Intended for
InterGen

Document Type
Report

Date
12 August 2014

GATEWAY ENERGY CENTRE

NON-TECHNICAL SUMMARY OF THE UPDATED ENVIRONMENTAL STATEMENT FURTHER INFORMATION DOCUMENT

Revision History

Revision	*Date*	*Purpose / Status*	*Document Ref.*	*Comments*
0A	11/08/2014	Draft for Client Comment	371453-1	
1	12/08/2014	FINAL	371453-1	

Prepared By	Reviewed By	Approved By
		
Emily Agus	**Stephen Loyd**	**Stephen Loyd**
Senior Development and Environmental Engineer	Chief Thermal Engineer	Chief Thermal Engineer

Ramboll Energy
Rotterdam House
116 Quayside
Newcastle upon Tyne
NE1 3DY
United Kingdom

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LIST OF ABBREVIATIONS

CCGT	Combined Cycle Gas Turbine
CCR	Carbon Capture Ready
CCS	Carbon Capture and Storage
CO_2	carbon dioxide
DECC	Department of Energy and Climate Change
EIA	Environmental Impact Assessment
ES	Environmental Statement
ES FID	Environmental Statement Further Information Document
GE	General Electric
GEC	Gateway Energy Centre
GECL	Gateway Energy Centre Limited
ha	hectares
MHI	Mitsubishi Heavy Industry
MW	megawatts
OS	Ordnance Survey

1 INTRODUCTION

1.1 Overview

1.1.1 In February 2010, Gateway Energy Centre Limited (GECL) submitted an application for Consent under Section 36 of the Electricity Act 1989 (the Original Consent Application) to the Secretary of State for Energy and Climate Change (the Secretary of State) via the Department of Energy and Climate Change (DECC) to construct a 900 megawatt (MW) Combined Cycle Gas Turbine (CCGT) power plant to be known as Gateway Energy Centre or GEC. In addition, a direction that planning permission be deemed to be granted under Section 90 of the Town and Country Planning Act 1990 was also sought.

1.1.2 Amongst other documents / studies, the Original Consent Application was accompanied by an Environmental Statement (ES) (the February 2010 ES).

1.1.3 Following submission of the Original Consent Application, consultation responses were received and meetings were held with key consultees from which clarifications were sought and supplementary information requested. In December 2010, GECL submitted the clarifications and supplementary information to DECC.

1.1.4 Amongst other documents / studies, the supplementary information to support the Original Consent Application submitted in December 2010 included an Environmental Statement Further Information Document (ES FID) (the December 2010 ES FID).

1.1.5 On 4 August 2011, Consent under Section 36 of the Electricity Act 1989 and deemed planning permission under Section 90 of the Town and Country Planning Act 1990 was granted (the Original Consent).

1.2 Purpose of this Document

1.2.1 This document is a Non-Technical Summary of the Updated Environmental Statement Further Information Document (the August 2014 ES FID), which accompanies an application by GECL to the Secretary of State for the Original Consent to be varied so as to allow an increase in the permitted generation capacity of GEC from about 900 MW[1] to up to 1250 MW (the Variation Application). The increase in permitted generation capacity would enable the use of the latest turbine technologies, including the Alstom GT26 (Amended), General Electric (GE) Flex 50, Mitsubishi Heavy Industries (MHI) 701 F5, and the Siemens SGT5-8000H machines. InterGen has selected Siemens as its preferred supplier and is expected to install two SGT5-8000H machines on the GEC site.

1.2.2 The above mentioned latest turbine technologies have net efficiencies of around 60 per cent, and carbon dioxide (CO_2) emissions of approximately 350 gCO_2/kWh. In comparison, the earlier turbine technologies assumed in the February 2010 ES and the December 2010 ES FID had net efficiencies of around 55 per cent, and CO_2 emissions of approximately 390 gCO_2/kWh.

1.2.3 To accompany the Variation Application, GECL is providing the following information to DECC:

- The August 2014 ES FID, which includes (amongst other items):
  - A comparison between the turbine technologies considered, and thus the rationale for proposing that the Original Consent is varied;
  - An assessment of whether the likely significant effects on the environment of the Proposed Development differ from those described in the February 2010 ES and the December 2010 ES FID; and,
  - Where there is potential for the likely significant effects on the environment of the Proposed Development to differ from those described in the February 2010 ES and the December 2010 ES FID, an updated impact assessment has

[1] As per the Original Consent, a tolerance of up to 5% is permitted.

been undertaken. Where there is no potential for the likely significant effects to differ, an explanation and / or supporting information has been provided.

- An Updated Carbon Capture Readiness (CCR) Feasibility Study, and an accompanying report by Imperial College London.

1.2.4 The August 2014 ES FID (taken together with the February 2010 ES and December 2010 ES FID) assesses the likely significant effects, as described in Schedule 4 of the Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000 as amended by the Electricity Generating Stations (Variation of Consents) (England and Wales) Regulations 2013, of the Proposed Development (being the generating station which GECL would be authorised to construct under the Original Consent if this is varied as requested in the Variation Application).

2 THE PROPOSED DEVELOPMENT

2.1 Gateway Energy Centre

2.1.1 GEC will provide up to 1250 MW of power generation capacity. This will include the provision of up to 150 MW to the London Gateway® Logistics Park, which is expected to meet its long-term electricity requirements.

2.1.2 GEC will comprise up to two gas turbine units which will be fuelled by natural gas. Each unit will include a gas turbine and a Heat Recovery Steam Generator (HRSG) which will serve steam turbine equipment.

2.1.3 Initially, two typical layout options were considered in relation to GEC. These were the single-shaft and the multi-shaft unit layouts. The principal difference between these two layouts was that the multi-shaft unit layout utilised one large steam turbine, whereas the single-shaft unit option utilised two smaller steam turbines. Subsequently, InterGen has selected Siemens as its preferred supplier and is expected to install two SGT5-8000H machines on the GEC site based on the single-shaft unit layout.

2.1.4 GEC will be capable of operating continuously throughout the year for up to 35 years.

2.1.5 The overall application site boundary covers a total area of approximately 29.1 hectares (ha) (71.9 acres). This includes:

- The GEC site, which has a total area of approximately 11.3 ha (28.0 acres) and includes the land to be set aside for the purposes of CCR (the CCS space); and,
- Land to the north and west which is intended to be used for temporary laydown and storage of plant / equipment during construction.

2.1.6 The Proposed Development will be located within the GEC site (see FIGURE 63114-PBP-0025 associated with the Original Consent). The Proposed Development will be within the areas and heights described in the February 2010 ES and December 2010 ES FID.

2.1.7 The requirement for the Proposed Development to be located within the GEC site is provided by Condition 5(2) of the Original Consent.

2.2 The Gateway Energy Centre Site and its Surroundings

2.2.1 The GEC site is situated on the north bank of the Thames Estuary, approximately 6 km east of the A13. The A1014 dual carriageway (The Manorway) lies approximately 0.5 km to the north of the site and runs east to west to provide a link with the A13, which in turn connects with the M25 at Junction 30. The Ordnance Survey (OS) Grid Reference of the centre of the GEC site is approximately 573209, 182165.

2.2.2 The nearest residential settlements are at Corringham and Fobbing approximately 4 km to the west, Canvey Island approximately 5 km to the east and Basildon approximately 7 km to the north.

2.2.3 To the east of the GEC site lies the Shell Aviation Fuel Storage Farm (100 m), existing Coryton CCGT power plant (700 m east), and the existing Thames OilPort / former Petroplus Coryton Oil Refinery (950 m east).

2.2.4 GEC will be located on land within the London Gateway® Logistics Park.

3 RELATIONSHIP BETWEEN THE AUGUST 2014 ES FID AND THE FEBRUARY 2010 ES AND DECEMBER 2010 ES FID

3.1 Overview

3.1.1 Table 3.1 identifies the information provided in the August 2014 ES FID, and its relationship with the information provided in the February 2010 ES and December 2010 ES FID.

3.1.2 References to N / A (not applicable) signify that there are no changes to that Section.

TABLE 3.1: RELATIONSHIP BETWEEN THE AUGUST 2014 FID AND THE FEBRUARY 2010 ES AND DECEMBER 2010 ES FID

February 2010 ES	*December 2010 ES FID*	*This August 2014 FID*
Section 1 – Introduction	N / A	This Section provides a Consenting History of GEC, the underground gas pipeline and associated AGI, and the HV underground electrical connection and associated extension of the existing Coryton Substation. The relevant environmental information is also described. This Section also refers to the statutory provisions for a Variation Application under Section 36C of the Electricity Act 1989, including the requirements under the Electricity Generating Stations (Variation of Consents) (England and Wales) Regulations 2013.
Section 2 – Rationale for Development	N / A	The information in the February 2010 ES and December 2010 ES FID has been supplemented to reflect current national policy on the need for new energy infrastructure included in the National Policy Statements approved by Parliament in July 2011. This Section also provides the rationale for proposing that the Original Consent is varied
Section 3 – Planning Policy Context	This Section was updated to reflect the changes in energy and planning policy between February 2010 and December 2010.	This Section has been updated to reflect the changes in energy and planning policy between December 2010 and August 2014. This includes discussion on the National Policy Statements, the National Planning Policy Framework (March 2012) and the approved Local Development Plan policies (December 2011).
Section 4 – Description of GEC	This Section was updated to note that the Construction Environmental Management Plan (CEMP) will be submitted for approval to Thurrock Borough Council prior to commencement of construction works.	This Section has been updated to provide a description of GEC (i.e. the Proposed Development) which GECL would be authorised to construct under the Original Consent if this is varied as per the Variation Application.

February 2010 ES	***December 2010 ES FID***	***This August 2014 FID***
Section 5 – Description of the GEC Site and its Surroundings	This Section was updated to provide information on the proposed Tilbury C CCGT power plant. However, this Section noted that the "*localised effect from GEC and the separation distance (10 km) is considered to be too great to have any cumulative impacts, and therefore the development of Tilbury C* [CCGT power plant] *is not considered further*".	This Section has been updated to provide information on the clearance, remediation and levelling works at the DP World® London Gateway® Port and London Gateway® Logistics Park.
Section 6 – Alternatives	This Section was updated to provide information on the proposals for the underground gas pipeline and associated AGI / HV underground electrical connection based on the information available at the time.	This Section has been updated to provide information on the applications and planning permissions for the underground gas pipeline and associated AGI / HV underground electrical connection and associated extension of the existing Coryton Substation.
Section 7 – Environmental Impact Assessment Methodology and Environmental Statement Content	N / A	This Section has been updated to provide details on the Environmental Impact Assessment (EIA) methodology and ES content for this August 2014 ES FID based on the requirements of the Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations 2000 updated by Regulation 7 of the Electricity Generating Stations (Variation of Consents) (England and Wales) Regulations 2013.
Section 8 – Stakeholder Consultations and Additional Studies	This Section provided a summary of the written responses to the Original Consent Application. The subsequent actions taken, and links to where the additional information or additional environmental assessment was presented was also provided.	This Section provides a summary of the pre-application consultation and responses in relation to the Variation Application. The subsequent actions taken, and links to where the additional information or additional environmental assessment is presented is also provided. This Section also provides summary information on the Updated CCR Feasibility Study.
Section 9 – Air Quality	This Section provided discussion on the impact of emissions of carbon dioxide (CO_2) from GEC on Thurrock's carbon footprint.	This Section has considered the potential effects of GEC on air quality, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID. In terms of air quality, an updated assessment has been provided.

February 2010 ES	*December 2010 ES FID*	*This August 2014 FID*
Section 10 – Noise and Vibration	N / A	This Section has considered the potential noise and vibration effects of GEC, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID. In terms of noise and vibration, an updated assessment has been provided.
Section 11 – Landscape and Visual	This Section provided an update of the LVIA presented in the February 2010 ES, including additional photomontages with the DP World® London Gateway® Port / London Gateway® Logistics Park, and also a supplementary LVIA to include additional receptors.	This Section has considered the potential landscape and visual effects of GEC, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 12 – Ecology	This Section provided clarification on the impact on Site of Special Scientific Importance (SSSIs) due to air quality.	This Section has considered the potential effects of GEC on ecology, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID. Updated supporting assessment is provided in Section 9 (Air Quality) and Section 10 (Noise and Vibration).
Section 13 – Water Quality	This Section provided an update of the mitigation and monitoring measures to take account of the flood risks associated with the site.	This Section has considered the potential effects of GEC on water quality, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 14 – Geology, Hydrology and Land Contamination	This Section provided an update of the progression of clearance, remediation and levelling works at the DP World® London Gateway® Port and London Gateway® Logistics Park, and also an update of the mitigation and monitoring measures to take account of the Site Waste Management Plan (SWMP).	This Section has considered the potential effects of GEC on geology, hydrology and land contamination, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.

February 2010 ES	*December 2010 ES FID*	*This August 2014 FID*
Section 15 – Traffic and Infrastructure	This Section provided a summary of the Transport Report provided assessment of the peak construction traffic impact (agreed with the Highways Agency and Thurrock Council (Highways) to present a worse case) upon a number of links and junctions within the traffic and infrastructure study area.	This Section has considered the potential effects of GEC on traffic and infrastructure, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 16 – Cultural Heritage	This Section provided a summary of additional information presented in reports produced by the Oxford Archaeology Unit (OAU) for the DP World® London Gateway® Port and London Gateway® Logistics Park. This additional information did not change the assessment reported in the February 2010 ES.	This Section has considered the potential effects of GEC on cultural heritage, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 17 – Socio-Economics	This Section presented a summary of the support planned by GECL for the local communities surrounding the GEC site.	This Section has considered the potential socio-economic effects of GEC, identifying whether the likely significant impacts on the environment from the Proposed Development would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 18 – Summary of Mitigation and Monitoring	N / A	This Section has provided a Consolidated Summary of Mitigation and Monitoring, including reference (wherever relevant) to the Conditions associated within the Original Consent.
Not Included	Section 19 – Cumulative Impacts.	This Section has been updated to provide information on the applications and planning permissions for the underground gas pipeline and associated AGI / HV underground electrical connection and associated extension of the existing Coryton Substation.

4 SUMMARY OF THE FINDINGS OF THE IMPACT SECTIONS OF THE AUGUST 2014 ENVIRONMENTAL STATEMENT FURTHER INFORMATION DOCUMENT

4.1 Introduction

4.1.1 This Section summarises the findings of the August 2014 ES FID, providing a summary description of the assessment of whether the likely significant effects on the environment of the Proposed Development differ from those described in the February 2010 ES and the December 2010 ES FID.

4.1.2 Where there was a potential for the likely significant effects on the environment of the Proposed Development to differ from those described in the February 2010 ES and December 2010 ES FID, a summary of the updated impact assessment is provided. Where there was no potential for the likely significant effects to differ, a summary of the explanation / supporting information has been provided.

4.2 Summary of the Findings of the August 2014 ES FID

4.2.1 The summary of the findings of the Impact Sections of the August 2014 ES FID are provided in Table 4.1.

TABLE 4.1: SUMMARY OF THE FINDINGS OF THE AUGUST 2014 FID

Impact Section	*Construction / Decommissioning*	*Operation*
Section 9 – Air Quality	During construction, an increase in permitted generation capacity of GEC would not alter the release of pollutants to air to those reported in the February 2010 ES and the December 2010 ES FID. Therefore, during construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID	During operation, an increase in permitted generation capacity of GEC would alter the release of pollutants to air to those reported in the February 2010 ES and the December 2010 ES FID. Accordingly, an updated air quality impact assessment (during operation) was undertaken. Based on the updated air quality impact assessment, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 10 – Noise and Vibration	During construction, an increase in permitted generation capacity of GEC would not alter the emission of noise and vibration to those reported in the February 2010 ES and the December 2010 ES FID. Therefore, during construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID	During operation, an increase in permitted generation capacity of GEC may alter the emission of noise and vibration to those reported in the February 2010 ES and the December 2010 ES FID. Accordingly an updated noise and vibration impact assessment (during operation) was undertaken. Based on the updated noise and vibration impact assessment, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 11 – Landscape and Visual	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.

Impact Section	*Construction / Decommissioning*	*Operation*
Section 12 – Ecology	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, an increase in permitted generation capacity of GEC would alter the release of pollutants to air / may alter the emission of noise and vibration to those reported in the February 2010 ES and the December 2010 ES FID. Accordingly, an updated air quality impact assessment (during operation) and an updated noise and vibration assessment (during operation) were undertaken. Based on the updated air quality assessment / updated noise and vibration impact assessment, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 13 – Water Quality	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 14 – Geology, Hydrology and Land Contamination	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 15 – Traffic and Infrastructure	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 16 – Cultural Heritage	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.

Impact Section	*Construction / Decommissioning*	*Operation*
Section 17 – Socio-Economics	During construction / decommissioning, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.	During operation, it is not considered that the likely effects on the environment would differ from those described in the February 2010 ES and the December 2010 ES FID.
Section 18 – Consolidated Summary of Mitigation and Monitoring	N / A	N / A
Section 19 – Cumulative Impacts	No additional environmental assessment was undertaken. However, a consolidated cumulative impact assessment is presented.	No additional environmental assessment was undertaken. However, a consolidated cumulative impact assessment is presented.