



DOGGER BANK
WIND FARM



**Dogger Bank C and Sofia
Offshore Wind Farms Onshore Works**

CoCP Appendix 4.2

Dust and Air Quality Management Plan

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1 Introduction

1 This Dust and Air Quality Management Plan (DAQMP) has been produced to support the Code of Construction Practice (CoCP) and to fulfil Condition 9 of the Town and Country Planning Application #1 (TCPA #1, as defined further in the CoCP Glossary) and Requirement 27 of the Dogger Bank Teesside A & B Offshore Wind Farm Order 2015 (as amended) (the Development Consent Order, herein 'the DCO'). The measures set out within this DAQMP will be implemented by the Principal Contractor appointed for the Onshore Works associated with the DCO, as defined within the CoCP.

2 The DAQMP is required to satisfy Condition 9 and Requirement 27, Part 2(b) which states:

"Each CoCP must reflect and ensure delivery of the construction phase mitigation measures included in the environmental statement and must include consideration of the following matters, amongst others, during construction of the onshore works - (b) air quality including dust management".

2 Dust and Emissions Sources

3 The Onshore Work activities during the construction phase have the potential to generate dust. Dust has the potential to create nuisance for the surrounding community.

4 Although there is no universally recognised definition of dust, it is usually considered to comprise particles with diameters ranging from 1 to 77 μm (millionths of a metre or thousandths of a millimetre) and is both suspended in air and deposited from air. Particles less than 1 μm behave more like gases than solids and are generally termed 'fume'. The bulk of particulate matter generated by construction activity has a diameter greater than 30 μm , and therefore their mass dictates that the majority of these particles generally return to ground within 200 metres (m) of their source.

5 Construction dust is not typically associated with human health effects as most dust particles are too big to be inhaled, but can cause eye, nose and throat irritations and lead to annoyance if deposited on cars, windows and other property. There is no statutory standard for dust deposition which can be used to assess whether a nuisance has occurred, principally due to the normal variability of atmospheric dust, and the wide range of monitoring methods that seek to characterise the dust. Standards are therefore commonly adopted on a "custom and practice" basis (i.e. relevant to specific monitoring methods).

6 In theory, receptors can potentially be affected by dust up to 1 kilometre (km) from the source, although any dust emissions are more likely to be deposited much closer to the dust sources, generally within 100 m, depending on size characteristics and in the absence of appropriate mitigation. The precise distance will depend on the nature of the activity on-site, wind direction, wind speed, particle size distribution and moisture content, which all influence whether the potential for dust annoyance exists. The degree of annoyance depends on the rate of deposition, and is discernible at two levels:

- Annoyance experienced when the dust cover is sufficient to be visible when contrasted to an adjacent clean surface, such as when a finger is wiped across the surface. This is particularly annoying when it occurs regularly over long periods; and
- Severe annoyance experienced when the dust cover is perceptible without a clean reference surface for comparison.

7 Annoyance complaints are usually associated with periods of peak deposition, occurring during particular weather conditions. There is a 'normal' level of dust deposition in every community (i.e. the existing baseline) and it is only when the rate of deposition is considered high relative to the existing baseline, that complaints tend to occur. The effect of dust on a community is therefore determined by three main factors:

- Short term dust events/emissions during periods of dry weather;
- The frequency or regularity with which these occur; and
- The duration of activities which contribute to dust emissions.

8 The smallest particles of dust (in the size range of 10 – 30 µm) have the potential to travel furthest from where they are generated, but these normally make up only a small proportion of the dust that originates from construction sites. These particles tend to fall out of the atmosphere within 100 – 250 m of the point of release, although the smallest particles can travel in excess of 1 km. However, particles in this size range are not usually released in significant quantities from construction activity.

3 Environmental Statement Conclusions

9 Due to the relatively low potential for air quality (including dust) effects during the works to be undertaken at the Onshore Works Site, the 2014 Environmental Statement (ES) for Dogger Bank Teesside A & B Offshore Wind Farm included a brief, qualitative assessment of potential air quality effects.

10 In accordance with guidance in place at the time of the 2014 ES, all nearby receptors were identified as being of 'medium' sensitivity to construction dust. The risk of construction giving rise to dust effects was then calculated using an assessment matrix and considered before and after mitigation. The significance of the risk of giving rise to dust effects was negligible for all source activities after appropriate mitigation, and was described overall as negligible. The effect of construction vehicles on local air quality at all identified receptors was also identified as negligible.

11 It was concluded that good practice measures in construction methodology would prevent potential effects at areas in close proximity to construction activity.

4 Air Quality Control Measures

4.1 Overview

12 The control of emission to air (including that of dust) associated with construction activities will be undertaken through the implementation of appropriate mitigation measures as defined in best practice guidance documents. All measures will be implemented by the Principal Contractor so as to minimise the emissions generated from site activities in accordance with Section 8 of the 2014 Institute of Air Quality Management (IAQM) Guidance¹.

¹ IAQM (2014) Construction Dust [Online] Available at: <https://iaqm.co.uk/text/guidance/construction-dust-2014.pdf> (Accessed 09/10/20)

13 As per the IAQM Guidance, as the risk is assigned as 'negligible', no mitigation measures beyond those required by legislation are required. However, additional mitigation measures as defined in Section 8.2 of the IAQM Guidance may be applied as part of good practice. Professional judgement has been used to determine the site-specific mitigation measures to be applied.

14 The purpose of the DAQMP is to describe how emissions to air will be controlled throughout all stages of the Onshore Works.

4.2 Mitigation Measures

15 In line with the best practice measures outlined in the IAQM Guidance published in 2014 for a Low Risk site, the following control measures will be implemented throughout the full duration of construction.

4.2.1 Earthworks

- 16 When undertaking earthworks and other works potentially creating dust the following will be implemented:
- Damping down all dusty activities and surfaces, especially during dry, windy weather;
 - Temporary covering of earthworks, or if possible secure covering during dry, windy weather;
 - During stockpiling of loose materials, stockpiles shall exist for the shortest possible time;
 - Material stockpiles will be low mounds without steep sides or sharp changes in shape;
 - Where necessary, stockpiles will be kept securely sheeted;
 - Daily visual inspections will be undertaken to assess need for use of water bowsers;
 - Sealing and re-vegetation of earthworks and other exposed areas to stabilise surfaces;
 - Where works are being conducted, removal of secure covers in will be undertaken in small areas during work;
 - Implementation of hessian or mulches where it is not possible to re-vegetate or cover with topsoil;
 - Excavation and earthworks areas will be stripped as required in order to minimise exposed areas;
 - During excavation works, drop heights from buckets will be minimised to control the fall of materials reducing dust escape;
 - Speed limits on internal access roads will be enforced;
 - Local roads will be kept clean by regular use of road sweepers and a dry wheel wash located close to the construction exit;
 - All cutting/ grinding equipment will be fitted with dust extraction systems; and
 - Debris netting around dust sources will also be implemented as appropriate.
- 17 Water needed for dust suppression on internal roads during periods of dry weather and the compound vehicle wash will be clean water. Clean water may be obtained from re-circulated clean or treated drainage waters.

4.2.2 Trackout

18 To prevent the transportation of dust and dirt from the construction site onto the public road network, the following will be implemented:

- Use of a wheel wash, limiting of vehicle speeds onsite, avoidance of unnecessary idling of engines and routing of site traffic as far from residential and commercial properties as possible;
- Avoid dry sweeping of large areas;
- Ensure vehicles transporting material entering and leaving sites are covered to prevent escape of materials during transport;
- Use of a road sweeper to clean mud and other deposited particulates from hard-standing roads and footpaths; and
- Use of hard surface haul routes where possible.

4.2.3 Non-Road Mobile Machinery (NRMM)

- All NRMM will use fuel equivalent to ultra-low sulphur diesel (fuel meeting the specification within EN590:2004);
- All NRMM will comply with either the current or previous EU Directive Staged Emission Standards (97/68/EC, 2002/88/EC, and 2004/26/EC). As new emission standards are introduced the acceptable standards will be updated to the previous and most current standard;
- All NRMM will be fitted with Diesel Particulate Filters conforming to defined and demonstrated filtration efficiency (load / duty cycle permitting);
- The ongoing conformity of plant retrofitted with Diesel Particulate Filters, to a defined performance standard, will be ensured through a programme of onsite checks; and
- Implementation of energy conservation measures including instructions to: throttle down or switch off idle construction equipment; switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded; ensure equipment is properly maintained to ensure efficient energy consumption.

5 Auditing and Updating the DAQMP

5.1 Responsibility

19 As per the IAQM, the responsibility for dust management will be assigned to an individual member of staff of the Principal Contractor. All other staff will be trained to understand the importance of the issue, and communicate with the local community. Public consultation and complaints procedures are detailed within the CoCP.

5.2 Reviewing and Updating the DAQMP

20 The DAQMP will be reviewed periodically and also following any incidents, changes in site operations or if the elevated dust levels occur over a prolonged period, which require a change in any part of the DAQMP. All updates will be agreed with the Principal Contractor and Redcar and Cleveland Borough Council.