Riverside Resource Recovery Facility

Riverside Optimisation Project

Habitats Regulations Assessment

April 2021 |

CORY
RIVERSIDE ENERGY

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1 Introduction

1.1 Overview

1.1.1 Stantec UK was commissioned by Riverside Resource Recovery Limited to undertake a shadow[1] Habitats Regulations Assessment ('HRA') of the Riverside Optimisation Project ('ROP'), from here on referred to as 'the Project'.

1.1.2 Under the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'), an HRA is required for all plans and projects which may have likely significant effects on European sites[2] and are not directly connected with or necessary to the management of the European site.

1.1.3 This Stage 1 HRA is intended to provide the information necessary for the Department for Business, Energy & Industrial Strategy to make their assessment.

1.1.4 No likely significant effects have been identified to European sites either alone or in combination. Therefore, no specific avoidance or mitigation measures are proposed, and there is no need to move to a HRA Stage 2 assessment.

1.2 Description of Project

1.2.1 Riverside Resource Recovery Facility ('RRRF') operated by Riverside Resource Recovery Limited (part of Cory Riverside Energy group (Cory)) is an Energy Recovery Facility ('ERF') situated at Norman Road in Belvedere within the London Borough of Bexley ('LBB').

1.2.2 Operating since 2011, RRRF has recently been fitted internally with an upgraded operational control system that enables a more consistent level of operation. This technology enables RRRF to be operated more efficiently than its original design when first built.

1.2.3 In order to realise this increased efficiency in operations, the terms of the relevant permissions that RRRF currently operates under need to be amended.

1.2.4 Consequently, Riverside Resource Recovery Limited is submitting to the Secretary of State for the Department of Business, Energy, and Industrial Strategy ('BEIS') an application ('the Application') under section 36C of the Electricity Act 1989 to:

- amend the power generation description of RRRF in the 2015 s.36 Variation (application reference GDBC/003/00001C-06) to change the energy generation limit from 'up to 72MW' to 'up to '80.5MW';
- request that the Secretary of State then gives a direction under section 90(2) of the Town and Country Planning Act 1990 ('TCPA 1990') varying the conditions attached to the 2017 Permission (application reference 16/02167/FUL), to increase the maximum waste throughput from 785,000 tonnes per annum ('tpa') to 850,000 tpa; and
- amend the 2015 s.36 Variation and to incorporate into the new deemed planning permission the amendments authorised by the Secretary of State in the Riverside Energy Park ('REP')

[1] Under the Conservation of Habitats and Species Regulations 2017 (as amended) it is the responsibility of a competent authority (i.e., the Planning Authority) to conduct a HRA. However, these can be completed by the applicant and adopted by the planning authority as a 'shadow' HRA to support an application.

[2] The following European sites are protected by the Habitats Regulations and any proposals that could affect them will require an HRA: Special Areas of Conservation ('SACs') and Special Protection Areas ('SPAs'). Any proposals affecting the following sites would also require an HRA because these are protected by government policy: proposed SACs, potential SPAs, Ramsar sites - wetlands of international importance (both listed and proposed), areas secured as sites compensating for damage to a European site.

Development Consent Order ('DCO') regarding the ash storage area for RRRF and use of the jetty by both RRRF and REP.

1.2.5 This is called the Riverside Optimisation Project, or 'ROP'.

1.2.6 ROP will not alter the physical built footprint or give rise to additional physical development of RRRF. Although ROP would result in an increase (of up to 65,000 tonnes) in the volume of waste throughput processed annually at the RRRF, and would increase the facility's MW output, operations would follow the same procedures and remain fundamentally unchanged.

1.3 Scope and Aims

1.3.1 This shadow Habitats Regulations Assessment ('HRA') has been produced to provide technical information pertinent to the Project. This HRA reports Stage 1 (screening) of the HRA process and assesses whether the Project has potential to cause likely significant effects on European sites.

1.3.2 As ROP will not alter the physical built footprint, or require any construction activities, or give rise to additional physical development of RRRF, this HRA deals with the potential for operational effects only.

1.3.3 An Environmental Impact Assessment Report (EIA Report) including a biodiversity chapter which assesses potential for significant effects to all designated areas, including Sites of Scientific Interest ('SSSIs'), and locally designated areas, has also been produced (Stantec, 2021) and accompanies the Application.

2 HRA Requirement and Methodology

2.1 Legislative and Policy Context

2.1.1 Under Part 6 'Assessment of Plan and Projects', Regulation 63 (1) of the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations'), an appropriate assessment needs to be undertaken by the competent authority in respect of any plan or project which:

- Is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and
- Is not directly connected with or necessary to the management of that site.

2.1.2 As the application is not necessary to the management of European sites for nature conservation, the Secretary of State for Department of Business, Energy, and Industrial Strategy as the relevant competent authority, is required to carry out an HRA to ensure that the Proposed Development will not have likely significant effects on European sites.

2.2 HRA Process

Stage 1: Screening

2.2.1 Screening involves the determination of the European sites which could potentially be affected by the Project and their determining interests, and whether or not the Project could result in a likely significant effect on these sites, either alone or in combination with other plans and projects.

2.2.2 HRA case law (the "Dilly Lane" case[3], 2008) determined that mitigation measures that were "incorporated into the project" or which "formed part of the project" could be taken into account at the screening "likely significant effect" test stage of HRA (as long as they were effective). The ruling judge accepted that certain facets of a project, which are intended to avoid or reduce negative impacts on a European site (i.e., mitigation), can still be regarded as "incorporated into the project" if they are promoted that way by the developer.

2.2.3 However, a more recent ruling (Court of Justice of the European Union 'CJEU') People Over Wind and Sweetman v Coillte Teoranta (C-323/17)) concluded that mitigation measures intended to avoid or reduce impacts on a European site could not be regarded as part of the "project" and thus should not be taken into account at the Screening Stage of HRA when judging whether likely significant effects on the integrity of a European site could occur.

2.2.4 The Habitats Regulations Assessment Handbook (DTA Publications Ltd, 2018) has recently been updated in light of this ruling. The handbook concludes that any measures inherently part of the project design (e.g., embedded mitigation) which are not specifically incorporated into the project for ecological reasons, but reduce ecological effects, can be considered at the HRA screening stage. If there is reliance on mitigation measures as part of the project, which would not have been put in place without the presence of a European site, then an Appropriate Assessment is required.

Stage 2: Appropriate Assessment

2.2.5 In the event that Likely Significant Effects are identified at the Screening Stage, on the basis of objective information, an assessment of whether there would be an adverse effect on the integrity of the European site concerned, and the consideration of measures to address this effect, is required.

[3] Hart District Council, R (on the application of) v Secretary of State for Communities & Local Government & Ors [2008]

Only where it is not possible to identify suitable measures to address the identified effects is consideration of Stage 3 and Stage 4 required.

Stage 3: Assessment of Alternatives

2.2.6 The assessment should identify and assess alternatives that have been considered. Alternative solutions could include a project of a different scale, a different location, and an option of not having the scheme at all (the 'do nothing' approach).

Stage 4: Consideration of IROPI

2.2.7 Where it can be demonstrated that there are no alternative solutions to the project that would have a lesser effect or avoid an adverse effect on the integrity of the European site, the project may still be carried out if the competent authority is satisfied that the scheme must be carried out for imperative reasons of overriding public interest ('IROPI').

2.3 Assessment Approach

2.3.1 This HRA has been undertaken in line with *The Habitats Regulations Assessment Handbook* (DTA Publications) and HRA guidance from the UK Government[4]. In relation to specific air quality issues guidance of relevance used to inform this assessment includes: *Advice on Ecological Assessment of Air Quality Impacts* (CIEEM, 2021), and *A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.0* (Holman et al, 2020).

2.3.2 In line with Holman et al (2020), when assessing potential effects to European sites from point source emissions, a search area of 15km from the RRRF stack has been used to identify European sites.

2.3.3 For impacts on terrestrial biodiversity receptors, Holman (2020) recommends adopting Environment Agency guidance AQTAG06[5] for environmental permitting. The emissions from ROP have been modelled using this method for: nitrogen (N), nitrogen oxides (NOx), sulphur dioxide (SO_2), ammonia (NH_3), hydrogen fluoride (HF), and acid.

2.3.4 In terms of the impact of emissions on designated areas, concentrations and deposition rates have been calculated and compared against site relevant critical levels and loads for the habitats in question. An impact of less than 1% of the applicable annual average critical level or load is accepted to be a pragmatic threshold for determining no likely significant effects from a stack source (Holman et al, 2020). For pollutants modelled over short-term periods (weekly or over a 24-hour period), a 10% threshold is used (Holman et al, 2020). It should be noted that an impact of more than 1% (or 10% for pollutants modelled over short-term) is not, per se, an indication that a significant effect exists, only the possibility of one, which would trigger the need for further, more detailed assessment of the ecological sensitivity and value of the habitat.

2.3.5 Where the predicted annual average impact exceeds 1% (or 10% for pollutants modelled over short-term), consideration needs to be given to the overall critical level or load. Where the critical level or load is exceeded, further ecological assessment is required to ascertain the potential significance of the impact and resultant effects.

2.3.6 Critical loads (to be used as standards for the assessment of significance) have been obtained from the Air Pollution Information System ('APIS') website.

[4] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#European-sites

[5] Environment Agency (2014). AQTAG 06, Technical Guidance on Detailed Modelling Approach for an Appropriate Assessment for Emissions to Air, Ji Ping Shi, Environment Agency Air Quality Monitoring and Assessment Unit, Updated version.

In-combination Effects

2.3.7 The potential for in-combination air quality effects is considered to be limited to the main stack emissions from the waste incineration process at the adjacent recently approved REP, given the similar pollutant emissions and discharge characteristics.

2.3.8 Further air quality modelling of cumulative effects from ROP and REP was undertaken to inform this assessment. The in-combination impacts have been quantified through atmospheric dispersion modelling, with reference to the thresholds set out in Section 2.3 above.

2.3.9 Only in-combination effects with REP have been considered given that other approved developments, such as the neighbouring approved application for a Data Centra (reference: 15/02926/OUTM), are not anticipated to cause emissions that would result in potential significant in-combination effects with ROP in relation to air quality associated biodiversity impacts.

3 Habitats Regulation Assessment

3.1 Epping Forest SAC

3.1.1 **Epping Forest SAC** is the only European site identified as requiring consideration within this HRA as it falls within 15km of the Project. The location of the SAC is approximately 12km to the north west of the Project, as shown on **Figure 1** in **Appendix A**.

3.1.2 The SAC is primarily designated for beech woodland habitat, along with heathland and the presence of stag beetle.

3.1.3 The conservation objectives for Epping Forest SAC are to:

"Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:

- *The extent and distribution of qualifying natural habitats and habitats of qualifying species;*
- *The structure and function (including typical species) of qualifying natural habitats;*
- *The structure and function of the habitats of qualifying species;*
- *The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site" (Natural England, 2014).*

3.2 Assessment of Likely Significant Effects

3.2.1 Changes in emissions due to ROP could lead to increases of deposition of compounds with the potential to result in likely significant effects to Epping Forest SAC. Deposition of nitrogen oxides (NOx), sulphur dioxide (SO_2), ammonia (NH_3), hydrogen fluoride (HF), nitrogen (N), and total acid has been calculated from the maximum predicted concentration using the approach in EA guidance AQTAG06. Detailed modelling has been carried out to predict the Process Contribution ('PC') and Predicted Environmental Concentration ('PECs') of relevant pollutants from ROP, and ROP in combination with REP, to Epping Forest SAC. The results of the modelling are provided in **Table 3.1** below.

3.2.2 The predicted contributions have been compared against the relevant critical loads and levels for the most ecologically sensitive habitats within Epping Forest SAC. In line with standard guidance from CIEEM and IAQM, where the annual average critical level or load is already exceeded as a result of the baseline concentrations or deposition rates, a 1% threshold has been used, below which significant effects can be screened out. The 1% threshold is considered in the air quality assessment profession to 'define a reasonable quantum of long-term pollution which is not likely to be discernible from fluctuations in background/measurements' (Holman et al, 2020).

Table 3.1. Predicted Deposition Rates to Epping Forest SAC - Process Contributions and Predicted Environmental Concentrations (annual average unless stated otherwise)

Pollutant (and unit)	Critical Level/ Load	Background	Current RRRF Impact			RRRF post ROP Impact					Cumulative (RRRF post ROP + REP) Impacts				
			PC	PC as % Critical Level/ Load	Total Level/ Load	PC	PC as % of Critical Level/ Load	Absolute Change	Change as % Critical Level/ Load	Total Level / Load	PC	PC as % Critical Level/ Load	Change	Change as % Critical Level/ Load	Total Level/ Load
NOx (µg/m3)	30	**42.2**	0.03	0.1%	42.2	0.03	0.1%	0.00	<0.01%	42.2	0.04	0.15%	0.01	0.04%	42.3
NOx 24-hour (µg/m^3)	75	49.8	1.27	1.7%	51.1	1.20	1.6%	-0.07	-0.1%	51.0	1.69	2.2%	0.41	0.5%	51.5
SO_2 (µg/m^3)	20	1.7	0.01	0.0%	1.70	0.01	0.0%	-0.001	0.0%	1.70	0.01	0.1%	0.00	<0.1%	1.70
NH_3 (µg/m^3)	3	2.7	<0.01	<0.1%	2.7	<0.01	0.1%	<0.01	0.00%	2.7	<0.01	0.1%	<0.01	0.05%	2.7
HF weekly (µg/m^3)	0.5	0.3	<0.01	0.2%	0.3	<0.01	0.2%	<0.01	0.02%	0.3	<0.01	0.3%	<0.01	0.2%	0.3
HF 24-hour (µg/m^3)	5.0	0.3	0.01	0.1%	0.3	0.01	0.1%	<0.01	0.01%	0.3	0.01	0.3%	0.01	0.14%	0.3
Nitrogen (kgN/ha/year)	8	**21.4**	0.01	0.1%	21.4	0.01	0.1%	0.00	0.01%	21.4	0.02	0.25%	0.01	0.11%	21.44
Acid (keq/ha/yr)	1.103	**1.7**	0.00	0.3%	1.7	<0.01	0.2%	<0.01	-0.02%	1.7	<0.01	0.40%	<0.01	0.14%	1.7

3.2.3 The air quality modelling demonstrates that, whilst Epping Forest SAC currently exceeds critical loads or critical levels for annual NOx, Nitrogen, and acid, changes in PCs due to ROP, when compared to the existing baseline, are less than 1% of the annual average critical loads or levels for all modelled pollutants, or less than 10% for the short-term average. In most cases increases are more than an order of magnitude lower than the screening thresholds, and in some cases ROP results in a marginal reduction of pollutants received at the SAC.

3.2.4 When ROP is considered in-combination with REP, the air quality modelling also demonstrates that changes in PCs when compared to the existing baseline, are less than 1% of the annual average critical loads or levels for all modelled pollutants, or less than 10% for the short-term average. Again, the modelling demonstrates increases are more than an order of magnitude lower than the screening thresholds.

3.2.5 The contributions from ROP, or ROP in combination with REP, to Epping Forest SAC are considered negligible and indistinguishable from background variations. Given the predicted increases in all modelled pollutants from ROP either alone, or in combination with REP, are below the relevant screening thresholds, there will be no likely significant effects to Epping Forest SAC.

4 Conclusion

4.1.1 One European site, Epping Forest SAC, has been identified within the ecological zone of influence of the Project (defined as 15km). The potential for effects on Epping Forest SAC were identified as those arising from emissions / deposition of pollutants from the Project.

4.1.2 Based on the results of air quality modelling, none of the process contributions are above the 1% annual screening threshold of the critical level or load (or 10% for short-term emissions) where the critical level or load is exceeded. In most cases increases are more than an order of magnitude lower than the screening thresholds, and in some cases the Project results in a marginal reduction of pollutants received at the SAC.

4.1.3 Given these findings, no Likely Significant Effects to Epping Forest SAC have been identified either alone, or in combination with other plans or projects and no further specific avoidance or mitigation measures have been proposed. As a result, the Project does not require further consideration at Stage 2 Appropriate Assessment.

5 References

APIS (2021). '*Air Pollution Information System*' [online] Available at: http://www.apis.ac.uk/introduction.html

CIEEM, 2021. Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management, Winchester.

DTA Publications. The Habitats Regulations Assessment Handbook and Journal. [online] Available at:

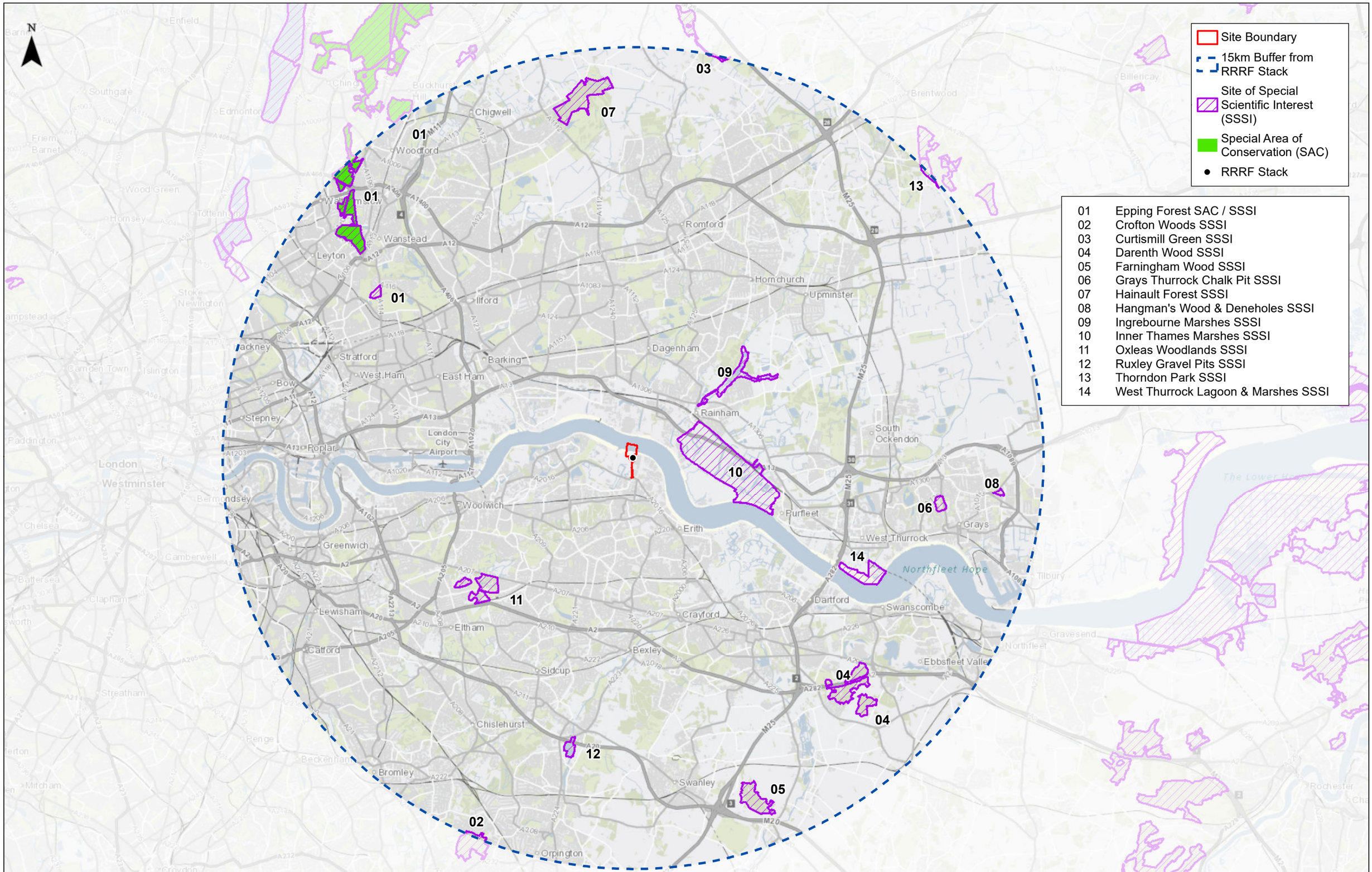
GOV.UK. Habitats regulations assessments: protecting a European site. https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site#European-sites

Holman et. al. (2020) '*Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites*' Version 1.1

Natural England (2014) European Site Conservation Objectives for Epping Forest Special Area of Conservation (SAC)

Appendix A Figures

Figure 1 – Location of European Designated site in relation to Project



Stantec	Client: CORY RIVERSIDE ENERGY	**RIVERSIDE OPTIMISATION PROJECT** International & National Statutory Nature Conservation Designations within 15km	0 5 10 km Contains OS data © Crown Copyright and database right 2020 © Natural England 2021

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