

Triton Knoll Offshore Wind Farm Limited Triton Knoll Electrical System

Outline Air Quality Management Plan

April 2015

Document Reference: 8.7.4

Appendix Four to the Outline Code of Construction
Practice

APFP Regulation 5(2)(q)

Triton Knoll Offshore Wind Farm
Limited

Triton Knoll Electrical System

Outline Air Quality Management Plan

Document Reference: 8.7.4

April 2015

Drafted By:	RSK
Approved By:	Kim Gauld-Clark and Paul Carter
Date of Approval	April 2015
Revision	A

Triton Knoll Offshore Wind Farm Ltd
Trigonos
Windmill Hill Business Park
Whitehill Way
Swindon
SN5 6PB

T 0845 026 0562

Email: tritonknoll@rwe.com

I www.rweinnogy.com

www.rweinnogy.com/tritonknoll

LIABILITY

In preparation of this document Triton Knoll Offshore Wind Farm Limited (TKOWFL) and their subconsultants have made reasonable efforts to ensure that the content is accurate, up to date and complete for the purpose for which it was prepared. Neither TKOWFL nor their subcontractors make any warranty as to the accuracy or completeness of material supplied. Other than any liability on TKOWFL or their subcontractors detailed in the contracts between the parties for this work neither TKOWFL or their subcontractors shall have any liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.

Copyright © 2015 Triton Knoll Offshore Wind Farm Limited

All pre-existing rights reserved.

1 TABLE OF CONTENTS

1	INTRODUCTION	3
	Overview	3
	The Applicant	3
	Project Overview	3
	Purpose of this Outline AQMP	4
	Scope of this Outline AQMP	5
2	Control Measures and mitigation	6
	Construction Phase Mitigation	6
	Communications	6
	Dust Management	6
	Specific to Earthworks	8
	Specific to Construction	8
	Specific to Trackout	9
	Decommissioning Phase Mitigation	9
	Specific to Demolition	9
3	Monitoring Residual Impacts	11
	PM ₁₀ monitoring	11
4	Implementation and Management	12

1 INTRODUCTION

Overview

- 1.1 Triton Knoll Offshore Wind Farm Limited (TKOWFL) is submitting 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) offshore array to the existing National Grid substation at Bicker Fen, Boston.
- 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 offshore array on 12th July 2013.
- 1.3 All terms, acronyms and abbreviations used within this Plan 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

- 1.4 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 compound comprising up to two bays each accommodating electrical equipment.

1.5 The Order Limits for the Triton Knoll Electrical System are shown on the Order Limits Plans (Application Document 2.1).

1.6 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. However, it is anticipated that these works will only involve modifications to the existing infrastructure within the existing site boundary.

Purpose of this Outline AQMP

1.7 This Outline Air Quality Management Plan (AQMP) forms part of the application for a DCO for the TKES. Its purpose is to summarise the construction and decommissioning air quality phase impacts, identify mitigation to reduce impacts, and recommend mitigation management methods. This Outline AQMP has been prepared in accordance with the guidance contained in Institute of Air Quality Management's (IAQM) '*Guidance on the assessment of dust from demolition and construction*'.¹

¹ Available at: <http://iaqm.co.uk/text/guidance/construction-dust-2014.pdf>

- 1.8 Requirement 14 of the draft DCO requires the CoCP and its supporting appendices to be submitted for each stage of the works permitted by the Order. This Outline AQMP will therefore be adapted and submitted separately for each stage of works as part of the CoCP for that stage. For certain stages of works it may be the case that a particular environmental plan is not required for that specific stage of works, and in those cases the undertaker will agree with the relevant planning authority which of the appendices to the CoCP are (not) required for such works. It may therefore be that this Outline AQMP is not provided for a particular stage of works.

Scope of this Outline AQMP

- 1.8 This Outline AQMP relates to the onshore elements of the TKES for the proposed TKOWF, landward of Mean Low Water (MLW). This document does not relate to offshore works seaward of MLW, or any works above MLW that are principally marine activities.
- 1.9 This Outline AQMP should be read in conjunction with Volume 3 Chapter 10 of the Environmental Statement (Application Document 6.2.3.10) and its supporting technical baseline reports (Application Document 6.2.5.10.1 and 6.2.5.10.2). Those documents address:
- Baseline air quality characterisation - the current air quality conditions surrounding the proposed development;
 - Details of the sites and the proposed works taking place;
 - Identification of nearby receptors;
 - A summary of the construction dust assessment; and
 - Identification of the potential air quality impacts.
- 1.10 This Outline AQMP includes sections addressing:
- Identification of control measures and mitigation;
 - Recommendations on monitoring potential impacts; and
 - Recommendations for implementation and management.

2 CONTROL MEASURES AND MITIGATION

Construction Phase Mitigation

- 2.1 Site-specific mitigation measures are divided into general measures applicable to all sites, and measures specific to demolition, earthworks, construction and trackout. Depending on the level of risk assigned to each site, different mitigation is assigned. The method of assigning mitigation measures as detailed in the IAQM guidance has been used.
- 2.2 For those mitigation measures that are general, the highest risk has been applied. In this case, the 'medium risk' site mitigation measures have been applied. There are two categories of mitigation measure – 'highly recommended' and 'desirable', which are indicated according to the dust risk level.
- 2.3 Desirable measures are presented in italics and will be implemented where it is practicable to do so. Highly recommended measures will be implemented during the construction of the TKES works.

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of people accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.

Dust Management

- 2.4 Site Management
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
 - Make the complaints log available to the local authority when asked.
 - Record any exceptional incidents that cause dust and/or air emissions, either on-site or off-site and the action taken to resolve the situation in the log book.

2.5 Monitoring

- Carry out regular site inspections by the contractor to monitor compliance with the dust management plan, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with the local authority, where appropriate. Where possible commence baseline monitoring before work commences on site or, before work on a phase commences.

2.6 Preparing and maintaining the site

- Plan site layout (layout of the works taking place on site) so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site (where practical and appropriate).
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period, where appropriate.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

2.7 Operating Vehicles/Machinery and Sustainable Travel

- Ensure the vehicle fleet for construction and decommissioning activities are of low emission category where possible.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators where possible and use mains electricity or battery powered equipment where practicable.

- *Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas.*

2.8 Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

2.9 Waste Management

- No bonfires or burning of waste material.

Specific to Earthworks

- *Re-vegetate earthworks and stored soil to stabilise surfaces as soon as practicable.*
- *Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover stored soil with topsoil, as soon as practicable.*
- *Only remove the cover in small areas during work and not all at once.*

Specific to Construction

- *Avoid scabbling (roughening of concrete surfaces) if possible.*
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- *Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.*

- *For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.*

Specific to Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid any dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Install hard surfaced haul route, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10m from receptors where possible.

Decommissioning Phase Mitigation

- 2.10 Site-specific mitigation measures for the decommissioning phase are considered to the same as identified in the previous section for the construction phase.
- 2.11 In addition to the construction phase mitigation measures outlined, the following are also recommended for decommissioning.

Specific to Demolition

- *Soft strip inside of buildings before demolition.*
- Ensure effective water suppression is used during demolition operation.

- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

3 MONITORING RESIDUAL IMPACTS

3.1 Monitoring ambient pollutant levels during site activities can be used to:

- Demonstrate the efficacy of mitigation measures;
- Reduce costs by effective targeting of mitigation measures;
- Demonstrate compliance with regulatory or other standards;
- Demonstrate a commitment to reduce environmental impacts;
- Reduce complaints from site staff and the public;
- Reduce potential for conflict with regulators; and,
- Speed up dispute resolution.

3.2 Monitoring regimes can range from real-time, continuous monitoring to the visual assessment of dust generation. Simple and inexpensive monitoring of construction impacts may be conducted by means of a number of techniques, including the diffusion tubes for gaseous pollutants (NO₂, SO₂ etc), dust deposition monitoring (e.g. by 'Frisbee' dust deposit gauge), and optical real-time continuous particle monitors (e.g. Nephelometers).

PM₁₀ monitoring

3.3 As per the IAQM guidance, it is recommended that dust deposition, dust flux, or real-time PM₁₀ continuous monitoring is undertaken, in agreement with the relevant local authority for any medium risk sites.

4 IMPLEMENTATION AND MANAGEMENT

- 4.1 A specified person shall be responsible for the control of environmental impacts of construction activities. It is anticipated that the nominated person will be the Site Manager or similar. The responsible person shall be briefed and trained appropriately.
- 4.2 As part of the air quality management regime, the responsible person will keep a site logbook documenting the maintenance of effective emissions control methods and details of any complaints or incidents, and actions taken.
- 4.3 The responsible person shall liaise regularly with the local authorities.
- 4.4 Emissions control procedures and equipment will only work satisfactorily if carried out or used appropriately. The responsible person shall maintain good housekeeping and ensure that all equipment is well maintained and used appropriately.
- 4.5 It is important that all site personnel are aware of the requirement for the control of environmental impacts, and appropriate training shall be given to all site personnel, covering:
- Health and environmental impacts of emissions to air;
 - The benefits of controlling emissions to air;
 - Emission control measures;
 - Method statements; and,
 - Importance of good communication.
- 4.6 It is anticipated that the proposed development will be part of the Considerate Constructors Scheme, which will include a posters to be displayed on the relevant site boundaries, which will have the contact details for the site manager, or other relevant staff.