

Tees CCPP Project

The Tees Combined Cycle Power Plant Project

Land at the Wilton International Site, Teesside

Applicant's Comments on the Environment Agency's Written Representations

Examination Deadline 3

The Planning Act 2008 (as amended)



Applicant: Sembcorp Utilities (UK) Limited
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GLOSSARY

Abbreviation	Description
AGI	Above Ground Installation
AIL	abnormal indivisible loads
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AOD	above ordnance datum
AQMA	Air Quality Management Areas
ASI	Accompanied Site Inspection
BAT	Best Available Techniques
BCA	Bilateral Connection Agreement
BCA	Bilateral Connection Agreement
CAA	the Civil Aviation Authority
CCR	Carbon Capture Readiness
CCS	Considerate Constructors Scheme
CCS	Considerate Constructors Scheme
CEA	cumulative effects assessment
CEMP	Construction Environmental Management Plan
CEMS	Continuous Emission Monitoring System
CEMS	Continuous Emission Monitoring System
CHP	Combined Heat and Power
CL	Critical Load/Level
CoCP	Code of Construction Practice
ConsAg	Construction Agreement
CTMP	Construction Traffic Management Plan
CTMP	Construction Transport Management Plan
DCO	Development Consent Order
dDCO	draft Development Consent Order
DMRB	Design Manual for Roads and Bridges
EA	Environment Agency
EA	Environment Agency
EM	Explanatory Memorandum
EMF	electromagnetic fields
EN-1	National Policy Statement for Energy
EPC	Engineering, Procurement and Construction
ES	Environmental Statement
ES	Environmental Statement
FRA	Flood Risk Assessment
GLVIA3	Guidelines for Landscape and Visual Impact Assessment, Third Edition
HER	Historic Environment Record
HIA	Health Impact Assessment
HRA	Habitats Regulations Assessment
HRSG	heat recovery steam generator
HSE	Health and Safety Executive

Abbreviation	Description
IAQM	Air Quality Management
ICNIRP	International Commission on Non-Ionising Radiation Protection
IEMA	Institute of Environmental Management and Assessment
LAQM	Local Air Quality Management
LSE	likely significant effects
LVIA	landscape and visual impact assessment
MMP	Materials Management Plan
NCA	National Character Areas
NE	Natural England
NE	Natural England
NGET	National Grid Electricity Transmission Plc
NGG	National Grid Gas
NO ₂	nitrogen dioxide
NO _x	nitrogen
NPS	National Policy Statement
NPS	National Policy Statement
NTS	National Transmission System
NTS	National Transmission System
PA 2008	Planning Act 2008
PEC/CL	Predicted Environmental Concentration/Critical Load
PEIR	Preliminary Environmental Impact Report
RCBC	Redcar and Cleveland Borough Council
SNR	Strategic Road Network
SPA	Special Protection Area
SPD	Supplementary Planning Document
SWMP	Site Waste Management Plan
SWMP	Site Waste Management Plan
TA	Transport Assessment
TRA	Transmission Related Agreement
TRA	Transmission Related Agreement
TVWT	Tees Valley Wildlife Trust
WFD	Water Framework Directive

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1 INTRODUCTION

Overview

- 1.1 This document has been prepared on behalf of Sembcorp Utilities (UK) Limited ('SCU' or the 'Applicant') in respect of its application (the 'Application') for a Development Consent Order (a 'DCO'). The Application was accepted for examination by the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy on 18 December 2017. The Examination began on 10 April 2018.
- 1.2 SCU is seeking a DCO for the construction, operation and maintenance of a new gas-fired electricity generating station with a nominal net electrical output capacity of up to 1,700 megawatts ('MW') at ISO conditions (the 'Project' or 'Proposed Development'), on the site of the former Teesside Power Station, which forms part of the Wilton International Site, Teesside.
- 1.3 A DCO is required for the Proposed Development as it falls within the definition and thresholds for a 'Nationally Significant Infrastructure Project' (a 'NSIP') under Sections 14 and 15(2) of the Planning Act 2008 ('PA 2008').
- 1.4 The DCO, if made by the SoS, would be known as the 'Tees Combined Cycle Power Plant Order' (the 'Order').

SCU

- 1.5 SCU provides vital utilities and services to major international process industry customers on the Wilton International site on Teesside. Part of Sembcorp Industries, a Singapore-based group providing energy, water and marine services globally, Sembcorp Utilities UK also owns some of the industrial development land on the near 810 hectares (2,000 acre) site which is marketed to energy intensive industries worldwide.
- 1.6 SCU owns the land required for the Proposed Development.

The Project Site

- 1.7 The Project Site (the 'Site') is on the south west side of the Wilton International Site, adjacent to the A1053. The Site lies entirely within the administrative area of Redcar and Cleveland Borough Council ('RCBC') which is a unitary authority.
- 1.8 Historically the Site accommodated a 1,875 MW Combined Cycle Gas Turbine power station (the former Teesside Power Station) with the ability to generate steam for utilisation within the wider Wilton International site. The Teesside Power Station ceased generation in 2013 and was demolished between 2013 and 2015.
- 1.9 SCU has identified the Site, based on its historical land use and the availability of natural gas supply and electricity grid connections and utilities as a suitable location for the Project. In summary, the benefits of the Site include:
 - brownfield land that has previously been used for power generation;
 - on-site gas connection, supplied from existing National Grid Gas Plc infrastructure;
 - on-site electrical connection, utilising existing National Grid Electricity Transmission infrastructure;
 - existing internal access roads connecting to a robust public road network;
 - availability of a cooling water supply using an existing contracted supply (from the Wilton Site mains) and existing permitted discharge consent for effluent to the site drainage system
 - screening provided by an existing southern noise control wall, approximately 6 m in height;
 - potential for future Combined Heat and Power ('CHP') and Carbon Capture and Storage ('CCS'); and
 - existing services, including drainage.

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1.10 A more detailed description of the Site is provided at Chapter 3 'Description of the Site' of the Environmental Statement ('ES') Volume 1 (Application Document Ref. 6.2.3).

The Proposed Development

1.11 The main components of the 'Proposed Development' are summarised below:

- **Work No. 1** - a natural gas fired electricity generating station located on land within the Wilton International site, Teesside, which includes the site of a former CCGT power station, with a nominal net electrical output capacity of up to 1,700 MWe at ISO Conditions; and
- **Work No. 2** - associated development comprising within the meaning of section 115(2) of the 2008 Act in connection with the nationally significant infrastructure project referred to in Work No. 1.

1.12 Please refer to Schedule 1 of the Draft DCO (Application Document Ref. 2.1) for more detail.

1.13 It is anticipated that subject to the DCO having been made by the SoS (and a final investment decision by SCU), construction work on the Project would commence in around the second half of 2019. The construction of the Project could proceed under one of two scenarios, based on SCU's financial modelling, as follows:

- **'Scenario One'**: two CCGT 'trains' of up to 850 MW are built in a single phase of construction to give a total capacity of up to 1,700 MW; and
- **'Scenario Two'**: one CCGT train of up to 850 MW is built and commissioned. Within an estimated five years of its commercial operation the construction of a further CCGT train of up to 850 MWe commences.

1.14 The above scenarios have been fully assessed within the ES.

1.15 A more detailed description of the Project is provided at Schedule 1 'Authorised Development' of the draft DCO (Application Document Ref. 2.1) and Chapter 5 'Project Description' of the ES Volume 1 (Application Document Ref. 6.2.5).

The purpose and structure of this document

1.16 This document forms part of a package of documents submitted by the Applicant for Deadline 3 of the Examination. It sets out the Applicant's comments on the Environment Agency's ('EA') written representations – see Section 2 of this report.

2 THE APPLICANT'S COMMENTS

- 2.1 The Applicant's comments on the EA's written representations are set out in Table 2.1 on the following pages.

Table 2.1 – Environment Agency's written representations

Section/paragraph	Issue	Applicant's comments
1.1 Carbon Capture and Storage ('CCS')	<p>The Carbon Capture Readiness Statement was submitted as part of the DCO application. The written representations stage has been our first opportunity to review this document. We have assessed the Carbon Capture Readiness Statement and have the following comments:</p> <p><u>Insufficient Information Submitted</u> The applicant has NOT provided sufficient information to demonstrate whether there is sufficient space to accommodate the carbon capture plant (CCP) and whether it is technically feasible to retrofit the carbon capture technology selected.</p> <p>The Environment Agency's (EA) role is to provide advice to the consenting authority as to whether the applicant has adequately demonstrated that 'there are no foreseeable barriers' to carbon capture with regards to space or technical feasibility.</p> <p>Since the publication of the DECC (2009) Carbon Capture Readiness guidance, the minimum footprint requirement for CCP has been reviewed downwards by Florin and Fennel of Imperial College London (2010). This work is available on the GOV.UK website: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47932/553-imperial-college-review-ccr-guidance.pdf</p> <p>Despite this change in guidance, the EA considers that the space currently allocated to the carbon capture plant is too small. Therefore, the applicant will need to set aside further land or provide detailed evidence that the CCP could be accommodated in the space allocated. This may be difficult to demonstrate given that the current guidance (Florin and Fennel 2010) shows that even with detailed engineering design, the space required could only be reduced to 6.5 Ha, and not to the 5.4 Ha proposed by the applicant.</p> <p>The DECC Carbon Capture Readiness (CCR) (2009) guidance states that "<i>Applicants should submit the required assessments demonstrating CCR as part of their initial Section 36 consent application with its supporting documentation. The assessments should not be considered supplementary information which can be submitted at a later stage. Together with the rest of the Section 36 application material, these assessments will be public documents. This guidance also explains the level of information which applicants can reasonably be asked to submit in the demonstration of CCR when applying for Section 36 consent</i>".</p> <p><u>Suggested solution:</u> The applicant should submit the information required by the form "Environment Agency verification of CCS Readiness New Natural Gas Combined Cycle Power Station Using Post-Combustion Solvent Scrubbing", as outlined in Annex C of the Department of Energy and Climate Change (DECC) (2009) Carbon Capture Readiness guidance, for assessment.</p> <p>The required information is detailed in Annex C of the DECC Carbon Capture Readiness guidance (2009), which is at the following link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf</p> <p>Information must be submitted in relation to:</p> <ul style="list-style-type: none"> • Design, planning permissions and approvals; • Power plant location; • Space requirements; 	<p>Noting the EA's comments on space requirements, the Applicant will commission a report to review the technical CCR proposal in respect of available space and design feasibility.</p>

Section/paragraph	Issue	Applicant's comments
	<ul style="list-style-type: none"> • Gas turbine operation and increase exhaust pressure; • Flue gas system; • Steam cycle; • Cooling waste; • Compressed air system; • Raw water pre-treatment plant; • Demineralisation /desalination plant; and • Waste water treatment <p>This information must be submitted to enable the EA to determine whether it is technically feasible to retrofit the carbon capture technology selected.</p> <p>The applicant should reconsider the space allocated to CCP, and either increase the allocated plot size, or provide detailed evidence that the CCP will be able to be accommodated within the space allocated.</p> <p>An approach taken at another plant involved engaging the services of Florin and Fennel, to review their technical CCR proposals and to write a report confirming whether they considered the space available and the design was feasible. The EA accepted this report as part of the DCO consultation process. This approach should be considered by the applicant.</p>	
<p>1.2 Air Emissions/Air Quality and Stack Height and Stack Diameter</p>	<p>Air impact modelling data for a minimum stack height of 75m and maximum stack diameter of 8m has been submitted.</p> <p>The applicant has not considered the technical feasibility of reducing the stack diameter to aid environmental monitoring of emissions, and to increase the exit velocity from the stack to improve dispersion. Emissions from the site must be controlled to levels which are below the relevant exposure criteria which are protective of human health and the environment. This issue must be addressed in the DCO.</p> <p>The EA will assess the air quality risk assessments and take into consideration the impacts of the proposed development on internationally designated sites, non-statutory sites and protected habitats in the vicinity of the application site, as part of the determination of the Environmental Permit application. It should be noted that we cannot prejudge the application for an Environmental Permit at this stage.</p>	<p>This detail can only be considered when a specific gas turbine technology is selected. We expect to have selected the technology and associated balance of equipment by September 2018. From this point we would undertake some initial design work and further air dispersion modelling. We would propose to submit an EA Permit application once this work is concluded and DCO is received, which is likely to be sometime in Q1 2019 on current forecast.</p> <p>Please also refer to the Applicant's Response to Examining Authority's Written Questions Q1.1.26 and Q1.8.1 (Application Document Ref: 8.6) submitted at Deadline 2 of the Examination.</p>
<p>1.3 Combined Heat and Power (CHP)</p>	<p>The applicant has stated that the proposed plant will be CHP Ready and have given a commitment to conduct regular reviews for CHP opportunities. The limited CHP Assessment shows that opportunities for the supply of heat are primarily dependent on the medium to long term plan to attract new energy intensive customers to the Wilton International site, and engagement with the South Tees District Heating project, currently at the feasibility study stage.</p> <p>We would encourage the applicant to actively support/ help drive the South Tees District Heating Scheme, ensuring the scheme includes their nearest neighbours at Lazenby village and Normanby, which encompass residential areas and nursing homes. The Tees Valley City Deal, proposed by Tees Valley Unlimited, describes the South Tees District Heating scheme as taking industrial heat from Wilton International to supply homes, local authority buildings and a large hospital, and is currently completing the final stages of scheme feasibility. An active, central involvement in this scheme would satisfy our requirement for the applicant to consider the potential economic opportunities to supply heat to a wide search radius, as part of the Environmental Permit.</p>	<p>The Applicant is actively involved in the South Tees District Heating Scheme and sits on the Steering Committee.</p>
<p>1.4 Construction</p>	<p>We advise that the wording of Requirement 13 (1) Construction environment management plan of the draft Development Consent Order is amended so that the EA are consulted by the</p>	<p>The Applicant will amend Requirement 13 (1) to refer to the consultation with the EA.</p>

Section/paragraph	Issue	Applicant's comments
Environmental Management Plan (CEMP)	planning authority on the CEMP.	
1.5 Environmental Permit	<p>The development will require an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010 from the EA. This is a separate consenting process.</p> <p>An Environmental Permit application has not yet been duly made. Given that the permit has not been applied for during the NSIP process and is not running parallel to the DCO application, there are a number of matters which we have not been able to resolve or consider fully to date.</p>	<p>This is noted. As a specific gas turbine has not been selected, which is typical at this current stage of the DCO, we are unable to submit an Environmental Permit application under the Environmental Permitting (England & Wales) Regulations 2010, however our estimated timescale for submission is Q1 2019 as detailed in our response in 1.2 earlier in this table.</p>
2.0 Water Framework Directive (WFD)	<p>Based on the information submitted, the applicant has not fully demonstrated compliance with the requirements of the WFD.</p> <p>As part of the WFD assessment, the applicant will need to demonstrate:</p> <ul style="list-style-type: none"> • whether the proposed development will lead to a deterioration in status of any WFD waterbody; • whether the proposed development will compromise the achievement of Good Status in any WFD waterbody; • whether the proposed development will contribute towards a cumulative deterioration of WFD status or prevent cumulative enhancement of WFD • status in any waterbody; and • whether the proposed development will support the delivery of measures identified in the Northumbrian River Basin Management Plan. <p>The WFD waterbodies in question are:</p> <ul style="list-style-type: none"> • Tees estuary (S Bank) (GB103025072320) • TEES estuary (GB510302509900) <p>The WFD process involves the following stages:</p> <ul style="list-style-type: none"> • Stage 1: Pre-screening; • Stage 2: Screening; Look at each WFD quality element within each potentially impacted waterbody – potential impact on status – is further assessment required? • Stage 3: Further assessment; followed by, if required; • Stage 4: Identification and evaluation of measures; and • Stage 5: Article 4.7 considerations <p>The above should be considered for both potential WFD impacts during construction and post construction once the development proposal is operational.</p>	<p>An effect on a WFD water body would only be expected where a pollutant linkage exists (i.e. a defined source was connected via a defined pathway to a defined receptor). Potential effects during construction can be avoided and minimised through standard construction management practices preventing any such pollutant linkages occurring (see also the CEMP).</p> <p>The pollutant linkage from the activities of the Project during construction and operation to the Tees Estuary and Tees Estuary South WFD water bodies more than 3 km away are considered to be very low in terms of flows from the site to the waterbody either over land or via and connecting watercourse.</p> <p>The discharge of waste water from the Site will be via the Wilton International Site surface water drainage system, which collects surface water runoff and effluent from all businesses on the site and ultimately discharges to the River Tees estuary via the Dabholm Gut. This discharge is monitored on site and operated under an existing environmental permit (Reference: 254/1813, 2005).</p> <p>Since the Project will only discharge aqueous effluents to a WFD waterbody via an existing licensed discharge that is subject to effluent quality and monitoring conditions, it is reasonable to conclude that it will not lead to any deterioration in the status of the WFD waterbody or compromise the achievement of Good Status of that waterbody. Since the effluent from the Project will be combined with other effluents from the Wilton International Site and discharged in accordance with licence conditions it is also reasonable to conclude that it will not contribute to cumulative deterioration of WFD status. In this context there are no specific measures for the Project to adopt in regard to those identified in the Northumbrian River Basin Management Plan, specifically relating to the Tees Estuary Habitat Vision (to develop and implement a blueprint of improved estuary habitats that link to Teesside tributaries within a thriving industrial heartland).</p>
3.0 Habitat Improvement	<p>In accordance with the Government's 25 Year Environment Plan and WFD, we would encourage the applicant to consider biodiversity enhancement and net-gain opportunities as part of the proposed development.</p> <p>Please note that the EA reserves the right to make further comments on this application throughout the examination process and to modify its present advice or opinion in view of any additional information that may come to our attention.</p>	<p>The Project is more than 3 km away from the nearest WFD water body. All construction and operational aqueous discharges from the Project will pass to the Wilton International Site drainage and effluent control system. This system eventually discharges to the Tees Estuary via Dabholm Gut in accordance with an existing environmental permit. The applicant has not therefore considered biodiversity and net gain approaches in a WFD context. Rather the applicant has agreed to provide support to initiatives to develop and maintain local nature reserves currently managed by Tees Valley Wildlife Trust. It is also considered that the measures proposed would enhance the existing biodiversity resource and increase its value; i.e. they are not measures aimed at mitigating effects on ecology but are considered as 'net gain'.</p>