



Fayrewood Ecology

MedwayOne Energy Recovery Facility

Habitats Regulations Assessment

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1 Introduction

- 1.1.1 Fayrewood Ecology was commissioned by Medway Energy Recovery Limited to undertake a Habitats Regulations Assessment (HRA) in relation to the development of an Energy Recovery Facility within the MedwayOne site, which comprises the redevelopment of the former Kingsnorth Power Station.
- 1.1.2 Outline planning permission for MedwayOne was granted in August 2023 (with all matters reserved except for access), for the construction of flexible EG (iii)/B2/B8 use class buildings, sui generis uses for energy uses and a lorry park, together with servicing, parking, landscaping, drainage, remediation, demolition and earthworks.
- 1.1.3 The parameters of the Facility remain as per the outline application, which was informed by an HRA¹. The HRA scoped in one European designation – Medway Estuary and Marshes SPA/Ramsar. Following granting of outline planning permission, a Dispersion Modelling Assessment has been carried out based on the detailed design proposals² as part of the Environmental Permit (EP) application for the Facility. The assessment identified that one of the Critical Load figures for saltmarsh had been revised downward by the Air Pollution Information System (APIS)³ which will also alter the modelling originally carried out for the outline application. In addition, the assessment includes an updated cumulative assessment to assess the outputs of the Facility combined with Damhead Creek II power station (to be constructed).
- 1.1.4 On that basis, an update HRA has been undertaken to reassess the potential for likely significant effects in relation to operational air quality only, based on the updated modelling information. All other potential impacts remain as reported in the HRA for the outline application and therefore do not require reassessment.
- 1.1.5 In relation to operational air quality, the HRA for the outline planning application for the entire MedwayOne site (based on the Air Quality Chapter of ES Addendum) concluded that:
- The annual mean NO_x, SO₂ and NH₃ Process Contributions (PC) of MedwayOne as a whole (based on the maximum output of the Facility as per the submitted development parameters) were above 1% of the Critical Levels for Medway Estuary and Marshes SPA/Ramsar and so the annual mean Predicted Environmental Contributions (PECs) were calculated. All of these were less than 70% of the relevant Critical Levels and therefore the impact can be considered insignificant.
 - For short-term PCs (i.e daily mean rather than annual mean), the daily mean SO₂ and NH₃ means were all below 10% of the relevant Critical Level and therefore no likely significant effects would occur.
 - The NO_x PCs were calculated to be above 10% for the SPA/Ramsar and the maximum PEC was calculated as being above 70% of the Critical Level (70.4%), meaning a significant effect could not be ruled out and further assessment was required. The Air Quality Chapter of the ES modelled where in the SPA/Ramsar is predicted to experience a PC in excess of 10% of the Critical Level, which comprised approximately 52ha (or 1.1% of the total area of the SPA/Ramsar) of saltmarsh and mudflats. The HRA concluded that

¹ ES Addendum Appendix 8.8A - Aspect Ecology (2021) MedwayOne, Former Kingsnorth Power Station – Report to Inform a Habitats Regulations Assessment and Appropriate Assessment.

² Fichtner Consulting Engineers Ltd (2024) MedwayOne ERF Dispersion Modelling Assessment

³ <https://www.apis.ac.uk/srcl>

no likely significant effects would arise as the habitats would be regularly flushed by the tides, any exceedance would be on a daily rather than annual basis and within a very small portion of the designation.

- Overall the HRA concluded no likely significant effects would arise in relation to operational air quality at Medway Estuary and Marshes SPA/Ramsar.

1.1.6 This document undertakes an updated HRA in light of the Dispersion Modelling Assessment to determine whether the conclusions of the HRA for the outline planning application remain valid in relation to operational air quality.

2 Relevant Legislation and Policy

2.1 Legislation

2.1.1 All areas in England classified as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), collectively known as European sites, receive statutory protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (the ‘Habitats Regulations’). These Regulations transpose into UK legislation the ‘Habitats Directive’ 1992 (92/43/EEC) and the ‘Birds Directive’ 2009 (2009/147/EC).

2.2 Policy

2.1.2 The National Planning Policy Framework (NPPF)⁴ sets out that Ramsar designations should also be treated in the same manner as SACs and SPAs.

2.1.3 The Regulations impart a duty on Local Planning Authorities (competent authorities) to carefully consider whether any proposals may have a significant effect on a European site, either alone or in combination with other plans or projects. In most circumstances, permission may only be given for a plan or project to proceed if it has been ascertained that it will not have an adverse effect on the integrity of any such designation.

⁴ Department for Levelling Up, Housing and Communities (2023) National Planning Policy Framework

3 Assessment Methodology

3.1.1 In order to assess projects that are not directly / physically connected with, or necessary to the management of the relevant designation, a structured process is in place that follows three broad stages, summarised below, as set out within the NPPF and accompanying ODPM circular 06/2005, whilst further detail is provided by European Commission guidance relating to the Habitats Directive^{5,6}.

3.1 Stage 1 – Initial Scoping and Screening

3.1.2 Under Stage 1, it is necessary for the competent authority to examine whether the proposals will result in a ‘likely significant effect(s)’ on the internationally important features of the European site, either alone or in combination with other plans or projects.

3.1.3 If it can be objectively concluded that there are unlikely to be significant effects on a relevant European site, no further assessment is necessary and permission should not be refused.

3.1.4 Should it be determined that (in the absence of mitigation, compensation or avoidance measures) a plan or project could result in a ‘likely significant effect(s)’ on the internationally important features of the European site, either alone or in combination with other plans or projects (or that such effects cannot be ruled out), the competent authority should proceed to the next stage, where further assessment is required.

3.1.5 Following the Court of Justice of the European Union (CJEU) ruling (People over Wind, Peter Sweetman v Coillte Teoranta, Case C-323/17, dated 12 April 2018), measures intended to avoid or reduce the harmful effects of a plan or project on a European site should not be taken into account at this screening stage, and instead these must be considered as part of an Appropriate Assessment (Stage 2).

3.2 Stage 2 – Appropriate Assessment

3.1.6 Under the Stage 2, it is necessary for the competent authority to determine whether the proposals, either alone or in combination with other plans or projects, will result in any adverse effects on the integrity of relevant designations, as defined by their conservation objectives and status.

3.1.7 If it is considered by the competent authority that the plan or project will not adversely affect the integrity of the site, permission can be granted. If this cannot be ascertained, or there is uncertainty, the assessment procedure should follow on to Stage 3.

3.3 Stage 3 – Alternative Solutions and Exceptions

3.1.8 Under Stages 3, it is necessary for the competent authority to assess whether alternative solutions exist and whether there are imperative reasons of overriding public interest (IROPI). If these tests are passed, authorisation may be granted subject to compensation measures being secured.

⁵ ODPM Circular 06/2005: Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System (16 August 2005)

⁶ European Commission (April 2000) Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC

3.4 The Precautionary Principle

3.1.9 Central to the assessment process is the precautionary principle, requiring that the competent authority is certain that the proposal will not have an adverse effect on integrity before giving authorisation. However, as established by the Boggis case⁷, there needs to be a real, rather than a hypothetical risk to the designation.

3.1.10 The aspect of certainty is expanded further by principle 12 set out at part C11 of the Habitats Regulations Assessment Handbook⁸ (based on the ruling in the case of WWF UK Ltd and RSPB v SOS⁹), which sets out ‘the test is whether there is reasonable scientific doubt rather than an absolute certainty. It is not possible to demonstrate, nor is it necessary to show, an absolute guarantee that there will not be an adverse effect on site integrity.’

3.5 In Combination Effects

3.1.11 Integral to the assessment, is consideration of the potential for cumulative effects arising in-combination with other plans or projects. This is informed by a review of adopted Medway Local Plan (2003) and associated HRA, which sets out proposals for development within the region.

⁷ Boggis v Natural England and Waveney District Council [2009] EWCA CIV 1061

⁸ Tyldesley, D., and Chapman C. (2013) *The Habitats Regulations Assessment Handbook, September 2016 edition* UK: DTA Publications Limited (see website at www.dtapublications.co.uk)

⁹ WWF UK Ltd and RSPB v SoS for Scotland [1991]1 C.M.L.R 1021 [1999] Env 632, Court of Session, Edinburgh, 28th October 1998

4 Stage 1 – Initial Scoping and Screening

4.1 Relevant Designations

- 4.1.1 The HRA for the outline application for MedwayOne scoped Medway Estuary and Marshes SPA/Ramsar into the assessment only.
- 4.1.2 The Dispersion Modelling Assessment considers effects on European designations within 10km of the site, comprising Medway Estuary and Marshes SPA/Ramsar, Thames Estuary SPA/Ramsar, Queendown Warren SAC, and Benfleet and Southend Marshes SPA/Ramsar. The assessment identified that the PC from the Facility is less than the screening criteria (as detailed in the methodology section of the Dispersion Modelling Assessment) and can therefore be screened out as insignificant, with the exception of Medway Estuary and Marshes SPA/Ramsar, in relation to the proposals alone. Therefore it is not considered necessary to scope any additional European designations into the HRA for the assessment of the proposals alone.
- 4.1.3 The Dispersion Modelling Assessment identified that that the Facility in-combination with Damhead Creek II power station exceeds the Critical Load for nitrogen deposition at Thames Estuary and Marshes SPA/Ramsar and therefore a potential impact pathway is present. On that basis, Thames Estuary and Marshes has been scoped into the assessment for cumulative impact, in addition to Medway Estuary and Marshes.

4.2 Overview of Scoped In Designations

Medway Estuary and Marshes SPA/Ramsar

- 4.1.4 A review has been carried out to identify any changes to the status of Medway Estuary and Marshes SPA/Ramsar since the HRA for the outline application was completed, such as changes to the qualifying features, conservation objectives, or condition of the associated SSSI management units. No changes were identified and so the designation status remains as reported in the HRA for the outline application.

Thames Estuary and Marshes SPA/Ramsar

- 4.1.5 Thames Estuary and Marshes SPA/Ramsar lies approximately 4.4km north-east of the site, and adjoins the north-eastern boundary of Medway Estuary and Marshes SPA/Ramsar.
- 4.1.6 As noted above, Thames Estuary and Marshes SPA/Ramsar was scoped out of the HRA for the outline application for MedwayOne, but is now scoped in for cumulative impacts. The reasons for its designation as an SPA are found on the standard data form,¹⁰ and is designated on the basis of its populations of migratory and wintering birds. The conservation objectives for the SPA can be found online¹¹. The reasons for designation as a Ramsar site are found on the Ramsar Information Sheet¹² and comprises populations of at least 14 nationally scarce wetland plants, more than 20 British Red Data Book invertebrates, its assemblage of wintering birds, and important populations of six migratory and wintering bird species.

¹⁰ <https://publications.naturalengland.org.uk/publication/3227002>

¹¹ <https://publications.naturalengland.org.uk/publication/4698344811134976>

¹² <https://jncc.gov.uk/jncc-assets/RIS/UK11069.pdf>

4.3 Potential Impact Pathways

4.1.7 Chapter 9 of the Dispersion Modelling Assessment considers impacts of the Facility at ecological receptors, which is divided into effects from atmospheric emissions and deposition.

Atmospheric Emissions

4.1.8 The impact of process emissions from the Facility has been compared to the Critical Levels listed in Table 3 of the Dispersion Modelling Assessment, for nitrogen oxides, sulphur dioxide, hydrogen fluoride and ammonia. If the PC of a particular pollutant is greater than 1% of the long-term or 10% of the short-term Critical Level at a European designated site, further assessment is required. Exceedances of the screening criteria do not automatically result in a significant effect but do require further analysis.

4.1.9 The assessment identified that the annual mean NO_x and annual mean ammonia exceeds 1% of the Critical Level at Medway Estuary and Marshes SPA/Ramsar, at 1.5% and 1.25% respectively (see Table 35 of the Dispersion Modelling report), and therefore further assessment is required as a potential impact pathway is present.

4.1.10 For Thames Estuary and Marshes, all PC's are less than 1% and can therefore be screened out as no potential impact pathway is present in this regard.

Deposition

4.1.11 In addition to Critical Levels for the protection of ecosystems, habitat specific Critical Loads for designations at risk from acidification and nitrogen deposition (eutrophication) are outlined in APIS. Habitats listed on APIS for Medway Estuary and Marshes SPA/Ramsar comprise saltmarsh, grassland and sand dunes, in relation to the SPA bird species they support.

4.1.12 Sand dunes in relation to Tern species (as listed on APIS) have been excluded from the assessment - although Little Tern and Common Tern are a qualifying species of the Medway SPA for breeding, none were recorded during the survey work carried out in and around the site for the outline application. It is likely sand dune is listed generically as a supporting habitat for the tern species, however they breed on shingle/beaches and there is also none of this Priority Habitat mapped in the SPA¹³. In addition, the Medway SSSI citation¹⁴ refers to the designation containing smaller areas of other habitats including sand dune, which contribute to the variety of interest of the SSSI, rather than being a key reason for designation. The SPA standard data form¹⁵ does not list coastal sand dunes as part of the site character, however the Ramsar Information Sheet lists "Sand/shingle shores (including dune systems)" covering 0.02% of the Ramsar area (0.02% of 4697.93ha = 0.93ha). On that basis the Dispersion Modelling Assessment considered saltmarsh and their associated grassland habitats only.

4.1.13 The results of the assessment are shown in Appendix C of the Dispersion Modelling Assessment, which finds that the contribution from process emissions from the Facility is less than the screening criteria and can be screened out as insignificant, with the exception

¹³ <https://magic.defra.gov.uk/MagicMap.aspx>

¹⁴ <https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000244.pdf>

¹⁵ <https://publications.naturalengland.org.uk/publication/3199226>

of nitrogen deposition impacts on saltmarsh habitat at Medway Estuary and Marshes SPA/Ramsar, and Thames Estuary and Marshes SPA/Ramsar.

- 4.1.14 Figure 14 of the report shows the extent of impacts that cannot be screened out as insignificant and therefore where further assessment is required. As shown on the Figure, no saltmarsh habitat is identified within the area of potential impact within Thames Estuary and Marshes SPA/Ramsar and as such no potential impact pathway is present.
- 4.1.15 In summary, potential impact pathways have been identified in relation to atmospheric emissions (annual NO_x and ammonia) and nitrogen deposition for Medway Estuary and Marshes SPA/Ramsar. No impact pathways have been identified in relation to Thames Estuary and Marshes SPA/Ramsar.

4.4 Assessment of Likely Significant Effects – the Proposals Alone

Atmospheric Emissions – Medway Estuary and Marshes SPA/Ramsar

- 4.1.16 The Dispersion Modelling Assessment identified that the 1% Critical Level was exceeded for the annual means of NO_x and ammonia, and therefore further assessment was required. Subsequently the PEC has been calculated, taking background concentrations for the grid square where the maximum PC occurs within the SPA/Ramsar, to determine the potential for a significant effect. The results are set out in Table 36 of the Dispersion Modelling report, which identify a PEC of below 70% of the Critical Level (53.83% for NO_x and 37.90% for ammonia). The report concludes the impact is therefore non-significant. As such, no likely significant effects are considered to arise in relation to the proposals alone for atmospheric emissions.

Deposition – Medway Estuary and Marshes SPA/Ramsar

- 4.1.17 The Dispersion Modelling Assessment identified that the 1% Critical Load for saltmarsh habitat is exceeded for nitrogen deposition (kg/ha/yr). Baseline nitrogen deposition already exceeds the Critical Load and so impacts cannot be screened out based on calculations of the PEC as was done above for atmospheric emissions, and so alternative assessment is required.
- 4.1.18 The area of saltmarsh within the 1% exceedance area is shown on Figure 14 of the Dispersion Modelling report, and is approximately 135ha. The SPA standard data form states the SPA comprises 15% saltmarsh (i.e. 702ha of a total 4686ha), meaning 19% of the overall saltmarsh resource would exceed 1% of the Critical Load.
- 4.1.19 Of the SPA bird species, three are listed for breeding (avocet, common tern and little tern) – these species are not associated with saltmarsh for breeding due to the regular tidal inundation of the habitat. A number of SPA species are likely to forage in saltmarsh, either on higher ground in vegetation (such as geese and swans) or along the muddy creeks between these areas (such as waders). The saltmarsh would form part of a wider foraging resource at a landscape scale including for example lagoons, reedbeds, grassland, intertidal mud and open water (dependant on the species).
- 4.1.20 The Ramsar information sheet¹⁶ lists 10 plant and 12 invertebrate species which qualify the site under Ramsar criterion 2. Of these, five plant species are associated with saltmarsh habitat comprising Borrer's saltmarsh-grass *Puccinellia fascicula*, saltmarsh goose-foot *Chenopodium chenopodioides*, golden samphire *Inula crithmoides*, perennial glasswort

¹⁶ <https://jncc.gov.uk/jncc-assets/RIS/UK11040.pdf>

Sarcocornia perennis and one-flowered glasswort *Salicornia pusilla*. Four of the 12 listed invertebrates are associated with saltmarsh comprising a dancefly *Poecilobothrus ducalis*, a weevil *Baris scolopacea*, ground lackey moth *Malacosoma castrensis*, and a horsefly *Atylotus latistriatus*. As such, saltmarsh habitat forms only a part of the interest of the Ramsar for plant and invertebrate species.

- 4.1.21 On the basis of the above, there is potential for effects to arise in the areas of saltmarsh shown on Figure 14 as a result of habitat degradation from nitrogen deposition, which has the potential to affect SPA bird species using the saltmarsh for feeding, or Ramsar plant and invertebrate species associated with the saltmarsh. For example, the nitrogen deposition could change the quality or species composition of the saltmarsh, which may affect Ramsar plant/invertebrate distribution or reduce the quality of the area as a feeding resource for SPA birds.
- 4.1.22 The air quality modelling for the outline application used a Critical Load for saltmarsh of 20-30kgN/ha/yr, however since then APIS have revised the figure down to 10-30kgN/ha/yr. As such the potential impacts/parameters of the proposals have not changed, but the Critical Load figure for nitrogen deposition on saltmarsh has become more precautionary.
- 4.1.23 APIS recommends that the lower level of 10kgN/ha/yr should be applied to more densely vegetated upper marsh and to areas of marsh subject to direct run-off from adjacent catchments, and that for pioneer saltmarsh the higher 20-30kgN/ha/yr should be used. The Dispersion Modelling Assessment has taken the precautionary approach and modelled using 10kgN/ha/yr.
- 4.1.24 The area of saltmarsh within the 1% exceedance area as shown on Figure 14 lies outside of the site and therefore its exact composition across 135ha is not known. The Dispersion Modelling takes the worst-case figure to be used for vegetated upper marsh, whereas in reality the area is likely to comprise a range of saltmarsh types, including pioneer marsh for which a higher Critical Load can be used (which identified no likely significant effects in the air quality assessment for the outline application).
- 4.1.25 Bird surveys carried out for the outline application did not record and SPA qualifying species at internationally important levels around the site (the majority were below the threshold for local importance), which included several areas of saltmarsh shown on Figure 14 which were visible from the site and could therefore be included within the survey. As such it appears that the saltmarsh in the vicinity of the site does not form a significant resource for SPA bird species.
- 4.1.26 Saltmarsh forms one component of a range of habitats which would be used by SPA bird species, the majority of which will forage in mud on the tide line and so saltmarsh is unlikely to form a key habitat component which could affect overall extent and distribution of qualifying species.
- 4.1.27 Although the Critical Load for nitrogen deposition has reduced (for vegetated upper saltmarsh), there has been no change to the evidence, processes and main impacts set out in APIS and the HRA for the outline application, in that:
- There are very few studies of nitrogen deposition on saltmarsh and therefore figures and highly precautionary;
 - The age of the marsh will influence the nitrogen response (as evidenced by the now revised figure for upper saltmarshes);

- Saltmarsh is intertidal and therefore subject to continual daily flushing with saline water which would likely flush away deposited material; and
 - Nitrogen deposition is likely to be low importance for these systems as inputs are probably significantly below the large nutrient loadings from river and tidal inputs (such as from agricultural run-off).
- 4.1.28 On the basis of all of the of the above, it is not considered that nitrogen deposition exceeding the 1% Critical Load over 19% of the saltmarsh within the SPA would lead to habitat degradation with the potential to give rise to significant effects on SPA bird populations or Ramsar plant and invertebrate species.

Conclusion – the Proposals Alone

- 4.1.29 The updated assessment has determined no likely significant effects are considered to arise in relation to atmospheric emissions or deposition at Medway Estuary and Marshes SPA/Ramsar in relation to the proposals alone, and therefore it is not necessary to proceed to the Appropriate Assessment stage.

4.5 Assessment of Likely Significant Effects – In-combination

- 4.1.30 The HRA for the outline planning application did not identify any in-combination effects from MedwayOne as a whole combined with the identified cumulative schemes.
- 4.1.31 The Dispersion Modelling Assessment identified point source of emissions within the local area which should be considered in-combination with the Facility, comprising Damhead Creek I and Damhead Creek II power stations. Damhead Creek I has been operational for many years and so the contribution made to the baseline pollutant concentrations is already included in the main assessment.
- 4.1.32 The Damhead Creek II power station has not yet been constructed and so no baseline data is available. As such the dispersion assessment has taken a worst case scenario and modelled the Facility and Damhead Creek II operating at their maximum outputs at the same time. This is conservative as the maximum impacts are not likely to occur at the same location, or at the same time (for short-term impacts). The results of the assessment are set out in section 10.3 of the Dispersion Modelling Assessment.

Airborne Impacts

Medway Estuary and Marshes SPA/Ramsar

- 4.1.33 As discussed above, for the Facility alone for the annual mean of oxides of nitrogen, the % of the Critical Level exceeded 1% so the PEC was then calculated which was below 70%, meaning this could be screened out as insignificant. When considered cumulatively with the proposed Damhead Creek II power station, the PEC remains below 70% of the critical level (at 63.3%) and can therefore still be screened out as insignificant. As shown in Table 39 of the assessment report, Damhead Creek II contributes a far greater proportion than the Facility (1.5% of the Critical Level for the Facility and 9.53% of the Critical Level for Damhead Creek II).
- 4.1.34 For the daily mean of oxides of nitrogen, the Facility alone could be screened out as insignificant as the PEC as a % of the Critical Level was below 70%. When taken with Damhead Creek II, it cannot be screened out as insignificant as the cumulative PEC is above 70% (at 89.17%). As per Table 39, the cumulative short-term impact is dominated by the

contribution from Damhead Creek II (8.13% of the Critical Level for the Facility and 39.44% of the Critical Level for Damhead Creek II).

- 4.1.35 While no exceedance of the Critical Level is therefore predicted, the cumulative PEC is approaching the Critical Level. As noted above, the calculations are a considerable over prediction due to a lack of data on the emissions from Damhead Creek II and so a worst-case scenario has been used where both are operating at maximum outputs at the same time, which in reality is unlikely to occur. Any increase in atmospheric oxides of nitrogen will be very short term as the figures are for the daily rather than annual mean, while in any event the habitats associated with the SPA/Ramsar are either open water or regularly flushed/covered with water during high tide such that they are not sensitive to changes in atmospheric composition. As such it is not considered such changes could cause habitats to degrade to an extent that they could affect the conservation status of the SPA or Ramsar bird/plant/invertebrate species.
- 4.1.36 On that basis, although the combined PEC exceeds 70%, it is not considered this would give rise to cumulative effects on the SPA/Ramsar.

Thames Estuary and Marshes SPA/Ramsar

- 4.1.37 As shown in Table 41 of the Dispersion Modelling Assessment, both the annual mean and short-term daily mean oxides of nitrogen from the Facility screen out as insignificant. When incorporating the contribution of Damhead Creek II, the resultant PCs exceed 1% of the long-term and 10% of the short term values, however when calculating the PEC this is below 70% of the Critical Level and so is not significant. The cumulative short-term PEC is also well below the Critical Level. On that basis no cumulative effects are anticipated when the Facility is taken in combination with Damhead Creek II.

Deposition Impacts

Medway Estuary and Marshes SPA/Ramsar

- 4.1.38 As discussed above for the Facility alone, nitrogen deposition exceeded 1% of the Critical Load and so the PEC was calculated (the Facility plus baseline deposition) which was found to be above 70% of the Critical Load and so could not be screened out as insignificant. Further assessment was carried out which concluded likely significant effects would not arise. The PEC exceeded the Critical Load at 138.92%, while the addition of Damhead Creek II produces only a slight 3% increase to 143.2%.
- 4.1.39 The assessment carried out in section 5.4 for the proposals alone remain valid and it is not considered the increase in exceedance of PEC above the Critical Load from 138.92% to 143.02% would cause additive effects to arise. As such, no cumulative effects are predicted.

Thames Estuary and Marshes SPA/Ramsar

- 4.1.40 The cumulative analysis for Thames Estuary and Marshes SPA/Ramsar is shown on Table 42 of the Dispersion Modelling Assessment. As shown on the table, the baseline nitrogen deposition rate already exceeds the Critical Load of 10kgN/ha/yr, at 13.52kgN/ha/yr which equates to 135.18% of the Critical Load. The PC of the Facility would increase the PEC from 135.18% to 136.41%, and in combination with Damhead Creek II would result in a cumulative increase from 135.18% to 137.91%, which is an increase of 2.7%.
- 4.1.41 The designation lies 4.4km from the site and extends towards it in a narrow band comprising an area of Coastal Floodplain and Grazing Marsh Priority Habitat, with the remainder of the

designation at a significantly greater distance, wrapping around the coast. As such, the cumulative increase in nitrogen deposition is likely to occur across an extremely small portion of the designation (similar to that shown for the proposals alone in Figure 14).

- 4.1.42 In relation to coastal and floodplain grazing marsh, APIS notes that nitrogen deposition is likely to be less important than nutrient enrichment via fertiliser wash off into drainage channels. Similar to the saltmarsh habitat at Medway Estuary and Marshes, coastal and floodplain grazing marsh is frequently inundated by flooding which would wash off particles deposited onto vegetation, while other areas such as marsh creeks would be covered with water. As such, this habitat type is not considered to be sensitive to nitrogen deposition.
- 4.1.43 On that basis it is not considered that the cumulative nitrogen deposition within a very small area of the designation would result in habitat degradation to the extent that it would affect the conservation status of the SPA/Ramsar qualifying species. There no cumulative effects are predicted.

Conclusion – the Proposals in-combination with Damhead Creek II

- 4.1.44 The updated assessment has not identified any cumulative impacts in relation to Medway Estuary and Marshes SPA/Ramsar, or Thames Estuary and Marshes SPA/Ramsar, and therefore it is not necessary to proceed to the Appropriate Assessment stage.

5 Summary

- 5.1.1 The planning application for MedwayOne was accompanied by an HRA and the site is in receipt of outline planning permission. An Environmental Permit application for the Energy from Waste Facility within MedwayOne is to be submitted, and therefore additional modelling work has been carried out in relation to air quality, based on the detailed design proposals and latest data from APIS.
- 5.1.2 The development parameters for the Facility remain as assessed in the HRA for the outline application, and therefore this update HRA covers operational air quality only. The HRA of the outline application did not identify any likely significant effects as a result of operational air quality, and therefore this update re-examines the evidence based on the latest modelling information, to determine whether this remains the case.
- 5.1.3 The HRA for the outline application scoped in Medway Estuary and Marshes SPA/Ramsar into the assessment. The updated modelling identified a potential cumulative impact pathway at Thames Estuary and Marshes SPA/Ramsar and so this designation was also scoped into this update HRA.
- 5.1.4 An assessment of the modelling results identified no likely significant effects in relation to the proposals alone, or in-combination with Damhead Creek II power station.
- 5.1.5 As no likely significant effects have been identified, the conclusions of the HRA for the outline application in relation to operational air quality remain valid and it is not necessary to proceed to the Appropriate Assessment stage.