Triton Knoll Offshore Wind Farm Limited
Triton Knoll Electrical System

Appendix 39: Mitigation Strategy Document (Revision C)

Date: 24 February 2016

Appendix 39 of the Applicant's Response to Deadline 7

RWE The energy to lead

Statkraft

TRITON KNOLL

Triton Knoll Offshore Wind Farm Limited

Triton Knoll Electrical System

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Appendix 39 of the Applicant's Response to Deadline 7

Date: 24 February 2016

Drafted By:	TKOWFL
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Revision:	C

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1. INTRODUCTION AND SUMMARY

Overview

1.1 Triton Knoll Offshore Wind Farm Limited (TKOWFL) has submitted an application to the Planning Inspectorate (PINS), on behalf of the Secretary of State for Energy and Climate Change, for a Development Consent Order (DCO) for the Triton Knoll Electrical System (the proposed development) under the Planning Act 2008. The Triton Knoll Electrical System (TKES) would connect the consented Triton Knoll Offshore Wind Farm (TKOWF) to the National Grid substation at Bicker Fen, Boston, and would comprise offshore and onshore export cable circuits, landfall infrastructure, an onshore electrical compound, an onshore substation and works at the Bicker Fen substation.

1.2 The TKOWF is located approximately 33km (20.5 miles) east of the Lincolnshire coast. The Secretary of State granted a DCO for the TKOWF on 12th July 2013.

1.3 All terms, acronyms and abbreviations used within this Strategy are explained on first use, and / or set out in full within the Glossary appearing in the Environmental Statement – Application Document 6.2.

The Applicant

1.4 TKOWFL is a joint venture between two leading international energy companies; RWE Innogy UK Limited and Statkraft UK Limited. RWE Innogy UK is the UK subsidiary of the German renewable energy company RWE Innogy (part of RWE AG), a company with a strong and diversified position in renewable energy development. Statkraft UK Limited is the UK subsidiary of Statkraft Group, Europe's largest generator of renewable energy and the leading power company in Norway.

Project Overview

1.5 The components of the TKES, which are needed to connect TKOWF to the National Grid, comprise:

- Up to six offshore export cable circuits – to transmit the high voltage alternating current (HVAC) electricity from the offshore substations to the transition joint bays at the landfall;

- Landfall infrastructure just north of Anderby Creek, Lincolnshire – including transition joint bays which house the connection between the offshore cables and the onshore cables;
- Up to six onshore export cable circuits (up to 220 kV) – to transmit the HVAC electricity from the transition joint bays at the landfall to the proposed Triton Knoll Substation via the Intermediate Electrical Compound;
- An Intermediate Electrical Compound near to Orby Marsh – to provide compensation for reactive power to allow more efficient transmission to minimise losses;
- A substation near the existing Bicker Fen National Grid Substation – to step-up the voltage to the voltage used by the National Grid and provide additional compensation for reactive power built up over the export transmission;
- Up to four onshore export cable circuits (400 kV) – to transmit the electricity from the proposed Triton Knoll Substation to the existing National Grid substation at Bicker Fen, Boston; and
- Unlicensed Works within the existing National Grid substation comprising up to two bays each accommodating electrical equipment.

1.6 The Order Limits for the Triton Knoll Electrical System are shown on the Order Limits Plans.

1.7 Any works at the National Grid substation near Bicker Fen required to connect the power produced by TKOWF will be consented, constructed and operated by National Grid (the 'Enabling Works'). National Grid has not yet completed the engineering studies necessary to define the Enabling Works required at their existing Bicker Fen substation.

Purpose of this comparison Strategy document

1.8 This comparison Strategy document forms part of the submission for Deadline 5. Its purpose is to clearly identify the changes made to the mitigation strategy documents.

1.9 This document has been updated with the mitigation measures agreed in the documents submitted up to and including Deadline 7, incorporating final amendments to Outline Management Plans.

Scope of this Strategy

1.10 This Strategy relates to both the offshore elements of the TKES for the proposed TKOWF, seaward of Mean Low Water (MLW), and the onshore elements of the TKES for the proposed TKOWF, landward of MLW.

Structure of this Strategy

1.11 Within the remainder of this document:

- Section 2 sets out those items of mitigation referred to within the offshore volume (Volume 2) of the Environmental Statement (Application Document 6.2) and Outline Management Plans, and identifies where within the draft DCO, Deemed Marine Licence, or other supporting documents those items of mitigation are secured;

- Section 3 sets out those items of mitigation referred to within the onshore volume (Volume 3) of the Environmental Statement (Application Document 6.2) and Outline Management Plans, and identifies where within the draft DCO and supporting documents those items of mitigation are secured;

- Section 4 identifies those items of mitigation referred to within the offshore volume (Volume 2) of the Environmental Statement (Application Document 6.2) and Outline Management Plans which relate expressly to the design of the scheme. Where the design of the proposed development offers embedded mitigation (for example through the avoidance of a designated asset) that is secured through the terms of the consent for development within the draft DCO which would be granted. No further reference is therefore made to where this design mitigation would be secured through the draft DCO or its supporting documents; and

- Section 5 identifies those items of mitigation referred to within the onshore volume (Volume 3) of the Environmental Statement (Application Document 6.2) and Outline Management Plans which relate expressly to the design of the scheme. Where the design of the proposed development offers embedded mitigation (for example through the avoidance of a designated asset) that is secured through the terms of the consent for development within the draft DCO which would be granted. No further reference is therefore made to where this design mitigation would be secured through the draft DCO or its supporting documents.

Monitoring

- Monitoring will form a central part of certain elements of mitigation which are proposed in respect of the TKES. All relevant monitoring will be conducted in accordance with the monitoring provisions of the various onshore and offshore construction and operational management plans to be approved by the relevant authorities pursuant to the Requirements of the draft DCO, or the Conditions of the Deemed Marine Licence which forms Schedule 9 to the draft DCO.

2. OFFSHORE MITIGATION MEASURES

3. ONSHORE MITIGTION MEASURES

4. OFFSHORE DESIGN MITIGATION MEASURES

5. ONSHORE DESIGN MITIGATION MEASURES