

Riverside Energy Park

Statement of Common Ground: Natural England

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Riverside Energy Park Belvedere

Statement of Common Ground between the Applicant and Natural England

8 May 2019

Revision	Date	Description
Draft	20 December 18	Draft for discussion
Final	8 May19	Further amendments following revised nitrogen deposition rates; Signed by both parties

1 Introduction

1.1 Purpose of this Statement of Common Ground

- 1.1.1 This Statement of Common Ground (SOCG) has been prepared by Cory Environmental Holdings Limited (trading as Cory Riverside Energy ('the Applicant')) and Natural England. For the purposes of this SOCG, the Applicant and Natural England will jointly be referred to as 'the Parties'.
- 1.1.2 The Applicant has applied to the Secretary of State under the Planning Act 2008 for powers to construct, operate and maintain an integrated Energy Park, to be known as Riverside Energy Park (REP). The principal elements of REP comprise complementary energy generating development and an associated Electrical Connection (together referred to as the 'Proposed Development').
- 1.1.3 Preparation of this SOCG has been informed by discussions between the Parties. The purpose of this SOCG is to set out agreed factual information about the Application to facilitate an efficient examination process.
- 1.1.4 This SOCG relates to the following topics/issues:
- Air Quality; and
 - Terrestrial Biodiversity.
- 1.1.5 It also relates to the discussions between the parties with regards to the Habitats Regulations Assessment (HRA) of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)** for the Proposed Development.
- 1.1.6 Natural England makes no comment in respect of all other topics identified in the **Environmental Statement (ES) (6.1-6.4, APP-038-APP-100)** and other Application documents.
- 1.1.7 Overall, this SOCG is intended to give a clear position of the state and extent of agreement between the Parties at the date on which this SOCG is signed and submitted to the Secretary of State.
- 1.1.8 All defined terms and abbreviations, if not defined or explained in this SOCG are defined or explained in the **Project Glossary (1.6, APP-006)**.

1.2 The Application

- 1.2.1 The Application was submitted on 16th November 2018 and accepted by the Secretary of State on 14th December 2019. The Application was accompanied by the **ES (6.1-6.4, APP-038-APP-100)** and a **Habitats Regulations No Significant Effects Report (6.5, APP-101)**.
- 1.2.2 The Parties agree that the ES forms the full and complete Environmental Impact Assessment (EIA) for the purposes of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) and it is further agreed that the ES contains sufficient environmental information to enable the Secretary of State to make his determination.

1.3 The Examination

- 1.3.1 An examination (the Examination) of the Application is to be held pursuant to Chapter 4 of Part 6 of the Planning Act 2008 (the Act) and the Infrastructure Planning (Examination Procedures) Rules 2010 (the EP Rules).

Statement of Common Ground

Statement of Common Ground between the Applicant and Natural England

- 1.3.2 A Preliminary Meeting, pursuant to Rule 7 of the EP Rules, was held on 10th April 2019 at the start of the examination period.

1.4 Description of the Proposed Development

- 1.4.1 The Proposed Development comprises REP and the associated Electrical Connection. These are described in turn, together with the anticipated REP operations, below. **Chapter 3 Project and Site Description** of the **ES (6.1, APP-040)** provides further details of the Proposed Development.

REP

- 1.4.2 REP would be constructed on land immediately adjacent to Cory's existing RRRF, within the LBB and would complement the operation of the existing facility. It would comprise an integrated range of technologies including: waste energy recovery, anaerobic digestion, solar panels and battery storage. The main elements of REP would be as follows:

- **Energy Recovery Facility (ERF):** to provide thermal treatment of Commercial and Industrial residual (non-recyclable) waste with the potential for treatment of (non-recyclable) Municipal Solid Waste ;
- **Anaerobic Digestion facility:** to process food and green waste. Outputs from the Anaerobic Digestion facility would be transferred off-site for use in the agricultural sector as fertiliser or as an alternative, where appropriate, used as a fuel in the ERF to generate electricity;
- **Solar Photovoltaic Installation:** to generate electricity. Installed across a wide extent of the roof of the Main REP building;
- **Battery Storage:** to store and supply additional power to the local distribution network at times of peak electrical demand. This facility would be integrated into the Main REP building; and
- **On Site Combined Heat and Power (CHP) Infrastructure:** to provide an opportunity for local district heating for nearby residential developments and businesses. REP would be CHP Enabled with necessary on site infrastructure included within the REP site.

Electrical Connection

- 1.4.3 REP would be connected to the electricity distribution network via a new 132 kilovolt (kV) underground electricity cable connection. The route options for the Electrical Connection are shown in the **Works Plans (2.2, APP-008)**.
- 1.4.4 In consultation with UK Power Networks, Cory is considering Electrical Connection route options to connect to the existing National Grid Littlebrook substation located south east of the REP site, in Dartford. The route options are located within the LBB and Dartford Borough, and would run from a new substation proposed to be constructed within the REP site.

2 Matters agreed between the Parties

2.1 Introduction

- 2.1.1 The Parties are agreed on all matters and in particular, are agreed on the points set out in this section (**Section 2**).

2.2 Air Quality

- 2.2.1 The scope of the Air Quality assessment is defined within **Section 7.1 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. This description of the topic is an appropriate basis upon which to produce the ES Chapter.

Legislation, Policy Context, Guidance and Standards

- 2.2.2 The policy context, legislation, guidance and standards considered in the assessment of Air Quality are noted in **Chapter 2 Regulatory and Policy Background** of the **ES (6.1, APP-039)** and **Section 7.2 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.
- 2.2.3 The policy context, legislation, guidance and standards considered to inform the Air Quality assessment are appropriate.

Consultation

- 2.2.4 Consultation undertaken with regards to Air Quality is summarised in **Section 7.3 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.
- 2.2.5 The summary of consultation presented is correct so far as it provides an accurate record of consultation with Natural England on Air Quality to date.

Reasonable Worst Case Parameters Used for Assessment

- 2.2.6 The reasonable worst-case parameters used for the assessment of Air Quality are presented in **Section 7.4 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.
- 2.2.7 The reasonable worst-case parameters used for the assessment are considered appropriate for the robust assessment of potential Air Quality impacts arising from the Proposed Development.

Assessment Methodology and Significance Criteria

- 2.2.8 The methodology for Air Quality is presented in **Section 7.5 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. The assessment methodology is considered appropriate.
- 2.2.9 The cumulative assessment methodology for Air Quality is presented in **Section 4.10 of Chapter 4 ES Assessment Methodology** of the **ES (6.1, APP-041)**. The cumulative assessment methodology, is considered appropriate.

Assumptions and Limitations

- 2.2.10 Assumptions made with regards to Air Quality are summarised in **Section 7.6 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.
- 2.2.11 The assumptions presented are considered appropriate.

Baseline Conditions and Receptors

2.2.12 The baseline conditions and receptors for Air Quality are presented in **Section 7.7 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.

2.2.13 The baseline conditions and receptors presented are considered appropriate.

Embedded Mitigation

2.2.14 The embedded mitigation which is those designed to be an inherent part of the scheme for which development consent is sought or those which would be undertaken to meet existing legislative requirements for potential Air Quality effects is set out in **Section 7.8 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.

2.2.15 The embedded mitigation is considered appropriate and adequate, in terms of their nature and scale, to address potential Air Quality effects.

Assessment of Likely Effects

2.2.16 The assessment of effects during construction and decommissioning for Air Quality is presented in **Section 7.9 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. The assessment of effects during construction and decommissioning presented is considered appropriate.

2.2.17 The assessment of effects during operation for Air Quality is presented in **Section 7.9 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. The assessment of effects during operation presented is considered appropriate.

Cumulative Assessment

2.2.18 The assessment of cumulative effects for Air Quality is presented in **Section 7.10 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.

2.2.19 The cumulative effects presented are considered appropriate.

Further Mitigation and Enhancement

2.2.20 The consideration of further mitigation and enhancement measures for Air Quality are presented in **Section 7.11 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. No further mitigation and enhancement has been identified.

2.2.21 The consideration of further mitigation and enhancement measures are appropriate.

Residual Effects and Monitoring

2.2.22 The summary of residual effects for Air Quality is presented in **Section 7.12 of Chapter 7 Air Quality** of the **ES (6.1, APP-044)**.

2.2.23 A schedule of mitigation and monitoring is presented in **Chapter 17 Schedule of Mitigation** of the **ES (6.1, APP-054)**.

2.2.24 The summary of residual effects and monitoring is considered appropriate.

2.3 Terrestrial Biodiversity

2.3.1 The scope of the Terrestrial Biodiversity assessment is defined within **Section 11.1 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**. This description of the topic is an appropriate basis upon which to produce the ES Chapter.

Legislation, Policy Context, Guidance and Standards

2.3.2 The policy context, legislation, guidance and standards considered in the assessment of Terrestrial Biodiversity are noted in **Chapter 2 Regulatory and Policy Background** of the **ES (6.1, APP-039)** and **Section 11.2 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.

2.3.3 The policy context, legislation, guidance and standards considered to inform the Terrestrial Biodiversity assessment are appropriate.

Consultation

2.3.4 Consultation undertaken with regards to Terrestrial Biodiversity is summarised in **Section 11.3 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.

2.3.5 The summary of consultation presented is correct so far as it provides an accurate record of consultation with Natural England on Terrestrial Biodiversity matters to date.

Reasonable Worst Case Parameters Used for Assessment

2.3.6 The reasonable worst-case parameters used for the assessment of Terrestrial Biodiversity are presented in **Section 11.4 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.

2.3.7 The reasonable worst-case parameters used for the assessment are considered appropriate for the robust assessment of potential Terrestrial Biodiversity impacts arising from the Proposed Development.

Assessment Methodology and Significance Criteria

2.3.8 The methodology for Terrestrial Biodiversity is presented in **Section 11.5 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**. The assessment methodology is considered appropriate.

2.3.9 The cumulative assessment methodology for Terrestrial Biodiversity is presented in **Section 4.10 of Chapter 4 ES Assessment Methodology** of the **ES (6.1, APP-041)**. The cumulative assessment methodology, is considered appropriate.

Assumptions and Limitations

2.3.10 Assumptions made with regards to Terrestrial Biodiversity are summarised in **Section 11.6 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.

2.3.11 The assumptions presented are considered appropriate.

Baseline Conditions and Receptors

2.3.12 The baseline conditions and receptors for Terrestrial Biodiversity are presented in **Section 11.7 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.

2.3.13 The baseline conditions and receptors presented are considered appropriate.

Embedded Mitigation

- 2.3.14 The embedded mitigation which is those designed to be an inherent part of the scheme for which development consent is sought or those which would be undertaken to meet existing legislative requirements for potential Terrestrial Biodiversity effects is set out in **Section 11.8 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.
- 2.3.15 The embedded mitigation is considered appropriate and adequate, in terms of their nature and scale, to address potential Terrestrial Biodiversity effects.

Assessment of Likely Effects

- 2.3.16 The assessment of effects during construction and decommissioning for Terrestrial Biodiversity is presented in **Section 11.9 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**. The assessment of effects during construction and decommissioning presented is considered appropriate.
- 2.3.17 The assessment of effects during operation for Terrestrial Biodiversity is presented in **Section 11.9 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**. The assessment of effects during operation presented is considered appropriate.
- 2.3.18 Following submission of the Development Consent Order (DCO) Application, an error was identified by the Applicant within **Chapter 7 Air Quality** of the **ES (6.1; APP-044)** which was used to inform the assessment of effects in **Section 11.9 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**. The error related to the predicted nitrogen deposition rates to ecological receptors. **Table C.2.3.6** within **Appendix C.2 Stack Modelling (6.3, APP-069)** erroneously excluded the contribution to nitrogen deposition from ammonia. An assessment of the potential ecological impacts of the new deposition rates has been undertaken and is presented in **Appendix A – Ecological Assessment of Revised Predicted Nitrogen Deposition Rates** of this SoCG. It is agreed that the predicted effects through nitrogen deposition are Not Significant. The assessment of effects is therefore considered appropriate.

Cumulative Assessment

- 2.3.19 The assessment of cumulative effects for Terrestrial Biodiversity is presented in **Section 11.10 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1; APP-048)**.
- 2.3.20 The cumulative effects presented are considered appropriate.

Further Mitigation and Enhancement

- 2.3.21 The consideration of further mitigation and enhancement measures for Terrestrial Biodiversity are presented in **Section 11.11 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.
- 2.3.22 The **outline Biodiversity and Landscape Mitigation Strategy (BMLS) (7.6, APP-107)** provides a framework from which a final BMLS can be developed, as secured in Requirements 4 and 5 of Schedule 2 of the **draft DCO (3.1, APP-014)**. The **outline BMLS (7.6, APP-107)** includes mitigation measures for potential Terrestrial Biodiversity effects during operation.
- 2.3.23 The consideration of further mitigation and enhancement measures are appropriate.

Residual Effects and Monitoring

- 2.3.24 The summary of residual effects for Terrestrial Biodiversity is presented in **Section 11.12 of Chapter 11 Terrestrial Biodiversity** of the **ES (6.1, APP-048)**.
- 2.3.25 A schedule of mitigation and monitoring is presented in **Chapter 17 Schedule of Mitigation** of the **ES (6.1, APP-054)**.
- 2.3.26 The summary of residual effects is considered appropriate.

2.4 Other Considerations

- 2.4.1 **Chapter 15 Other Considerations** of the **ES (6.1, APP-052)** described other issues which have been considered; and presents an assessment of those other issues.

Lighting

- 2.4.2 **Section 15.4** of **Chapter 15 Other Considerations** of the **ES (6.1, APP-052)** and the Outline Lighting Strategy (**Appendix K.3** of the ES, **6.3, APP-096**) presents consideration given to likely effects of light intrusion from the Proposed Development.
- 2.4.3 The considerations given to likely effects of the Proposed Development are considered appropriate.

2.5 Habitat Regulations Assessment

- 2.5.1 The scope of the Habitat Regulation Assessment (HRA) is defined within the **Habitats Regulations No Significant Effects report (6.5, APP-101)**. The parties are agreed on those matters set out below:

Methodology

- 2.5.2 The methodology for the HRA is presented in **Section 2** of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)**.

- 2.5.3 The assessment methodology is considered appropriate.

HRA Screening Assessment

- 2.5.4 The HRA screening assessment is contained within **Section 1.3** and **1.4** and **Appendix B** of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)**.

- 2.5.5 The HRA screening assessment is considered appropriate.

Assessment of Likely Significant Effects

- 2.5.6 The assessment of effects during construction on any European site is presented in **Section 3.1.2** of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)**. Both parties agree that adequate and sufficient consideration for potential effects on European sites during construction have been undertaken.

- 2.5.7 The assessment of effects during operation on any European site is presented in **Section 3.1.3-3.1.9** of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)**. Both parties agree that adequate and sufficient consideration for potential effects on European sites during the operation of the Proposed Development have been undertaken.

- 2.5.8 Following submission of the DCO Application, an error was identified by the Applicant within **Chapter 7 Air Quality** of the **ES (6.1, APP-044)**. The error related to the predicted nitrogen deposition rates to ecological receptors. **Table C.2.3.6** within **Appendix C.2 Stack Modelling (6.3, APP- 069)** erroneously excluded the contribution to nitrogen deposition from ammonia. The HRA has been amended and is submitted at Deadline 2 (Rev 1) to reflect the revised predicted nitrogen deposition rates. Both parties agree that adequate and sufficient consideration for potential effects on European sites during the construction and operation of the Proposed Development have been undertaken.

Cumulative Assessment

- 2.5.9 The assessment of cumulative effects for any European site is presented in **Section 3.1.10-3.1.13** of the **Habitats Regulations No Significant Effects Report (6.5, APP-101)**. The cumulative effects presented are considered appropriate.

Conclusions

- 2.5.10 Natural England has agreed the HRA methodology used and is content with the finding in the **Habitat Regulations No Significant Effect Report (6.5, APP-101)** which concludes that there is no likely significant effect on designated sites, including in combination with other developments, arising from the Proposed Development.

Statement of Common Ground

Statement of Common Ground between the Applicant and Natural England

2.6 Draft Development Consent Order (DCO)

- 2.6.1 The Parties are agreed on the wording of the operative provisions of the **Draft DCO** (Articles 1 – 43) (**3.1, APP-014**).
- 2.6.2 The Parties are agreed on the wording of the requirements contained in Schedule 2 of the **Draft DCO (3.1, APP-014)** and the procedure for the discharge of requirements contained in Schedule 12 of the **draft DCO (3.1, APP-014)**.

3 Matters yet to be agreed between the Parties

3.1 Introduction

3.1.1 The Parties confirm that there are no areas outstanding and all matters are agreed.

4 Confirmation of Agreement

This SOCG is prepared jointly and agreed by the Parties:

Signed for and on behalf of the Applicant

Date:

8.5.19

Signed for and on behalf of Natural England

Date:

16.5.19

Statement of Common Ground
Statement of Common Ground between the Applicant and Natural England

Appendix A Ecological Assessment of Revised Predicted Nitrogen Deposition Rates

A.1 Introduction

A.1.1 Following submission of the Development Consent Order (DCO) application for the proposed Riverside Energy Park (REP), an error was identified by the Applicant Project Team within **Chapter 7 Air Quality** of the **Environmental Statement (ES) (6.1, APP-044)**. The error related to the predicted nitrogen deposition rates to ecological receptors. **Table C.2.3.6** within **Appendix C.2 Stack Modelling** of the **ES (6.3, APP- 069)** erroneously excluded the contribution to nitrogen deposition from ammonia. This dataset had not been entirely transposed from the source modelling files to the results tables and therefore, was not considered within the analysis presented in paragraph 7.9.43, page 82 of **Chapter 7 Air Quality** of the **ES (6.1; APP-044)**.

A.1.2 This note therefore:

- Amends **Table C.2.3.6** within **Appendix C.2 Stack Modelling** of the **ES (6.3, APP- 069)** and revises the ecological assessment of predicted nitrogen deposition rates included in paragraph 7.9.43, page 82 of **Chapter 7 Air Quality** of the **ES (6.1, APP-044)**;
- Revises the assessment of predicted nitrogen deposition rates on relevant designated ecological sites; and
- Serves to inform a Statement of Common Ground with Natural England.

A.1.3 The updated information and analysis within this note will also be provided to the Examining Authority during the Examination. This will replace the analysis of Nitrogen deposition presented in **Table C.2.3.6** within **Appendix C.2 Stack Modelling** in the submitted REP Environmental Statement (the 'REP ES') (**6.3, APP- 069**). All other pollutant deposition rates reported in the REP ES remain unchanged.

A.2 Revised Predicted Nitrogen Deposition Rates (January 2019)

A.2.1 The predicted nitrogen deposition rates for all Sites of Special Scientific Interest (SSSIs) considered in the REP ES are below the 1% threshold for potential significance¹. The revised predicted nitrogen deposition rates in relation to designated areas are presented in **Table 1** below.

Table 1. Predicted Nitrogen Deposition to designated nature conservation areas (revised figures January 2019)

Site Name	Lower Critical Load (kgN/ha/yr)	Background (kgN/ha/yr)	Process Contribution (kgN/ha/yr)	Process Contribution %	Predicted Environmental Concentration (kgN/ha/yr)	Predicted Environmental Concentration %
International and Nationally Designated Sites						
Inner Thames Marshes (SSSI) /	20	16.9	0.44	2.20%	17.4	87%

¹ See Chapter 7 of the REP ES: Critical loads for designated areas have been taken from APIS. The 1% significance threshold used for SACs and SSSIs and the 100% threshold used for LNRs and SINCs are those recommended within Environment Agency guidance (Air emissions risk assessment for your environmental permit) - <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

Statement of Common Ground

Statement of Common Ground between the Applicant and Natural England

Site Name	Lower Critical Load (kgN/ha/yr)	Background (kgN/ha/yr)	Process Contribution (kgN/ha/yr)	Process Contribution %	Predicted Environmental Concentration (kgN/ha/yr)	Predicted Environmental Concentration %
Rainham Marshes (SSSI/LNR)						
Ingrebourne Marshes (SSSI/LNR)	15	16.9	0.34	2.26%	17.3	115%
Oxleas Woodlands (SSSI)	10	28.3	0.06	0.61%	28.3	283%
Thorndon Park (SSSI)	10	27.6	0.06	0.58%	27.6	276%
Darenth Wood (SSSI)	10	26.3	0.03	0.34%	26.4	264%
Grays Thurrock Chalk Pit (SSSI)	10	24.2	0.03	0.31%	24.3	243%
Farningham Wood (SSSI/LNR)	10	28.7	0.03	0.30%	28.7	287%
Epping Forest (SAC)	10	19.7	0.02	0.20%	19.8	198%
Hainault Forest (SSSI)	10	26.5	0.02	0.19%	26.5	265%
Hangman's Wood & Deneholes (SSSI)	10	24.2	0.02	0.22%	24.2	242%
Epping Forest (SSSI)	8	18.3	0.02	0.20%	18.4	229%
Curtismill Green (SSSI)	20	16.4	0.02	0.08%	16.4	82%
Locally Designated Sites						
Crossness LNR	20	16.4	0.25	1.26%	16.6	83%
BxL16	10	34.4	0.51	5.08%	34.9	349%
BxB114	5	19.3	0.29	5.77%	19.6	392%
BxL07	10	34.4	0.36	3.59%	34.8	348%
Lesnes Abbey Wood LNR	10	28.4	0.22	2.16%	28.6	286%
BxB103	10	28.4	0.18	1.79%	28.6	286%
M039	20	16.9	0.43	2.13%	17.4	87%
M041	20	19.3	0.10	0.48%	19.4	97%

A.2.2 The revised predicted nitrogen deposition rates indicate that the Process Contribution (PC) from REP to Ingrebourne Marshes SSSI is 0.34 kgN/ha/yr and therefore exceeds the 1%

threshold for potential significance (0.15 kgN/ha/yr)) and the total deposition exceeds the current critical load for the site. Therefore, further assessment of *potential* ecological effects is warranted.

- A.2.3 At Inner Thames Marshes SSSI, whilst the Process Contribution (PC) for Nitrogen deposition exceeds the 1% threshold, the PEC² of 87% is below the critical load, and therefore no further assessment is required in accordance with Environment Agency (EA) Guidance (EA guidance AQTAG06).
- A.2.4 The revised figures show predicted nitrogen deposition at all other designated sites assessed and reported in the REP ES either remain below the threshold for potentially significant effects or the designated site does not exceed the critical load, and therefore in accordance with EA guidance AQTAG06 no further assessment is required.

A.3 Assessment of Ecological Impacts at Ingrebourne Marshes SSSI

- A.3.1 At Ingrebourne Marshes SSSI, the predicted PC for NO_x is 2.1% of the critical load (unchanged from figures provided in the REP ES) and the updated predicted PC for nitrogen deposition is 2.3% of the critical load. Ingrebourne Marshes SSSI currently exceeds annual targets for both NO_x (114%) and nitrogen (115%) deposition, although the predicted PCs from REP would not provide the causal factor for this exceedance and would only contribute a small component of the total baseline concentrations (PECs). Whilst the NO_x PC is above the threshold for potential significance, this reflects the annual mean NO_x concentrations (i.e. in the air) whereas the determining factor, which could potentially affect habitats, is the nutrient nitrogen deposition.
- A.3.2 For consistency with Environment Agency (EA) Guidance (EA guidance AQTAG06) both **Chapter 11 Terrestrial Biodiversity** of the REP ES (6.1, APP-048) and **Chapter 7 Air Quality** of the REP ES (6.1, APP-044), use the 1% threshold for identification of potentially significant impacts to SSSIs. The EA guidance uses the 1% level which provides a generic low level threshold to indicate potential significant impacts for all SSSI irrespective of the sensitivity of the habitats or species for which they are designated. This is supported by the Institute of Air Quality Management's Position Statement, as follows:
- 'The use of the 1% threshold in the context of habitats should be used only to screen out impacts that will have an insignificant effect, and it should not be used as a threshold above which damage is implied and is therefore used to conclude that a significant effect is likely. It is instead an indication that there may be potential for a significant effect, but this requires evaluation by a qualified ecologist and with full consideration of the habitat's circumstances³.'*
- A.3.3 During consultation, prior to the submission of the REP Development Consent Order application, Natural England indicated that it considers a 10% threshold as appropriate for identifying potentially significant impacts to SSSIs (email from Natural England Advisor, 1 October 2018). This is over four times the predicted PC of NO_x and nitrogen deposition from REP to Ingrebourne Marshes SSSI. Therefore, whilst the EA's 1% threshold is a useful guide for screening out *potentially* significant impacts, an effect from REP to Ingrebourne Marshes does not equate to a significant impact on an ecological habitat.
- A.3.4 One of the strongest effects of NO_x emissions across the UK is through their contribution to total nitrogen deposition (apis.ac.uk, 2018) and therefore NO_x emissions and nitrogen deposition are intrinsically linked. Nitrogen is a nutrient required by all plants to grow. However excessive nitrogen can have negative impacts to plants and habitats by altering the biochemistry of the plants, or through stimulating the growth of competitive plant species which can reduce species diversity within a habitat (apis.ac.uk, 2018).

² PEC = Predicted Environment Concentration (in this case, total deposition)

³ IAQM (2016). Position Statement – Effect of Air Quality Impacts on Sensitive Habitats

Statement of Common Ground

Statement of Common Ground between the Applicant and Natural England

- A.3.5 Ingrebourne Marshes SSSI is principally a wetland site, supporting one of the most diverse and coherent areas of freshwater marshland in London. The condition assessment for the SSSI (Condition of SSSI Units for Site Ingrebourne Marshes SSSI⁴) concludes that the majority of the SSSI is in 'favourable condition'. However, some areas of the SSSI or 'units' are in 'unfavourable condition', largely due to the presence of invasive species and inappropriate management. The condition assessment does not state that the SSSI units in unfavourable condition are adversely affected by eutrophication, or the prevalence of nutrient loving plants (such as some graminaceous species). This suggests that the conservation status of the habitats for which the SSSI is designated is not adversely affected by the elevated levels of nitrogen which it receives at present.
- A.3.6 Freshwater systems are typically 'phosphorus limited'⁵ meaning that phosphorus is generally scarce and will inhibit the growth of plants even in the presence of abundant nitrogen. Therefore, provided phosphorus concentrations remain low, the predicted minor increase in nitrogen deposition at Ingrebourne Marshes SSSI as a result of the operation of REP is unlikely to give rise to effects, such as through stimulating the growth of competitive plant species. This is supported by APIS which suggests that '*grazing marshes may be less sensitive to atmospheric deposition [of nitrogen]*' than other wetland systems.
- A.3.7 The air quality modelling includes baseline emissions such as those from the existing Riverside Resource Recovery Facility, and the cumulative assessment undertaken for the EIA and reported in **Chapter 4 ES Assessment Methodology** of the **ES (6.1, APP-041)** does not identify significant point source emissions. Therefore, no change to the cumulative effects assessment presented in **Chapter 4 ES Assessment Methodology** of the **ES (6.1, APP-041)** is required.
- A.3.8 For these reasons, adverse effects to the conservation objectives of Ingrebourne Marshes SSSI from the revised levels of nutrient deposition are assessed as Not Significant.

A.4 Proposed Amendments to the REP ES

- A.4.1 Only the data and assessment described in this note require amendments to be made to the REP ES. All other results have been re-checked and no other amendments are required. As a consequence, the proposed amendments to the **REP ES (6.1-6.4, APP-038-APP-100)** are as follows:
- **Chapter 7 Air Quality** of the **REP ES (6.1, APP-044)**, – update Table C.2.3.6 with revised data and paragraph 7.9.43. It is noted that apart from the habitats discussed in this note, this does not affect any of the assessment outcomes, which remain Not Significant.
 - **Chapter 11 Terrestrial Biodiversity** of the **REP ES (6.1, APP-048)** – updated to reflect the information set out in this note. It is noted that this does not affect any of the conclusions in relation to residual effects from emissions and deposition to biodiversity receptors, which remain Not Significant.
- A.4.2 It is proposed that the updated information will be included in an ES Errata to be provided to the Examining Authority during the DCO Examination process.

A.5 Summary and conclusions

- A.5.1 As a consequence of data not having been fully transposed from source modelling files to the analysis tables, an updated ecological assessment relating to nitrogen deposition has been undertaken. At Ingrebourne Marshes SSSI, the predicted PC for nitrogen deposition is 2.3% of

⁴ <https://designatedsites.naturalengland.org.uk>

⁵ Ngai, J. T. and Jefferies R. L. (2004). Nutrient limitation of plant growth and forage quality in Arctic coastal marshes. *Journal of Ecology* (2004) 92, 1001–1010

Statement of Common Ground

Statement of Common Ground between the Applicant and Natural England

the critical load. This exceeds the EA's threshold of 1% which for screening out potential significant effects. Therefore, further ecological assessment of potential effects to habitats within the SSSI from nitrogen deposition has been undertaken. The SSSI does not currently appear to be negatively affected by nitrogen deposition despite already being subject to potentially significant loads. Research suggests freshwater systems can be resilient to nitrogen deposition as such systems are often phosphorus-limited. Effects to the conservation objectives of Ingrebourne Marshes SSSI have therefore been assessed as Not Significant.

- A.5.2 The updated Air Quality information shows predicted nitrogen deposition at all other assessed designated sites remain below the threshold for potentially significant effects, or the designated site does not exceed the critical load, and so no further assessment is required in relation to any other designated sites.

