7 Air Quality and Health

Introduction

7.1 This chapter appraises the likelihood of air quality impacts from the proposed FAB Link HVDC converter station development near Exeter Airport. This chapter draws on relevant guidance and consultation to inform the appraisal and sets out the proposed measures to mitigate any potential adverse impacts.

7.2 On the basis of the guidance for Electric and Magnetic Fields (EMFs) from electricity infrastructure adopted in the UK and the published evidence to support that, it is considered that the levels of EMFs from the proposed converter station development would be well below the guideline public exposure reference levels set to protect health and have therefore not required addressing in this chapter.

7.3 During the construction phase of the proposed converter station, dusts and particulates, and vehicle emissions could potentially impact local air quality. The potential impact to air quality from dusts and particulates has been assessed qualitatively, using the Institute of Air Quality Management (IAQM) method 'Guidance on the assessment of dust from demolition and construction' (2014). This assessment method takes into consideration current air quality conditions informed by the results of available local monitoring and data available in Defra (Department for Environmental, Food and Rural Affairs) maps. An assessment of potential impacts to local air quality from construction traffic emissions has been scoped out on the basis that the number of trips generated falls below the indicative threshold for assessment in Environmental Protection UK/IAQM guidance document 'Land-Use Planning & Development Control: Planning for Air Quality' (2015).

7.4 During the operational phase, activities are not expected to generate dusts and particulates, although vehicle trips (e.g. for routine maintenance) could potentially impact local air quality. An assessment of potential impacts to local air quality from operational traffic emissions has been scoped out on the basis that the number of trips generated falls below the indicative threshold for assessment in Environmental Protection UK/IAQM guidance (EPUK/IAQM, 2015).

Assessment Methodology

Policy and Guidance

7.5 Relevant planning policy, legislation and guidance relating to air quality is contained within:

- National Planning Policy Framework (NPPF) (DCLG, 2012). The NPPF sets out 12 core land-use planning principles. The relevant core-principle in the context of air quality is that planning should *"contribute to conserving and enhancing the natural environment and reducing pollution."* (Paragraph 17).

- National Planning Practice Guidance (NPPG) (DCLG, 2014) advises that whether or not air quality is relevant to a planning decision will depend on the proposed development and its location. The NPPG states that when deciding whether air quality is relevant to a planning

application, considerations could include whether the development would:*"…..Give rise to potentially unacceptable impact (such as dust) during construction for nearby sensitive locations."*

- Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction' (IAQM, 2014) aims to estimate the impacts of both PM_{10} and dust through a risk-based assessment procedure, and define the appropriate site-specific mitigation measures. The guidance states that provided the mitigation measures are successfully implemented, the resultant effects of the dust exposure will normally be "not significant".

- Environmental Protection UK/IAQM guidance document 'Land-Use Planning & Development Control: Planning for Air Quality' (2015) provides indicative criteria for requiring an air quality assessment.

Consultation

7.6 A summary of consultation with the local planning authority, East Devon District Council (EDDC), is provided in the table below.

Table 7.1: Consultation Responses Relevant to this Chapter

Date	Consultee and Issues Raised	How/ Where Addressed
06 June 2016	John Smith - East Devon District Council. Consulted with the council to agree the scope of works for assessment. The council was in agreement with the following scope of proposed work: ▪ The focus of the Air Quality Assessment Chapter is the potential impacts to air quality from dust and particulates generated during the construction phase of the proposed converter substation. ▪ The potential impact to air quality from dusts and particulates generated during the construction phase for the proposed converter substation will be assessed qualitatively, using the Institute of Air Quality Management (IAQM) method 'Guidance on the assessment of dust from demolition and construction' (2014). ▪ Sufficient information is expected to be available to allow a desk-top assessment of the impacts; no site survey work is considered	The assessment has been undertaken in accordance with the agreed scope of works.

Date	Consultee and Issues Raised	How/ Where Addressed
	necessary or is proposed. ▪ It is proposed to scope out an assessment of emissions from traffic on the basis that the number of trips to be generated is below the relevant indicative threshold for assessment in the following guidance: Environmental Protection UK/Institute of Air Quality Management (EPUK/IAQM) (2015) Land-Use Planning & Development Control: Planning for Air Quality.	

Methodology

Overview

7.7 The focus of this chapter is the potential impacts on air quality from dust and particulates generated during the construction phase of the proposed converter station as part of the FAB Link Interconnector project. The potential impact to air quality from dusts and particulates generated during the construction phase of the proposed converter station has been assessed qualitatively, using the Institute of Air Quality Management (IAQM) method 'Guidance on the assessment of dust from demolition and construction' (IAQM, 2014). This assessment method takes into consideration current air quality conditions informed by the results of available local monitoring and data available in Defra maps (Defra, 2016).

7.8 During the construction and operational phases, vehicle trips could potentially impact local air quality. However, an assessment of potential impacts to local air quality from traffic emissions has been scoped out on the basis that the number of trips generated falls below the indicative threshold for assessment in Environmental Protection UK/IAQM guidance document '*Land-Use Planning & Development Control: Planning for Air Quality*' (*2015)* (summarised below).

"Indicative criteria for requiring an air quality assessment

…

1. Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight)

A change of LDV flows of:

-- more than 100 AADT[1] within or adjacent to an AQMA

-- more than 500 AADT elsewhere

[1] Annual average daily traffic.

2. Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight)

A change of HDV flows of

-- more than 25 AADT within or adjacent to an AQMA

-- more than 100 AADT elsewhere".

Method - Construction Dust Assessment

7.9 The effects of dust are linked to particle size and two main categories are usually considered:

- Particulate matter, with a mean aerodynamic diameter up to 10 µm (PM_{10}), remain suspended in the air for long periods and are small enough to be breathed in and so can potentially impact on health; and
- Dust, generally considered to be particles larger than 10 µm which fall out of the air quite quickly and can soil surfaces (e.g. a car, window sill, laundry). Additionally, accumulation of dust can potentially have adverse effects on vegetation and fauna at sensitive habitat sites.

7.10 The IAQM Guidance on the assessment of dust from demolition and construction sets out 350 m as the distance from the site boundary and 50 m from the site traffic route(s) up to 500 m of the entrance, within which there could potentially be dust and PM_{10} effects on human receptors (IAQM, 2014). For sensitive ecological receptors, the corresponding distances are 50 m in both cases. (In this particular application, there are no ecological designations and therefore no sensitive ecological receptors within the distances and ecological effects have been scoped out). These distances are set to be deliberately conservative.

7.11 The IAQM dust guidance aims to estimate the impacts of both PM_{10} and dust through a risk-based assessment procedure, using the well-established source-pathway-receptor approach. The dust risk categories that have been determined for each of the four activities (demolition, earthworks, construction and trackout) have been used to define the appropriate site-specific mitigation measures based on those described in the IAQM dust guidance. The guidance states that provided the mitigation measures are successfully implemented, the resultant effects of the dust exposure will normally be "not significant".

7.12 This assessment does not consider the air quality impacts of dust from any contaminated land or buildings. The potential for contaminated land is assessed in Chapter 10.

Source

7.13 The IAQM dust guidance gives examples of the dust emission magnitudes for demolition, earthworks and construction activities and trackout. These example magnitudes have been combined with details of the period of construction activities to provide the ranking for the source magnitude that is set out in Table 7.2.

Table 7.2: Risk Allocation – Source (Dust Emission Magnitude)

Features of the Source of Dust Emissions	Dust Emission Magnitude
Demolition - building over 50,000 m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities > 20 m above ground level. **Earthworks** – total site area over 10,000 m^2, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds > 8 m in height, total material moved > 100,000 tonnes. **Construction** - total building volume over 100,000 m^3, activities include piling, on-site concrete batching, sand blasting. Period of activities more than two years. **Trackout** – 50 HDV outwards movements in any one day, potentially dusty surface material (e.g. High clay content), unpaved road length > 100 m.	Large
Demolition - building between 20,000 to 50,000 m^3, potentially dusty construction material and demolition activities 10 - 20 m above ground level. **Earthworks** – total site area between 2,500 to 10,000 m^2, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 4 - 8 m in height, total material moved 20,000 to 100,000 tonnes. **Construction** - total building volume between 25,000 and 100,000 m^3, use of construction materials with high potential for dust release (e.g. concrete), activities include piling, on-site concrete batching. Period of construction activities between one and two years. **Trackout** – 10 - 50 HDV outwards movements in any one day, moderately dusty surface material (e.g. High clay content), unpaved road length 50 – 100 m.	Medium
Demolition - building less than 20,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities < 10 m above ground, demolition during winter months. **Earthworks** – total site area less than 2,500 m^2. Soil type with large grain size (e.g. sand), < 5 heavy earth moving vehicles active at any one time, formation of bunds < 4 m in height, total material moved < 10,000 tonnes earthworks during winter months. **Construction** - total building volume below 25,000 m^3, use of construction materials with low potential for dust release (e.g. metal cladding or timber). Period of construction activities less than one year. **Trackout** – < 10 HDV outwards movements in any one day, surface material with low potential for dust release, unpaved road length < 50 m.	Small

Pathway and Receptor - Sensitivity of the Area

7.14 Table 7.3 and Table 7.4 sets out the IAQM basis for categorising the sensitivity of people and property to dust and PM_{10} respectively.

Table 7.3: Sensitivities of People and Property Receptors to Dust

Receptor	Sensitivity
Principles:- ▪ Users can reasonably expect enjoyment of a high level of amenity; or ▪ the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods as part of the normal pattern of use of the land. Indicative Examples:- ▪ Dwellings. ▪ Museums and other culturally important collections. ▪ Medium and long-term car parks and car showrooms.	High
Principles:- ▪ Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or ▪ the appearance, aesthetics or value of their property could be diminished by soiling; or ▪ the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Indicative Examples:- ▪ Parks. ▪ Places of work.	Medium
Principles:- ▪ the enjoyment of amenity would not reasonably be expected; or ▪ there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or ▪ there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Indicative Examples:- ▪ Playing fields, farmland (unless commercially-sensitive horticultural). ▪ Footpaths and roads. ▪ Short-term car parks.	Low

Table 7.4: Sensitivities of People and Property Receptors to PM_{10}

Receptor	Sensitivity
Principles:- ▪ Locations where members of the public are exposed over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM_{10}, a relevant location would be one where individuals may be exposed for eight hours or more in a day).	High

Receptor	Sensitivity
Indicative Examples:- ▪ Residential properties. ▪ Schools, hospitals and residential care homes.	
Principles:- ▪ Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM_{10}, a relevant location would be one where individuals may be exposed for eight hours or more in a day). Indicative Examples:- ▪ Office and shop workers (but generally excludes workers occupationally exposed to PM_{10} as protection is covered by Health and Safety at Work legislation).	Medium
Principles:- ▪ Locations where human exposure is transient exposure. Indicative Examples:- ▪ Public footpaths. ▪ Playing fields, parks. ▪ Shopping streets.	Low

7.15 The IAQM methodology combines consideration of the pathway and receptor to derive the 'sensitivity of the area'. Table 7.5 and Table 7.6 show how the sensitivity of the area has been derived for this assessment.

Table 7.5: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors a	Distance from the Source (m) b			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout.

a The total number of receptors within the stated distance has been estimated. Only the highest level of area sensitivity from the table has been recorded.

b For trackout, the distances have been measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site, and trackout impacts have only been considered up to 50 m from the edge of the road.

Table 7.6: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM10 Concentration b	Number of Receptors c	Distance from the Source (m) d				
			<20	<50	<100	<200	<350
High	> 32 µg.m^{-3}	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28 - 32 µg.m^{-3}	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24 - 28 µg.m^{-3}	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	< 24 µg.m^{-3}	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	> 32 µg.m^{-3}	>100	High	Medium	Low	Low	Low
		10-100	Medium	Low	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28 - 32 µg.m^{-3}	>100	Low	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24 - 28 µg.m^{-3}	>100	Low	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	< 24 µg.m^{-3}	>100	Low	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout.

a Estimate the total within the stated distance (e.g. the total within 350 m and not the number between 200 and 350 m) noting that only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors < 20 m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total number of receptors < 50 m is 102. If the annual mean PM_{10} concentration is 29 µg.m^{-3}, the sensitivity of the area would be high.

b Most straightforwardly taken from the national background maps, but should also take into account local sources. The values are based on 32 µg.m^{-3} being the annual mean concentration at which an exceedance of the 24-hour objective is likely in England, Wales and Northern Ireland. In Scotland there is an annual mean objective of 18 ug.m^{-3}.

c In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate number of people likely to be present. In the case of residential dwellings, just include the number of properties.

d For trackout, the distances should be measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites,

200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

7.16 The IAQM dust guidance lists the following additional factors that can potentially affect the sensitivity of the area and, where necessary, professional judgement has been used to adjust the sensitivity allocated to a particular area:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which the works will take place;
- any conclusions drawn from local topography;
- duration of the potential impact, as a receptor may become more sensitive over time; and
- any known specific receptor sensitivities which are considered go beyond the classifications given in the table above.

7.17 The matrices in Table 7.7, Table 7.8, Table 7.9 and Table 7.10 have been used to assign the risk for each activity to determine the level of mitigation that should be applied. For those cases where the risk category is 'negligible', no mitigation measures are required beyond those mandated by legislation.

Table 7.7: Risk of Dust Impacts – Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 7.8: Risk of Dust Impacts – Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk

Low	Low Risk	Low Risk	Negligible

Table 7.9: Risk of Dust Impacts – Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table 7.10: Risk of Dust Impacts – Trackout

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Limitations of the Assessment

7.18 Monitoring data were not available to inform existing (baseline) levels of PM_{10} in the vicinity of the proposed converter station, and Defra mapped background concentration estimates of the relevant 1 km^2 areas were used. This is considered a robust approach, as the proposed converter station is located in a rural area away from discrete localised sources of pollution.

7.19 The assessment has taken the conservative approach of assuming the site boundary is the extent of earthworks and construction activities and the converter station design parameters from the Project Description (Chapter 2) including the temporary compound area have been used to inform the potential building dimensions. This is considered a robust approach.

Assessment of Construction Impacts

Existing (Baseline) Air Quality

7.20 East Devon District Council has declared *"Exeter A30 Exeter Road, A375 Exeter Road, A375 High Street, A35 Monkton Road and A35 Kings Road at 0 to 6.6 m from the road centreline"* as an Air Quality Management Area (AQMA) due to high levels of nitrogen dioxide (NO_2) pollution from road traffic. This AQMA is 15 km away, and the site for the proposed converter station is not located within an AQMA. The closest AQMA to the proposed converter station is 6 km away in the neighbouring district of Exeter City Council and comprises *"a network of major roads in Exeter"*. This AQMA was also declared due to high levels of NO_2 pollution from road traffic.

7.21 Monitoring is undertaken at two locations within 15 km of the converter substation as part of the Automatic Urban and Rural Network (AURN) programme: Exeter Roadside and Honiton Urban Background. Both stations measure levels of the key traffic-related pollutant NO_2; however, an assessment of traffic emissions impacts has been scoped out (on the basis that the number of trips generated falls below the indicative threshold for assessment). So the local NO_2 monitoring is not relevant for this assessment.

7.22 In addition to local monitoring, Defra maps (Defra, 2016) are available to inform existing air quality conditions. Defra maps are concentration estimates for 1 km grid squares of the UK covering the years 2011 to 2030. The Defra mapped background concentration estimate for PM_{10} for 2011 has been provided here for the grid square of the proposed converter station (301500, 93500). To put this value into context, the minimum, maximum and average Defra mapped background concentration estimates for grid squares within the East Devon District have also been provided.

Table 7.11: 2011 Defra Mapped Background Concentration (µg.m^{-3}) Estimate for PM_{10}

Pollutant	Location	Estimated Defra Mapped (2011) (µg.m^{-3})
PM_{10}	Grid square of the proposed converter station (301500, 93500)	15
	East Devon District (min)	12
	East Devon District (max)	18
	East Devon District (average)	14

7.23 The Defra mapped background concentration estimate for the grid square of the proposed converter station (301500, 93500) is in the middle of the range of Defra estimates for grid squares within the East Devon District.

7.24 In the absence of local monitoring for PM_{10}, the Defra mapped background concentration estimate for PM_{10} for 2011 has been used to inform existing air quality for the assessment.

Risk of Dust Impacts

7.25 The level and distribution of construction dust emissions will vary according to factors such as the type of dust, duration and location of dust-generating activity, weather conditions and the effectiveness of suppression methods.

7.26 The main effect of any dust emissions, if not mitigated, could be annoyance due to soiling of surfaces, particularly windows, cars and laundry. However, it is normally possible, by implementation of proper control, to ensure that dust deposition does not give rise to significant adverse effects, although short-term events may occur (for example, due to technical failure or exceptional weather conditions). The following assessment, using the IAQM methodology, predicts the risk of dust impacts and the level of mitigation that is required to control the residual effects to a level that is “not significant”.

Source

7.27 The site is currently undeveloped and demolition of existing structures will not be required. Demolition has not been considered further in this assessment.

7.28 The combined area for the converter station and lay-down area is in excess of 10,000 m^2, and a maximum of 40,000 m^3 of soil will be moved during the cut and fill operation. The dust emission magnitude for the earthworks phase has been classified as large.

7.29 The total volume of the buildings to be constructed would be in excess of 100,000 m^3 and the dust emission magnitude for the construction phase is classified as large.

7.30 It is expected that site mobilisation, demobilisation, ground works and civil engineering works will generate an average of 40 two-way HDV movements per day, and a maximum of 85 two-way HDV movements per day. The maximum number of outward movements in any one day is more than 50 HDVs, the dust emission magnitude for trackout would be classified as large.

Table 7.12: Dust Emission Magnitude for Earthworks, Construction and Trackout

Demolition	Earthworks	Construction	Trackout
-	Large	Large	Large

Pathway and Receptor - Sensitivity of the Area

7.31 All demolition, earthworks and construction activities are assumed to occur within the site boundary. As such, receptors at distances within 20 m, 50 m, 100 m, 200 m and 350 m of the study area have been identified and are illustrated in Figure 7.1. The sensitivity of the area has been classified as shown in Table 7.13 below.

Table 7.13: Sensitivity of the Surrounding Area for Earthworks and Construction

Potential Impact	Sensitivity of the Surrounding Area	Reason for Sensitivity Classification
Dust Soiling	Medium	Adjacent to the lay-off area is a small number (<10) of high sensitivity (residential) receptors; and medium sensitivity receptors (places of work) including: antiques outlet, airport parking, exhibition stand/graphic design company, printing business and Environment Agency Clyst Honiton Depot. <10 high sensitivity and >1 medium sensitivity receptors located within 20 m of the site boundary (Table 8.6).
Human Health (PM_{10})	Low	The Defra mapped concentration estimate for PM_{10} for the grid square of the proposed converter station (301500, 93500) = 15 µg.m^{-3}. <10 high sensitivity and between 1 and 10 medium sensitivity receptors located within 20 m of the site

Potential Impact	Sensitivity of the Surrounding Area	Reason for Sensitivity Classification
		boundary and PM_{10} concentrations below 24 µg.m^{-3} (Table 8.7).

7.32 The Dust Emission Magnitude for trackout is classified as large and trackout may occur on roads up to 500 m from the site. The major route within 500 m of the site is Long Lane. The sensitivity of the area has been classified as shown in Table 7.14 below.

Table 7.14: Sensitivity of the Surrounding Area for Trackout

Potential Impact	Sensitivity of the Surrounding Area	Reason for Sensitivity Classification
Dust Soiling	Medium	Off the Long Lane there is a small number (<10) of high sensitivity (residential) receptors; and a small industrial estate, which comprises medium sensitivity receptors (places of work) including: antiques outlet, airport parking, exhibition stand/graphic design company, printing business and Environment Agency Clyst Honiton Depot. <10 high sensitivity and >1 medium sensitivity aligning Long Lane (Table 7.6).
Human Health (PM_{10})	Low	The Defra mapped concentration estimate for PM_{10} for the grid square of the proposed converter station (301500, 93500) = 15 µg.m^{-3}. <10 high sensitivity and between 1 and 10 medium sensitivity receptors aligning Long Lane and PM_{10} concentrations below 24 µg.m^{-3} (Table 7.7).

Overall Dust Risk

7.33 The Dust Emission Magnitude has been considered in the context of the Sensitivity of the Area to give the Dust Impact Risk. Table 7.15 summarises the Dust Impact Risk for the four activities.

Table 7.15: Dust Impact Risk for Earthworks, Construction and Trackout

Source	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	Medium
Human Health (PM_{10})	Low	Low	Low
Risk	Medium	Medium	Medium

7.34 Taking the site as a whole, the overall risk is deemed to be medium which is derived from the medium risk of off-site dust soiling rather than a risk to Human Health (PM_{10}) which is assessed

as low risk. The mitigation measures appropriate to a level of risk for the site as a whole and for each of the phases are set out in the 'Proposed Mitigation Measures' section of this chapter.

7.35 Provided this package of mitigation measures is implemented, the residual construction dust effects will not be significant. The IAQM dust guidance states that "*For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'."* The IAQM dust guidance recommends that significance is only assigned to the effect after the activities are considered with mitigation in place.

Assessment of Operational Impacts

7.36 During the operational phase, vehicle trips (e.g. for routine maintenance) could potentially impact local air quality; however, an assessment of traffic emissions impacts has been scoped out on the basis that the number of trips generated falls below the indicative threshold for assessment in Environmental Protection UK/IAQM guidance document '*Land-Use Planning & Development Control: Planning for Air Quality*' (*2015),* as summarised in paragraph 7.8.

Proposed Mitigation Measures

7.37 IAQM dust guidance lists mitigation measures for low, medium and high dust risks.

7.38 As summarised in Table 7.15, the predicted Dust Impact Risk is classified as medium for Earthworks and Construction, and Trackout. Taking the site as a whole, the overall risk is deemed to be medium. The general site measures described as 'highly recommended' for medium risk sites by the IAQM are listed below in Table 7.16. The 'highly recommended' measures for medium risk construction sites and trackout are also listed. There are no 'highly recommended' measures for medium risk earthworks.

Table 7.16: Proposed Mitigation Measures

Communications
▪ Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
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- or off- site, and the action taken to resolve the situation in the log book.
Preparing and maintaining the site
▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Use screening intelligently where possible – e.g. locating site offices between potentially dusty activities and the receptors.

▪ Erect solid screens or barriers around the site boundary. ▪ Avoid site runoff of water or mud. ▪ Keep site fencing, barriers and scaffolding clean.
Operations
▪ Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible. ▪ Use enclosed chutes, conveyors and covered skips, where practicable. ▪ 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.
Waste management
▪ Avoid bonfires and burning of waste materials.
Medium risk measures specific to construction
▪ 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.
Medium risk measures specific to trackout
▪ Use water-assisted dust sweeper(s) on the access and local roads, to remove, as soon as practicable any material tracked out of the site. This may require the sweeper being continuously in use. ▪ 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 practicable; ▪ Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site).

Future Monitoring

7.39 Further IAQM guidance (IAQM, 2012) states that the following dust monitoring is required for medium-risk sites to show that the controls are working:

"Monitoring dustfall (as mass deposition rate and/or soiling rate) at nearby receptors is also required, together with monitoring of dust flux across the site boundary (if there is a need to distinguish the contributions of the site from other sites or the general background)."

Summary

7.40 This assessment has considered the potential impact on local air quality from dust and particulates generated during the construction phase

7.41 The results of the risk assessment of construction dust impacts undertaken using the IAQM dust guidance, indicates that before the implementation of mitigation and controls, the risk of dust impacts will be medium. The IAQM dust guidance lists mitigation measures for low, medium and high dust risks and it is proposed to implement the highly-recommended mitigation measures appropriate to the level of risk at the site. Implementation of the highly-recommended mitigation measures described in the IAQM construction dust guidance should reduce the residual dust effects to a level categorised as “not significant”.

References

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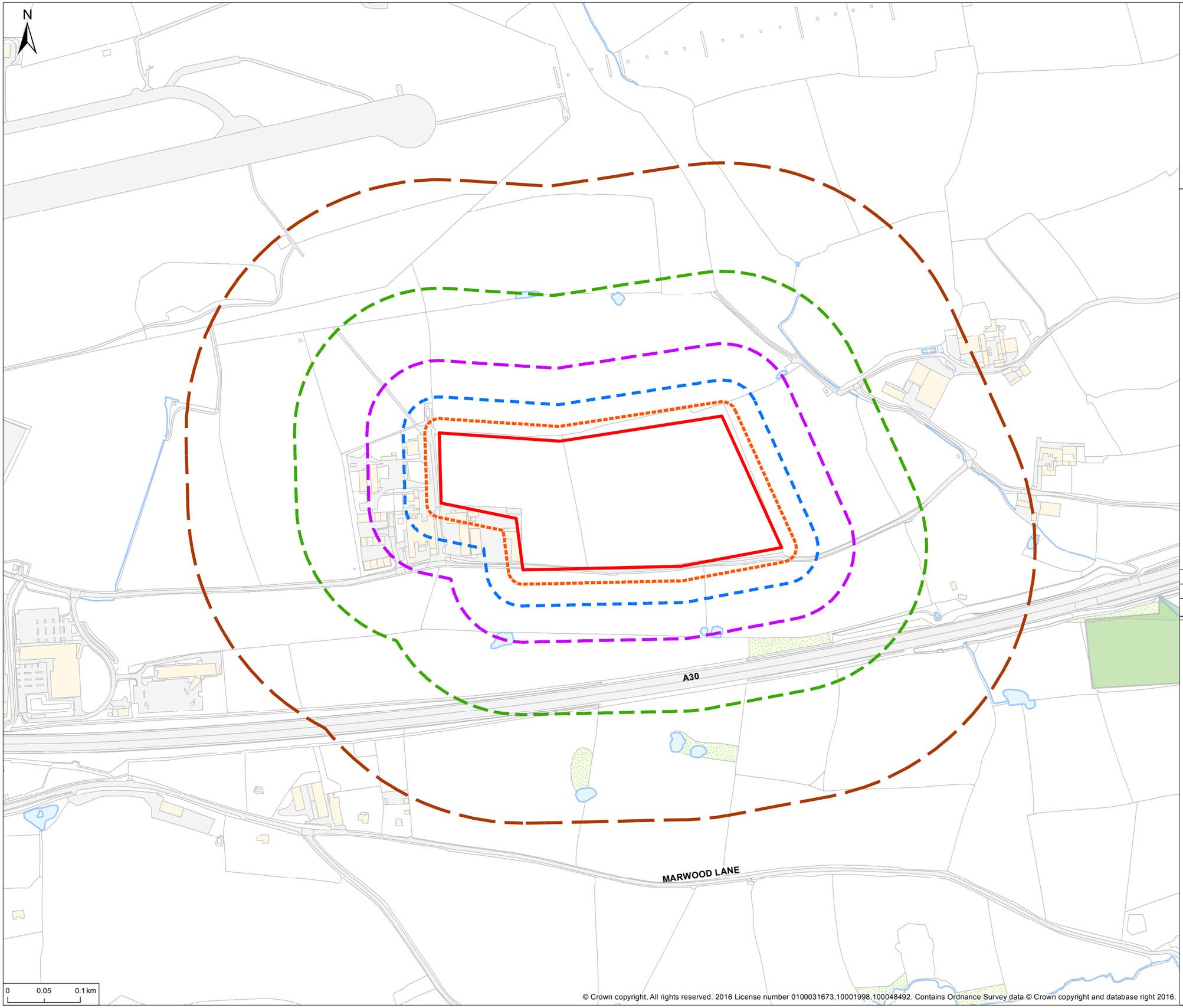

FAB France - Alderney - Britain INTERCONNECTOR

Rte Réseau de transport d'électricité

TRANSMISSION INVESTMENT

Co-financed by the European Union - Connecting Europe Facility

Legend

- FABLINK Working Area
- 20m buffer
- 50m buffer
- 100m buffer
- 200m buffer
- 350m buffer

Rev	Description	Date	Initial	Checked

RPS

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Client: FAB Link Ltd.

Project: UK Converter Station Environmental Report

Title: Buffer Zones for Construction Dust Assessment

Status	Drawn By	PM/Checked By
DRAFT	AVG	NF
Job Ref	**Scale @ A3**	**Date Created**
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Figure Number: **7.1**

Rev: **-**

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