



Department for  
Business, Energy  
& Industrial Strategy

# Tees Combined Cycle Power Plant

Regulation 63 of the Conservation of Habitats and  
Species Regulations 2017



April 2019

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## Introduction and Background

- 1.1 The Secretary of State for Business, Energy and Industrial Strategy (“the Secretary of State”) has given consideration to the report dated 10 January 2019 of the Examining Authority (“the ExA”), David Richards BSocSci, Dip TP, MRTPI, who conducted an examination into the application (“the Application”) submitted on 22 November 2017 by Sembcorp Utilities (UK) Limited (“the Applicant”) for a Development Consent Order (“the Order”) under section 37 of the Planning Act 2008 (“the 2008 Act”) for the Tees Combined Cycle Power Plant generating station (“the Development”).
- 1.2 The Order, as applied for, would grant development consent for the construction and operation of a Combined Cycle Gas Turbine (“CCGT”) generating station with a gross electrical output of up to 1,748 megawatts (“MWe”) and a net electrical output of up to 1,700 MWe on the site of the former Teesside Power Station, which forms part of the Wilton International site on Teesside.
- 1.3 The Development would comprise:
  - Work No.1A - up to two separate Combined Cycle Gas Turbine (“CCGT”) units of up to 850MWe net electrical output each, with each generating unit including a gas turbine, steam turbine and electricity generator, heat recovery steam generators (“HRSG”); condensers; emission stacks; and main and auxiliary transformers;
  - Work No.1B – cooling infrastructure including up to two banks of hybrid cooling towers; pumps; and sampling and dosing plant;
  - Work No. 2A - associated development in connection with the project including a permanent laydown area, vehicle parking area, internal roadways and footpaths, lighting and signage;
  - Work No. 2B – further associated development including an area reserved for carbon capture, compression and storage, to be laid out as vehicle parking and used for open and covered storage and laydown during construction.
- 1.4 Construction of the Development would proceed under either one of the two following scenarios:
  - i) two CCGT trains of up to 850MWe are built in a single phase of construction to give a total capacity of up to 1700MWe; or
  - ii) one CCGT train of up to 850MW is built and commissioned and within an estimated 5 years of its commercial operation the construction of a further CCGT train of up to 850MWe commences.
- 1.5 The Development is not directly connected with or necessary to the management of any European Site. Therefore, under Regulation 63 of The Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”), the Secretary of State, as the Competent Authority, is required to consider whether the varied development would be likely, either alone or in-combination with other plans and projects, to have a significant effect on a European site. If likely significant effects cannot be ruled out, then the Secretary of State must undertake an Appropriate Assessment (“AA”) addressing the implications for the European Site in view of its conservation objectives. In the light of any such assessment, the Secretary of State may grant development consent only if it has been ascertained that the varied development will not, either on its own or in-combination with other plans and projects, adversely affect the integrity of such a site, unless there are no feasible alternatives or imperative reasons of overriding public interest apply. Collectively, this process is known as a Habitats Regulations Assessment (“HRA”).

- 1.6 The Secretary of State has used a number of information sources to inform this HRA. Documents referred to in this HRA include: The ExA's Report; the ExA's Report on the Implications for European Sites (RIES); and the Applicant's Environmental Statement, including Annex H: Habitats Regulations Assessment – No Significant Effects Report (NSER). The Secretary of State has also taken into consideration the HRA specific representations received during the examination and during the determination period from the Applicant (including a HRA Addendum at Deadline 7 and a letter to BEIS on 18 February 2019) and the Statutory Nature Conservation Body, Natural England. Key information from these documents is summarised and referenced in this report. All documents are available in full on the Planning Inspectorate's website<sup>1</sup>.

### **Effects of the Development on European sites**

- 2.1 European sites have the potential to be affected by air emissions during the development's operational phase, specifically by increases in nutrient nitrogen deposition, acid deposition and atmospheric concentrations of oxides of nitrogen (NO<sub>x</sub>).
- 2.2 Other secondary effects (e.g. noise, lighting, presence of workforce) do not need to be considered further due to the lack of connectivity, and/or distance between the European sites and the Development (the nearest European site is approximately 2.8 km to the northwest of the Development).
- 2.3 It is noted that the Development site would be hydrologically connected to the River Tees, which runs through the Teesmouth and Cleveland Coast SPA, pSPA, Ramsar and proposed Ramsar. However, an existing discharge consent would regulate the development's emissions to water. As such, water emissions are not likely to have a significant effect (alone and in-combination) on any European sites.
- 2.4 Only the effect of air emissions is taken forward for further assessment.

### **Identification of European sites**

- 3.1 The NSER used a 15km radius from the development to identify the European Sites for assessment. Due to the 15km limit, no transboundary sites were taken forward for assessment. The use of a 15km radius follows air emission guidance published by Department for Environment, Food & Rural Affairs ("DEFRA") and the Environment Agency ("EA")<sup>2</sup>. All sites identified within this radius are listed below.
- Teesmouth and Cleveland Coast Special Protection Area (SPA);
  - Teesmouth and Cleveland Coast potential SPA (pSPA) (which should be treated in the same way as a fully designated site);
  - Teesmouth and Cleveland Coast Ramsar site and proposed Ramsar Extension;
  - North York Moors Special Area of Conservation (SAC); and
  - North York Moors SPA.
- 3.2 Reasons for designation and conservation objectives for each site have been provided in Table H2.1 of the NSER. Since the NSER was submitted, the conservation objectives<sup>3</sup> for the Teesmouth and Cleveland Coast SPA and pSPA have been

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<sup>1</sup> <https://infrastructure.planninginspectorate.gov.uk/projects/north-east/tees-ccpp/?ipcsection=docs>

<sup>2</sup> <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

<sup>3</sup> <http://publications.naturalengland.org.uk/publication/6619918699069440>

updated to have regard to a recent consultation<sup>4</sup> initiated by Natural England on the Teesmouth and Cleveland Coast SPA and Ramsar site<sup>5</sup>. The Applicant submitted a HRA Addendum at Deadline 7 to account for these changes. At the request of the Secretary of State, the Applicant also provided additional information on the HRA Addendum during the determination period (letter dated 18 February 2018,). This has been made available on the Planning Inspectorate's website.<sup>1</sup>

## Air Emissions Assessment Guidelines

- 4.1 To determine the increase in air emissions from the development, the applicant modelled the concentrations of pollutants at each site using dispersion modelling techniques. Two key outputs modelled were the predicted environmental concentration of each pollutant (PEC) and the development's process contribution (PC) to that.
- 4.2 Information about the relative sensitivity to the modelled air pollutants of the European sites' qualifying interest habitats and plant species, and habitats supporting qualifying interest fauna species, was then obtained from the Air Pollution Information System (APIS)<sup>6</sup>.
- 4.3 The critical levels<sup>7</sup> and critical loads<sup>8</sup>, used as tools for helping to assess the risk of air pollutants on habitats, were obtained from APIS. Critical levels (e.g. for effects from NO<sub>x</sub>) are not assessed on a habitat or species-specific basis; rather they are assessed against standards which are applied for all habitat types and locations. For NO<sub>x</sub>, these standards are 30 µg m<sup>-3</sup> as an annual average. Effects relating to acid and nutrient nitrogen deposition are considered on a habitat and species-specific approach, against the specific critical loads listed in APIS.
- 4.4 The screening approach to determine whether the PCs were insignificant, or required further assessment, was undertaken by comparing the PCs, and where necessary PECs, against the percentages of the critical levels / loads as set out in guidance from DEFRA and the Environment Agency called "Air emissions risk assessment for your environmental permit" ("DEFRA/EA Guidance"). This guidance provides a significance criterion of 10% of the relevant short-term benchmark, (critical level and/or critical load), if available, and 1% of the relevant short-term benchmark. If the short-term benchmark is exceeded, further detailed modelling is required. However, the guidance also states that if the long-term benchmark is under 1% of the environmental standard and the PEC is less than 70% of the environmental standard, then emissions are considered to be insignificant, but in-combination effects must still be considered further. This is also the case in situations where the long-term environmental standard is breached but the PEC is calculated to be less than 70%.

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<sup>4</sup> <https://consult.defra.gov.uk/natural-england-marine/teesmouth-and-cleveland-coast-potential-sp/>

<sup>5</sup> Ramsar sites do not have conservation objectives. The proposed Teesmouth and Cleveland Coast Ramsar extension will not extend beyond the boundaries of the pSPA. The purpose of the extension is to afford the same protection to habitats protected by the pSPA.

<sup>6</sup> <http://www.apis.ac.uk/>

<sup>7</sup> Critical levels are defined as "concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge".

(Source: [www.unep.org/ehp/WorkingGroups/wqe/definitions.htm](http://www.unep.org/ehp/WorkingGroups/wqe/definitions.htm))

<sup>8</sup> Critical Loads are defined as: "a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge"

(Source: [www.unep.org/ehp/WorkingGroups/wqe/definitions.htm](http://www.unep.org/ehp/WorkingGroups/wqe/definitions.htm))

## Likely Significant Effects

- 5.1 The Applicant considers that the development, alone and in-combination, is not likely to have a significant effect on any European site. During the examination, all relevant parties agreed that the scientific principles underpinning this conclusion were appropriate and this agreement was captured in the ExA's recommendation to the Secretary of State. However, parties were unable to conclusively agree on whether this assessment should be used to satisfy the likely significant effects test, or whether it should be carried through to an Appropriate Assessment.
- 5.2 This discussion developed in the light of the case *People Over Wind, Peter Sweetman v Coillte Teoranta* ("the Sweetman Judgement")<sup>9</sup>, issued on 12 April 2018, which ruled that mitigation measures (referred to in the judgment as measures which are intended to avoid or reduce effects) should be assessed within the framework of an Appropriate Assessment and that it is not permissible to take account of measures intended to avoid or reduce the harmful effects of the plan or project on a European site at the point of determining likely significant effects.
- 5.3 The Development has been designed to include turbines and a stack height that have the effect of minimising the impact of air emissions to the surrounding environment. It is the Applicant's view that these design parameters should not be classed as mitigation measures as referred to in the Sweetman Judgement, but rather they should be considered to be "embedded measures".
- 5.4 The ExA sought to test this view by consulting Natural England during the Examination. In response, Natural England stated that the Sweetman Judgement was a recent ruling and that there is currently little guidance from the courts as to what constitutes avoidance or reduction measures. Natural England advised that where the Competent Authority is unsure whether certain matters are avoidance or reduction measures, it should consider whether to carry out an AA to avoid legal challenge.
- 5.5 Due to this uncertainty, and in line with the precautionary principle, the ExA considered it necessary to report its findings in a format that could be used to inform an Appropriate Assessment by providing "Stage 2 Screening Integrity Matrices" for all European sites considered.
- 5.6 Having considered the above matter, the Secretary of State notes the advice of Natural England, and the approach adopted by the ExA in its recommendation in respect of the definition of mitigation measures. The Secretary of State also notes and agrees with the ExA that, notwithstanding these points, sufficient information has been provided by the Applicant to enable an Appropriate Assessment to be undertaken. Therefore, the Secretary of State has proceeded to carry out an Appropriate Assessment in this case.

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<sup>9</sup> <http://curia.europa.eu/juris/document/document.jsf?docid=200970&doclang=EN>

## Appropriate Assessment – Development Alone

### Teesmouth and Cleveland Coast SPA, pSPA, Ramsar and proposed Ramsar extension (“the Teesmouth and Cleveland Coast Sites”)

- 6.1 This section has been undertaken in view of the information provided by the Applicant on Teesmouth and Cleveland Coast SPA, pSPA, Ramsar and proposed Ramsar extension, including site conservation objectives.
- 6.2 To avoid repetition the Secretary of State has undertaken the Appropriate Assessment initially with regards to the pSPA, but his conclusions can be applied across all of the Teesmouth and Cleveland Coast sites. All four site designations lie entirely within the extent of the pSPA boundaries. The pSPA affords protection to the same species as the other sites, with some additions<sup>10</sup>.
- 6.3 The Teesmouth and Cleveland Coast pSPA protects a range of wetland birds. Changes to air quality are known to indirectly effect these bird species by impacting their supporting habitat through increases in nutrient nitrogen deposition, acid deposition and atmospheric concentrations of oxides of nitrogen (NOx).
- 6.4 The Applicant modelled the maximum load from each pollutant from the project alone (i.e. the PC) on the pSPA and compared this with the critical loads and critical levels of the habitat types supporting the protected bird species. This was then compared to the significance criteria outlined in the above mentioned DEFRA/EA guidance. The results are outlined below:

#### *NOx*

- 6.5 The development’s annual mean NOx PC was modelled at 1.25% of the critical level. The short term 24 hour mean PC was modelled at 7.3%. Therefore the short-term predictions fell below the 10% significance criteria but the annual mean process contribution was predicted to be just over the 1% significance criteria. However, because the background levels of NOx at the Teesmouth and Cleveland Coast sites are sufficiently low (PEC = 67%) the Applicant concluded that NOx from the project alone would not give rise to significant effects (i.e. because overall, the project’s contribution (considered alone) would not bring the PEC above 70% of the critical level). The Secretary of State agrees with this conclusion.

#### *Nitrogen and Acid Deposition*

- 6.6 Nitrogen and acid deposition were modelled as an annual mean only (DEFRA/EA guidance recommends use of short term modelling only “where available”). For both pollutants rates were estimated to be below 1% of the most stringent critical load of any of the supporting habitat types. On this basis the Applicant concluded that the nitrogen deposition from the project alone would not likely give rise to significant effects. The Secretary of State agrees with this conclusion.

#### *Conclusions – Development alone*

- 6.7 On the basis of the above analysis, the Secretary of State is satisfied that operational air emissions from the Development alone, will not have an adverse effect on the integrity of the Teesmouth and Cleveland Coast sites.

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<sup>10</sup> A full list of qualifying features and supporting habitats is provided in the NSER and HRA Addendum



## North York Moors SAC and North York Moors SPA (“the North York Moors Sites”)

- 6.8 This section has been undertaken in view of the information provided by the Applicant on the North York Moors SAC and North York Moors SPA, including site conservation objectives.<sup>11</sup>
- 6.9 Due to the overlap in location and the overlap in the protection afforded to SAC habitats and SPA supporting habitats, the Secretary of State has considered these sites together.

### *NOx*

- 6.10 The development’s annual mean NOx PC was modelled at 0.74% of the critical level. The short-term 24 hour mean PC was modelled at 12%. Therefore, the long-term predictions fell below the 1% significance criteria, but the short-term process contribution was predicted to be just over the 10% significance criteria. However, in view of the long-term modelling outputs, and because the background levels of NOx at the North York Moors sites are sufficiently low (PEC = 42%) the Applicant concluded that NOx from the project alone would not give rise to significant effects (i.e. because overall, the project’s contribution (considered alone) would not bring the PEC above 70% of the critical level). The Secretary of State agrees with this conclusion.

### *Nitrogen and Acid Deposition*

- 6.11 Nitrogen and acid deposition were modelled as an annual mean. For both pollutants rates were estimated to be below 1% of the most stringent critical load of any of the supporting habitat types. On this basis the Applicant concluded that the nitrogen deposition from the project alone would not likely give rise to significant effects. The Secretary of State agrees with this conclusion.

### *Conclusions – Development alone*

- 6.12 On the basis of the above analysis, the Secretary of State is satisfied that operational air emissions from the Development alone, will not have an adverse effect on the integrity of the North York Moors sites.

## **Appropriate Assessment – Development In-combination**

- 7.1 Under the Habitats Regulations, an Appropriate Assessment is required to include an in-combination assessment to determine whether a plan or project will have an adverse effect of the integrity of any European site due to the combined effects with other plans/ projects.
- 7.2 The Applicant’s approach to considering potential in-combination effects from emissions to air is outlined within its NSER. In-combination effects with the following projects were considered by the Applicant:
- North Sea Pipelines Ltd (ConocoPhillips) CCGT/CHP facility at Seal Sands (“North Sea Pipelines project”);

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<sup>11</sup> A full list of qualifying features and supporting habitats is provided in the NSER



- MGT biomass facility (aka Tees Renewable Energy Plant); and
  - Thor Cogeneration Plant, north of the Tees.
- 7.3 Thor Cogeneration Plant had its licence revoked in August 2013 and the consent for the North Sea Pipelines project lapsed before implementation (as clarified by the Applicant in a post-examination letter to BEIS on 18 February 2019). As such, both projects were not considered further in the in-combination assessment. The NSER therefore focused on the potential for in-combination effects from Development together with the MGT biomass facility, which lies 3.53km south from the Development.
- 7.4 The NSER concluded that there is no potential for likely significant effects on the Teesmouth and Cleveland Coast SPA, pSPA and Ramsar site and the North York Moors SPA and SAC in-combination with the Development. These conclusions were made on the basis that:
- The Secretary of State’s decision letter in respect to the MGT biomass facility stated that there would be no likely significant effects on the interest features of the Teesmouth and Cleveland Coast SPA and Ramsar sites and that an AA was not required.<sup>12</sup>
  - MGT biomass facility will be operating concurrently, and, because the two projects would not be co-located, any impacts would be anticipated to arise at different locations. Should emissions overlap, the smaller MGT project would be expected to contribute a smaller, or at worst, a similar level of air emissions as the Development. On this basis the cumulative PEC would still be well within the standard and so there will be no significant cumulative effects.
  - The major influences on the identified European sites are considered by the Applicant to be from other pollutant sources, such as agriculture, transport and transboundary sources. The Applicant considered it to be very unlikely that insignificant air pollutant contributions from the Development could combine with insignificant contributions from other developments to result in significant effects on the identified European sites.
- 7.5 To add further support to this conclusion the Applicant provided information to demonstrate that UK air quality has generally been improving in the long term, with substantial improvements since the 1960s-80s in terms of sulphur dioxide, oxides of nitrogen and transboundary pollution. The Applicant explained that this trend is continuing, particularly in regard to industrial facilities as a result of the Industrial Emissions Directive (which promotes continued emissions improvement with the adoption of Best Available Techniques (“BAT”) in all such facilities). Therefore, the Applicant considers that overall air pollution and deposition at the affected European sites would continue to reduce, in line with national trends. The Applicant has cited a document published by Defra<sup>13</sup> in support of this position.
- 7.6 It is noted that the Applicant did not provide a quantitative in-combination assessment (e.g. numerical estimates of the small increments attributed to each project). Rather the above assessment has been made on a qualitative basis alone.

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<sup>12</sup> By extension, the MGT biomass facility was not determined to have a likely significant effect (alone and in-combination) on any other European site

<sup>13</sup> Defra (2017) Air Pollution in the UK 2016 [https://ukair.defra.gov.uk/assets/documents/annualreport/air\\_pollution\\_uk\\_2016\\_issue\\_1.pdf](https://ukair.defra.gov.uk/assets/documents/annualreport/air_pollution_uk_2016_issue_1.pdf)

Throughout the examination, the ExA made efforts to test how this qualitative in-combination assessment complied with the case of *Wealden District Council v Secretary of State for Communities and Local Government* (“the Wealden Judgement”), issued on 20 March 2017. This decision highlighted the requirement to undertake an in-combination assessment in relation to plans and projects which, alone, have air quality impacts falling below a particular threshold.

- 7.7 In response to the ExA’s questioning, the Applicant stated that the Wealdon judgment did not stipulate whether such an in-combination assessment should be qualitative or quantitative. This statement was noted by the ExA to be correct and the applicant’s in-combination assessment was taken forward in its recommendation to the Secretary of State.
- 7.8 During the Examination, Natural England, the Environment Agency and Redcar and Cleveland Borough Council all confirmed agreement that all relevant plans/projects which may result in in-combination effects together with the Development have been identified and considered by the Applicant in the NSER. Natural England also confirmed that there would be no significant effects, either alone or in-combination, on any European sites arising from the proposed project. Natural England stated that in reaching this conclusion, it had specifically considered the expected continued decline in background levels from pollution sources no longer in operation; and the predicted low levels of contributions from the Development, which are not expected to make a significant difference to the features for which the sites were designated.

### **Secretary of State’s Conclusions**

- 8.1 Having considered the above assessment, the advice of Natural England and the recommendation by the ExA, the Secretary of State has concluded that the Development will not have an adverse effect on the integrity of any European site. He is satisfied that emissions from the development alone will fall within the category considered as insignificant by the EA and DEFRA as per released guidance. Furthermore, he agrees with the Applicant and Natural England that significant in-combination effects are unlikely to occur as a result from this project. This is in view of observed and expected continued declining background pollutant levels and also the limited scope for the impacts from the development alone to cumulate with impacts from the other developments assessed.