine historic environment.	Secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Table 2.9	Volume 3, Chapter 7: Historic Environment	Geophysical surveys will be undertaken of areas not yet surveyed and where ground disturbance is proposed. The results of the surveys will inform a programme of targeted evaluation/mitigation as appropriate.	These measures will be implemented via the Written Scheme of Investigation and will be secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Table 2.9	Volume 3, Chapter 7: Historic Environment	Additional geotechnical boreholes, geoarchaeological and deposit monitoring will be undertaken to gather further information and knowledge regarding the palaeoenvironmental sequencing of the Holocene	These measures will be implemented via the Written Scheme of Investigation and will be secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Table 2.9	Volume 3, Chapter 7: Historic Environment	Targeted archaeological evaluation and/or excavation and recording of the findings will be undertaken to understand the archaeological potential of the area and preserve records.	These measures will be implemented via the Written Scheme of Investigation and will be secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Table 2.9	Volume 3, Chapter 7: Historic Environment	The results of the archaeological fieldwork will be published and disseminated.	These measures will be implemented via the Written Scheme of Investigation and will be secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Table 2.9	Volume 3, Chapter 7: Historic Environment	Identification of unexpected archaeological assets/sites encountered during the construction phase will be undertaken in line with procedures agreed with the relevant authorities. The procedures will be contained within the Written Scheme of Investigation	These measures will be implemented via the Written Scheme of Investigation and will be secured by Schedule 2, Part 1, Requirement 13 of the DCO.
Operation and Maintenance Phase			
Table 2.9	Volume 3, Chapter 7: Historic Environment	Landscape mitigation planting will be undertaken (including the gapping up of hedgerows) and will be maintained in accordance with the Landscape and Ecology Management Plan.	The measures will be implemented by the written landscape scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.
Decommissioning Phase			
None proposed			

8. Land Use, Agriculture and Socio-Economics

Table 8.1: Land Use, Agriculture and Socio-Economics enhancement, mitigation and monitoring commitments.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.8	Volume 3, Chapter 8: Land Use, Agriculture and Socio-Economics	A short length of the northern section of public footpath FP200 will be temporarily diverted for up to one month whilst the gas pipeline that crosses this section of footpath is constructed. The diversion will run from Station Road to join the remaining length of FP200 to the south (Zone J).	The measure will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.8	Volume 3, Chapter 8: Land Use, Agriculture and Socio-Economics	To manage the interface of pedestrians/cyclists and construction traffic, measures (e.g. fencing, safety signage and the use of a banksman) will be provided at the crossing of the Thames Estuary Path (FP146) and NCR13 during the construction of the causeway and the delivery of AILs in Zone G.	These measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.8	Volume 3: Chapter 8: Land Use, Agriculture and Socio-Economics	A Soil Management Strategy will be developed post consent and implemented during construction to provide suitable detailed soil handling guidance.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Operation and Maintenance Phase			
Table 2.8	Volume 3, Chapter 8: Land Use, Agriculture and Socio-Economics	Common land will be provided in Zone E to replace the common land lost in Zone A and its size will exceed that lost in Zone A.	Delivery of replacement common land will be secured through the Section 16 consent, or where compulsory acquisition is used, article 33 of the DCO
Table 2.8	Volume 3, Chapter 8: Land Use, Agriculture and Socio-Economics	A new permissive access route for pedestrians will be provided to link Zone E to Fort Road which will provide direct access to the area of replacement common land from Tilbury.	The permissive path will be provided by contractual agreement with the landowner.
Decommissioning Phase			
None proposed			

9. Ecology

Table 9.1: Ecology enhancement, mitigation and monitoring commitments.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Wherever practicable, buffer zones will be established around retained mature broadleaved trees. The buffer zones will be 15 m in width or the width of the tree root protection zone, whichever is the greater. Buffer zones of 5 m in width will also be established around hedgerows and ditches wherever practicable. The tracking of heavy vehicles and the storage of vehicles, machinery, equipment and materials in the buffer zones will be prohibited.	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Pre-construction surveys, will be undertaken within 12 months prior to the commencement of construction works. Surveys may need to be undertaken over several months in order to collate sufficient data to inform a licence application and any associated mitigation strategy. Should the 12-month survey/activity period lapse between pre-construction surveys and the commencement of works, the need to repeat surveys will be assessed by an appropriately experienced ecologist. Should surveys identify the need for a protected species licence, a licence will be obtained prior to the commencement of construction works.	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	[REDACTED]	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Where reptile habitat is required to be cleared for construction, a detailed method statement will be developed in order to help ensure the protection of these species. Progressive and careful habitat clearance works such as the gradual strimming of above-ground vegetation such as brambles, rough grass and scrub, will be undertaken in select areas prior to construction, to deter reptiles from the working area where alternative habitat is available to them. Uprooting of vegetation of potential value to hibernating reptiles will be undertaken prior to the commencement of the hibernation period (November to March) to deter reptiles from hibernating in the area.	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Reptiles will be translocated from the area of permanent habitat loss in Zone A into the 3 ha of retained Zone A grassland. Fencing will be erected to prevent reptiles returning into the construction area. The carrying capacity of the retained grassland will be enhanced via the installation of refugia such as log piles and rubble mounds.	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	A Natural England licence would be obtained for works that affect water vole habitat. Method statements will include pre-construction measures to deter water voles from the working corridor and an adequate buffer zone (i.e. up to 15 m where favourable habitat	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
		is present). Measures include those set out in the Outline Ecological Management Plan (application document A8.7). Works will be conducted in accordance with Natural England guidance, which states that “for summer works, vegetation removal should be carried out for a two-week period prior to development. Winter works should either carry out the mitigation in September and maintain unsuitable habitat until the works commence, or in the event of an emergency, trapping and vole proof fencing may have to be employed” (Arnott, 2001). Works will also take into account best practice guidelines published in Strachan et al. (2011).	
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Where practicable, works to Low Street Pit LWS will be timed to avoid the active GCN season. If this is not practicable, a GCN licence will be obtained to include temporary fencing to exclude GCN from the works area within the vicinity of the GCN ponds.	These measures will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Where trees, hedgerows or scrub, of potential value to nesting birds, are required to be cleared for construction, clearance will be undertaken outside of the bird breeding season (14 February to 31 August inclusive) to prevent disturbance to nesting birds where possible. However, if this is not practicable, habitat will be surveyed prior to clearance. No habitat containing an active nest will be removed or disturbed, and measures will be set in place to protect the nest until young have fully fledged and left the nest. Measures may include the establishment of 5 m wide buffer zones in which heavy vehicles will not be tracked and the storage of vehicles, equipment, machinery and soil storage will be prohibited. Works in the buffer zone will be delayed until the Ecological Clerk of Works (ECoW) has confirmed young have fully fledged and left the nest.	This measure will be implemented through the Ecological Management Plan, which is secured through Schedule 2, Part 1, Requirement 14 of the DCO
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	A biosecurity protocol will be implemented to minimise the risk of spreading invasive species. The main risks are associated with transfer of aquatic plants or animals between watercourses or waterbodies. When working in or near water, control measures will be implemented. The measures will include those set out in the Outline CoCP (application document A8.6). Appropriate measures will also be adopted when working in the vicinity of invasive terrestrial plants. Known locations of invasive plant species will be marked on site and vehicle movements will be restricted in the vicinity of these locations.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Appropriate dust control measures will be implemented on site as far as practicable, to ensure that no significant off-site dust effects occur.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Night working will be avoided where practicable. Where night working is unavoidable, light fixtures will be directed away from habitat of value to protected or otherwise notable species, in order to minimise likely disturbance effects of light spillage.	The measure will be implemented by the Code of Construction Practice and the external lighting scheme, which are secured by Schedule 2, Part 1, Requirements 5 and 8 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	An ECoW will be present on site to oversee enabling works and construction where necessary. The ECoW will be a suitably experienced professional ecologist.	This measure will be implemented through the Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Measures will be implemented to prevent the pollution of watercourses and will be based on the measures within the Outline Code of Construction Practice (application document A8.6). The measures will include the provision of a pollution incident response plan.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Hedgerows that have been cleared for the construction of the gas pipeline will be replanted with an appropriate mix of native species.	This measure will be implemented by the landscaping scheme, which is secured by Schedule 2, Part 1, Requirement 14 of the DCO.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	To mitigate the potential impacts on bats from the temporary loss of hedgerows, temporary artificial hedgerows will be provided to bridge the gaps until the replacement planting has matured sufficiently to restore hedgerow connectivity.	This measure will be implemented through the Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Table 5.1	Volume 3, Chapter 9: Onshore Ecology	Monitoring of wintering birds will be undertaken during causeway use if barge deliveries overlap with the wintering bird season.	This measure will be implemented through Schedule 2, Part 1, Requirement 19 of the DCO.
Operation and Maintenance Phase			
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Thurrock Flexible Generation Plant access road to be unlit, and the Thurrock Flexible Generation Plant itself to be unlit externally in normal operation except for motion-sensitive security lighting which will be directional to minimise light spillage.	This measure will be implemented through the External Lighting Plan which is secured through Schedule 2, Part 1, Requirement 8 of the DCO.
Table 2.8	Volume 3, Chapter 9 Onshore Ecology	Measures will be adopted during the operation of Thurrock Flexible generation plant to prevent the pollution of the environment.	These measures will be implemented through the Environmental Permit for Thurrock Flexible Generation plant.
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Habitats will be managed in accordance with the measures set out in the Outline Ecological Management Plan (application document A8.7).	This measure will be implemented through the Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Paragraph 2.1.6	Volume 4, Chapter 22: Onshore Ecology Cumulative Effects Assessment	Enhancement of the grassland to be created as part of the common land replacement (zone E) to ensure that it is established initially as 'like for like' in relation to the existing semi-improved hay meadow grassland habitat to be lost in Walton Common. The restoration of this area of arable land to meadow grassland will take place as an early pre-commencement action once the scheme is consented.	This measure will be implemented through the Landscape and Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Paragraph 2.1.6	Volume 4, Chapter 22: Onshore Ecology Cumulative Effects Assessment	A flower-rich grassland margin for the access road across Zone C will be established early in the programme as part of the new access construction and to be a permanent retained feature providing a permanent east/west habitat link connecting habitats south of the site (Zone A) with the new habitats in Zones E and F.	This measure will be implemented through the Landscape and Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Paragraph 2.1.6	Volume 4, Chapter 22: Onshore Ecology Cumulative Effects Assessment	The road in zone G where it crosses land currently in arable farming use will include a flower-rich grass margin which will be maintained for the duration that the road is in use during the construction phase.	This measure will be implemented through the Landscape and Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Paragraph 2.1.6	Volume 4, Chapter 22: Onshore Ecology Cumulative Effects Assessment	Retained habitats will be enhanced with deadwood piles and 'bee banks' as already identified for Zone F, where this is practicable	This measure will be implemented through the Landscape and Ecological Management Plan which is secured through Schedule 2, Part 1, Requirement 14 of the DCO.
Decommissioning Phase			
Table 2.8	Volume 3, Chapter 9: Onshore Ecology	Measures to be adopted during decommissioning will be similar to those adopted during construction and will incorporate best practice guidance available at that time.	Method statements for decommissioning works to be produced at the time with regard to prevailing legislation and guidance for protected species and habitats.

10. Traffic and Transport

Table 10.1: Traffic and Transport enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	HGVs will be required to follow the appropriate routes identified to avoid adverse effects on communities and road users.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Temporary reduction in speed limits will be imposed at constrained junctions to provide safe access for construction HGVs and to other road users along the highway network.	The measure will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Abnormal indivisible loads (AILs) will not be permitted to use the highway network to access the site. Instead the AILs will be required to follow the identified route which is via the proposed causeway on the River Thames.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Where there is a risk of mud being deposited on the road, wheel wash facilities will be provided at each construction site. These include dry wheel 'wash' facility (rumble grids).	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Appropriate parking facilities will be provided for construction workers	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Traffic management measures will be provided at those points where cable trenches cut across highways or where existing access rights are affected.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Load sizes and vehicle usage will be monitored and, where possible, loads and deliveries to construction sites will be consolidated using alternative vehicles. The re-use of HGVs, such as backloading, will be encouraged where possible. Where practicable, local suppliers will be used to minimise the distance travelled by HGVs.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Where possible the appointed contractor will seek to minimise overall vehicle movement generation through measures to encourage and promote sustainable travel and transport, for example by using a minibus to shuttle staff between key pick up locations and the compounds (main compound and secondary compounds).	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	Vehicle movements will be managed to minimise the risk of vehicles meeting each other on narrow sections of road.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	The design of HGV access points, including visibility standards and, where necessary, temporary speed restrictions on the adjacent highway will be agreed with the relevant Highway Authorities.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	An Outline Construction Traffic Management Plan (application document A8.8) will be submitted as part of the application for development consent. The DCO will require that no phase of any works may commence until the CTMP has been submitted to and approved by the relevant planning authority, in consultation with the relevant highway authority.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	It is expected that a number of loads which will reach the site via HGV will arrive via the Port of Tilbury. This will minimise the number of HGVs on the strategic highway network.	The measures will be implemented via the Construction Traffic Management Plan Practice, which is secured by Schedule 2, Part 1, Requirement 6 of the DCO.
Table 2.8	Volume 3, Chapter 10: Traffic and Transport	An Outline Construction Workers Travel Plan (document reference A8.9) has been submitted as part of the application for development consent. The DCO will require that no phase of any works may commence until the CWTP has been submitted to and approved by the relevant planning authority, in consultation with the relevant highway authority.	The measure will be implemented via the Construction Workers Travel Plan, which is secured by Schedule 2, Part 1, Requirement 7 of the DCO.
Operation and Maintenance Phase			
None proposed			
Decommissioning Phase			
None proposed			

11. Noise and Vibration

Table 11.1: Noise and Vibration enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.11	Volume 3, Chapter 11. Noise and Vibration	Best Practicable Means (BPM), for example the use of quieter alternative methods, plant and/or equipment, where reasonably practicable; the use of site hoardings, enclosures, acoustic barriers, portable screens and/or screening nosier items of plant, where reasonably practicable; and maintaining and operating all vehicles, plant and equipment in an appropriate manner, to ensure that extraneous sound from mechanical vibration, creaking and squeaking is kept to a minimum.	These measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.11	Volume 3, Chapter 11. Noise and Vibration	Where required, construction noise management measures for specific construction activities will be agreed with Thurrock Council prior to the start of construction and added to the CoCP (application document A8.6).	These measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.11	Volume 3, Chapter 11. Noise and Vibration	Normal construction working hours will be Monday to Friday 08:00-18:00 and Saturday 08:00-13:00 unless otherwise agreed with the relevant planning authority. No Sunday, bank holiday or night working is proposed except where certain activities cannot be interrupted and require 24-hour working. 24-hour working will be limited to 10 calendar days in total per construction phase, for up to three phases.	These measures will be secured by Schedule 2, Part 1, Requirement 9 of the DCO.
Operational Phase			
Table 2.11	Volume 3, Chapter 11. Noise and Vibration	Noise measures will be incorporated into the detailed design of the Thurrock Flexible Generation Plant, typical examples of which are set out in Volume 3, Chapter 11: Noise and Vibration, and monitoring will be undertaken post-commissioning to ensure compliance with the levels reported in this ES.	This will be secured by Schedule 2, Part 1, Requirement 16 of the DCO. Operational noise levels will be regulated by the Environmental Permit for the site.
Decommissioning Phase			
None proposed			

12. Air Quality

Table 12.1: Air Quality enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.20	Volume 3, Chapter 12: Air Quality	Potential construction dust impacts will be managed by a Dust Management and Monitoring Plan. The plan will include appropriate measures from the Institute of Air Quality Management guidance.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Operation and Maintenance Phase			
Table 2.20	Volume 3, Chapter 12: Air Quality	The heights of the built stacks will be an optimum stack height for the final engines type and configuration to allow the appropriate dispersion of air emissions.	The optimum stack height will be identified as part of the application process for the Environmental Permit.
Table 2.20	Volume 3, Chapter 12: Air Quality	Selective Catalytic Reduction will be used to reduce NOx emissions. Monitoring of emissions would be undertaken as required by the Environmental Permit.	Air emissions will be managed via the Environmental Permit.
Decommissioning Phase			
None proposed			

13. Human Health

Table 13.1: Human Health enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Table 2.7	Volume 3, Chapter 13: Human Health	A local community liaison officer will be appointed during the construction phase to act as a mode of communication between the public and developer.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO

14. Climate Change

Table 14.1: Climate Change enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.4	Volume 3, Chapter 14: Climate Change	Where practicable, efficient and well-maintained construction plant using mains electricity will be selected rather than less efficient portable generators to reduce direct and indirect GHG emissions from fuel and energy consumption.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO
Table 2.4	Volume 3, Chapter 14: Climate Change	Goals would be set during detailed design to reduce the embodied carbon in construction materials.	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO
Table 2.4	Volume 3, Chapter 14: Climate Change	Where practicable, the detailed design of Thurrock Flexible Generation Plant will seek a lean design and minimise embodied carbon.	The measures will be secured by Schedule 2, Part 1, Requirement 4 of the DCO

15. Hydrology and Flood Risk

Table 15.1: Hydrology and Flood Risk enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	Construction work will be undertaken in accordance with best practice guidance as set out in the Outline Code of Construction Practice (application document A8.6).	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	<p>Refuelling of machinery will be undertaken within designated areas away from existing watercourses and where spillages can be easily contained. Machinery would be routinely checked to ensure it is in good working condition.</p> <p>Any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment. The following pollution prevention measures will be implemented throughout the construction process:</p> <ul style="list-style-type: none"> • Refuelling of machinery would be undertaken within designated areas where spillages can be easily contained. Machinery would be routinely checked to ensure it is in good working condition. • Any tanks and associated pipe work containing substances included in List 1 of the Groundwater Directive would be double skinned and be provided with intermediate leak detection equipment. • The following specific mitigation measures for the protection of surface water during construction activities would be implemented: • Management of construction works to comply with the necessary standards and consent conditions as identified by the EA and LLFA (Essex CC); • A briefing for all staff highlighting the importance of water quality, the location of watercourses and pollution prevention included within the site induction; • Areas with prevalent run-off to be identified and drainage actively managed, e.g. through bunding and / or temporary drainage; • Areas at risk of spillage, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) to be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage system or the local watercourses. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage / spillage. Bunds used to store fuel, oil etc. to have a 110% capacity of the volume of fuel, oil etc. to be stored; • Disturbance to areas close to watercourses reduced to the minimum necessary for the work; 	The measures will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
		<ul style="list-style-type: none"> Excavated material to be placed in such a way as to avoid any disturbance of areas near to the banks of watercourses and any spillage into the watercourses; Construction materials to be managed in such a way as to effectively minimise the risk posed to the aquatic environment; Plant machinery and vehicles to be maintained in a good condition to reduce the risk of fuel leaks; and Drainage works to be constructed to relevant statutory guidance and approved via the LLA prior to the commencement of construction. <p>Micro-routing or appropriate construction techniques will be employed where required.</p>	
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	Measures to manage surface runoff would include the use of settling tanks or ponds to remove sediment, installation of a hydraulic brake and the installation of pre-installed culvert (flume) pipes in the watercourse under the construction accesses and haul road. The pipe would be of suitable size to accommodate the water volumes and flows, or temporary bridging may be installed. The accesses and haul roads will be removed at the end of the construction programme and measures will be implemented to ensure that watercourses, including their banks, are reinstated to their previous condition where possible.	The measure will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	The existing tidal defence will maintain the current standard of protection with crest levels for embankments and tidal doors set to equal the existing defence levels during the period of construction.	The measure will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	<p>Measures will be implemented to ensure that the risk of flooding is not increased during construction. Temporary construction compound(s) will be constructed using permeable material underlain by a permeable geotextile membrane, surface water runoff will be intercepted via a temporary drainage system. The system will manage surface runoff from the construction compound in terms of both flow rate and water quality in accordance with local policies.</p> <p>In terms of the gas pipeline and underground cable crossings, all major watercourses will be crossed using trenchless techniques. Access roads and temporary crossings required for vehicular access during construction will provide culverts to maintain existing ditch flows and a temporary span bridge for West Tilbury Main. A method statement for the proposed crossing methodologies will be developed during the detailed design stage.</p>	The measure will be implemented via the Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Operation and Maintenance Phase			
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	Following the completion of construction, the tidal defences will be maintained to a crest level matching the existing defences but allowing for a future crest level increase to provide the required future standard of protection. The detailed design will be agreed with the EA and MMO (as appropriate).	The measure will be secured by Schedule 2, Part 1, Requirement 4(3) of the DCO.
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	The design of Thurrock Flexible Generation plant will incorporate flood resilience and/or resistance measures to ensure critical assets are afforded an appropriate level of flood protection to approximately	The measure will be secured by Schedule 2, Part 1, Requirement 4(2)(b) of the DCO

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
		2.84 m AOD. The appropriate measures and their design will be confirmed at the detailed design stage but may include raising the critical assets above the anticipated flood levels and/or bespoke building protection (e.g. elevating bunds around transformers, sealing cable ducts with bentonite, reinforcing and sealing doors, or providing bunding around buildings).	
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	<p>A surface water management plan will be prepared ensure the existing run-off rates to the surrounding water environment are maintained at predevelopment rates.</p> <p>The detailed design of the surface water management plan would be based on a series of infiltration / soakaway tests carried out on proposed development gas and battery facility and the worst-case attenuation volumes outlined in the FRA. The tests would be undertaken prior to construction and in accordance with the BRE Digest 365 Guidelines. The strategy would ensure that the mean annual run-off rate is maintained at the current greenfield run-off rate.</p>	The measures will be implemented via the surface water drainage scheme, which is secured by Schedule 2, Part 1, Requirement 10 of the DCO.
Table 2.6	Volume 3, Chapter 15: Hydrology and Flood Risk	<p>Operational practices within Thurrock Flexible Generation Plant will incorporate measures to prevent pollution to include emergency spill response procedures, based on guidance in e.g.:</p> <ul style="list-style-type: none"> Defra and EA (2018) guidance for discharges to surface water and groundwater: environmental permits; and EA <i>et. al</i> (2018) Best practice guidance Pollution Prevention Guidelines: Dealing with Spills: PPG22 (withdrawn, use as guidelines). 	These measures will be implemented through the Environmental Permit for Thurrock Flexible Generation Plant.
Decommissioning Phase			
Section 4.3	Volume 3, Chapter 15: Hydrology and Flood Risk	Incorporation of management measures, including emergency spill response procedures including clean up and remediation of contaminated soils, appropriate water proofing of exposed cable ducts and the continued maintenance of on-site drainage during the decommissioning work.	The environmental during decommissioning will be implemented through the Environmental Permit for Thurrock Flexible Generation plant, specifically through the permit surrender process for which a Site Closure Plan would be produced.

16. Geology, Hydrogeology and Ground Conditions

Table 16.1: Geology and Ground Conditions enhancement, mitigation and monitoring commitments

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Good environmental practices will be implemented during the construction phase based on current legal responsibilities and guidance on good environmental management in: CIRIA C532 Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors (2001); and CIRIA C648 Control of Water Pollution from Linear Construction Projects (2006)	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	<p>Further site investigation will be undertaken post consent and prior to the commencement of the construction phase. The scope of the investigation will be based on the findings of Appendix 16.1: Phase 1 Preliminary Risk Assessment and will include ground gas monitoring and groundwater sampling/ monitoring as appropriate.</p> <p>Based on the findings of the site investigation, a remediation strategy will be prepared to address any areas of ground or groundwater contamination assessed as requiring remediation. Where necessary, a piling risk assessment/dewatering risk assessment will be undertaken as part of the remediation strategy. The assessment will be undertaken in accordance with relevant EA guidance, including Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (National Groundwater & Contaminated Land Centre report NC/99/73, May 2001).</p>	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	A written scheme will be prepared to deal with any previously unidentified contamination of land or groundwater discovered during construction.	The measures will be implemented via the contaminated land and groundwater scheme, which is secured by Schedule 2, Part 1, Requirement 12 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	<p>Sources of silt and contaminated water will be mitigated as far as practicable by implementing the following measures:</p> <ul style="list-style-type: none"> • Minimise dewatering and pumping of excavations and subsequent disposal of water; • Minimise runoff from exposed ground and stockpiles; • Minimise runoff from plant and wheel washing; • Avoidance of fuel spillages; • Use of appropriate waste storage and disposal measures. 	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	<p>Measures to prevent and control the spillage of oil, chemicals and other potentially harmful liquids will be implemented. Designated areas for the unloading, storage and handling of materials and products will be clearly marked. For example:</p> <ul style="list-style-type: none"> • Designated areas for the unloading, storage and handling of materials and products will be clearly marked; 	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
		<ul style="list-style-type: none"> Avoidance of oil storage within 50 metres of a spring, well or borehole; Avoidance of oil storage within 10 metres of a watercourse; Avoidance of oil storage where oil could run over hard ground into a watercourse; Secondary containment system that can hold at least 110% of the oil volume stored; and Avoidance of storage of oil in areas at risk of flooding, unless fully protected. 	
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	In accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001. Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained. Machinery will be routinely checked to ensure it is in good working condition; and any tanks and associated pipe work containing oils and fuels will be double skinned and be provided with intermediate leak detection equipment and spill kits.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Any leaks or spillages of potentially polluting substances to be contained, collected and then removed from site in an appropriate manner e.g. use of absorbent material, bunding or booms. A pollution response plan will be prepared which all site personnel would be required to adhere to.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Used oils will be disposed of in accordance with Environmental Permitting (England and Wales) Regulations 2016.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Construction workers will be provided with appropriate risk assessments, which will address the potential for contaminated soil to be encountered. Appropriate Personal Protective Equipment (PPE) (e.g. disposable coveralls, gloves and particulate/vapour masks) will be provided to protect ground workers in the event that contaminated soils and/or groundwater are encountered.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Any construction work required in confined spaces will be undertaken in accordance with the appropriate health and safety controls.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Operation and Maintenance Phase			
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Substances used in the operation of Thurrock Flexible Generation plant will be stored in appropriate containment bunds to ensure there is no release to soil or the surface water drainage system in the event of a spillage or tank leak.	The operation of Thurrock Flexible generation Plant will be managed via an Environmental Permit.
Decommissioning Phase			
Table 2.6	Volume 3, Chapter 16: Geology, Hydrogeology and Ground Conditions	Decommissioning measures will follow a similar approach to those set out for the construction phase.	The environmental management during decommissioning will be implemented through the Environmental Permit for Thurrock Flexible Generation plant, specifically through the permit surrender process for which a Site Closure Plan would be produced.

17. Marine Environment

Table 17.1: Marine Environment enhancement, mitigation and monitoring commitments.

Reference	Cross reference to Environmental Statement	Enhancement, mitigation and monitoring commitments	Means of implementation
Construction Phase			
Table 2.10	Volume 3, Chapter 17: Marine Environment	Biosecurity measures will be implemented to minimise risk of spread of marine invasive and non-native species. This may include measures to for rock materials for causeway construction, in the unlikely event that this material is sourced from the marine environment (it is anticipated that this material will originate from non-marine sources). The plan will outline measures to ensure vessels comply with the International Maritime Organization (IMO) ballast water management guidelines, it will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as measures to be adopted in the event that a high alert species is recorded.	The measures will be implemented via Code of Construction Practice, which is secured by Schedule 2, Part 1, Requirement 5 of the DCO.
Operation and Maintenance Phase			
Table 2.10	Volume 3, Chapter 17: Marine Environment	Monitoring of saltmarsh habitats post construction to assess the extent to which saltmarsh communities develop in the lee of the constructed causeway.	This measure will be implemented as part of the Landscape and Ecological Management Plan, secured by Requirement 14 in the DCO. It is specified in paragraph 9.1.6 in the Outline Ecological Management Plan.
Decommissioning Phase			
Table 2.10	Volume 3, Chapter 17: Marine Environment	A Causeway Decommissioning Plan for the causeway will be developed prior to decommissioning, which will include details of environmental management measures and pollution control during decommissioning, and details of the restoration and monitoring of habitats within the footprint of the removed causeway	DCO requirement to produce the Causeway Decommissioning Plan for approval by the relevant planning authority prior to decommissioning work.