One Earth Solar Farm

Preliminary Environmental Information Report [EN010159]

Chapter 14: Air Quality

May 2024

One Earth Solar Farm Ltd

Contents

14. Air Quality

Summary of Preliminary Likely Significant Effects

14.1 This Chapter sets out our preliminary assessment which shows there are unlikely to be any likely significant environmental effects on Air Quality as a result of our Project. As part of preparing our Environmental Statement (ES), additional modelling and ongoing design work will confirm whether any significant effects are likely to occur. The results of this will be reported in our ES submitted as part of the DCO application.

Introduction

14.2 This Chapter of the PEIR has been prepared by Logika and presents the preliminary likely significant environmental effects of our Project upon Air Quality. The experience of the consultants that have prepared this Chapter, who are competent experts for the purpose of the EIA Regulations, is set out in **Appendix 1-1** in **Chapters 1-6**. It is informed by the environmental information we have collected to date (which is detailed in this Chapter), as well as the current description of our Project, as set out in **Chapter 4: Our Project**.

14.3 This Chapter is supported by the following detailed information:

- Appendix 14-1: Air Quality Specific Legislation, Policy and Guidance
- Appendix 14-2: Construction Dust Assessment Methodology
- Appendix 14-3: EPUK & IAQM Planning for Air Quality Guidance

Current Air Quality Conditions

Air Pollutants of Concern

14.4 The UK Government has established a set of standards and objectives to protect human health and designated ecological sites[1]. These standards and objectives reference concentrations of pollutants, below which adverse effects are considered to be unlikely. Our Project will be required to evidence that it does not lead to exceedances of these standards and objectives.

14.5 **Table 14-1** presents the air pollutants considered within our preliminary assessment, due to their potential effects on human health and on ecological sites. It also provides an overview on the predominant source of these pollutants, the potential health effects and the air quality objectives to be achieved.

[1] Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Table 14-1: Air **Pollutants** of Concern, Source, Likely Effect and the Air Quality Objectives

Air Pollutant	Source of Pollutant	Likely Effect to Human Health	Objective[2]
Nitrogen dioxide (NO_2)	Emissions from road traffic, and construction and decommissioning vehicles	Respiratory diseases	40 µg/m^3 (annual mean) 200 µg/m^3 (1-hour mean) not to be exceeded >18 times per year
Particulate matter (PM_{10})	Emissions from road traffic, construction and decommissioning vehicles, and construction and decommissioning activities	Respiratory diseases	40 µg/m^3 (annual mean) 50 µg/m^3 24-hour mean) not to be exceeded >35 times per year
Particulate matter ($PM_{2.5}$)	Emissions from road traffic, and construction and decommissioning vehicles	Respiratory diseases	20 µg/m^3 (annual mean)
Dust (particulates that are visible to the human eye)	Construction and decommissioning activities	Nuisance	-
Air Pollutant	**Source of Pollutant**	**Likely Effect to Vegetation and Ecosystems**	**Critical Level**
Nitrogen Oxide (as NO_2)	Emissions from road traffic, and construction and decommissioning vehicles	Changes to soil chemistry and reducing plant growth	30 µg/m^3 (annual mean) 75 (200 µg/m^3 [3]) (24-hour mean)

[2] Defra (2022) Review & Assessment: Technical Guidance LAQM.TG22 August 2022 Version, [Online], Available: https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf.

[3] 200 µg/m^3 is recommended by Natural England and the IAQM as is it more appropriate for UK Conditions.

Ammonia	Emissions from road traffic, and construction and decommissioning vehicles	Direct toxic effect of sensitive vegetation	3 (1[4]) µg/m^3 (annual-mean)

Study Area

14.6 Our construction dust assessment considers the potential for effects within 350m of our Site boundary, or within 50m of roads used by construction vehicles where they occur within 500m of our Site entrance. This is in line with Institute of Air Quality Management (IAQM)[5] guidance[6].

14.7 For road traffic, we have identified the study area based on the criteria in the Design Manual for Roads and Bridges (DRMB)[7] which considers there is a potential for air quality impacts from vehicle emissions '*on sensitive receptors within 200m of a road'.* A distance of 200m is used as concentrations from the road source decrease rapidly with distance from the source and beyond this distance the road source contribution is not typically discernible.

14.8 The study area is illustrated in **Figure 14-1**.

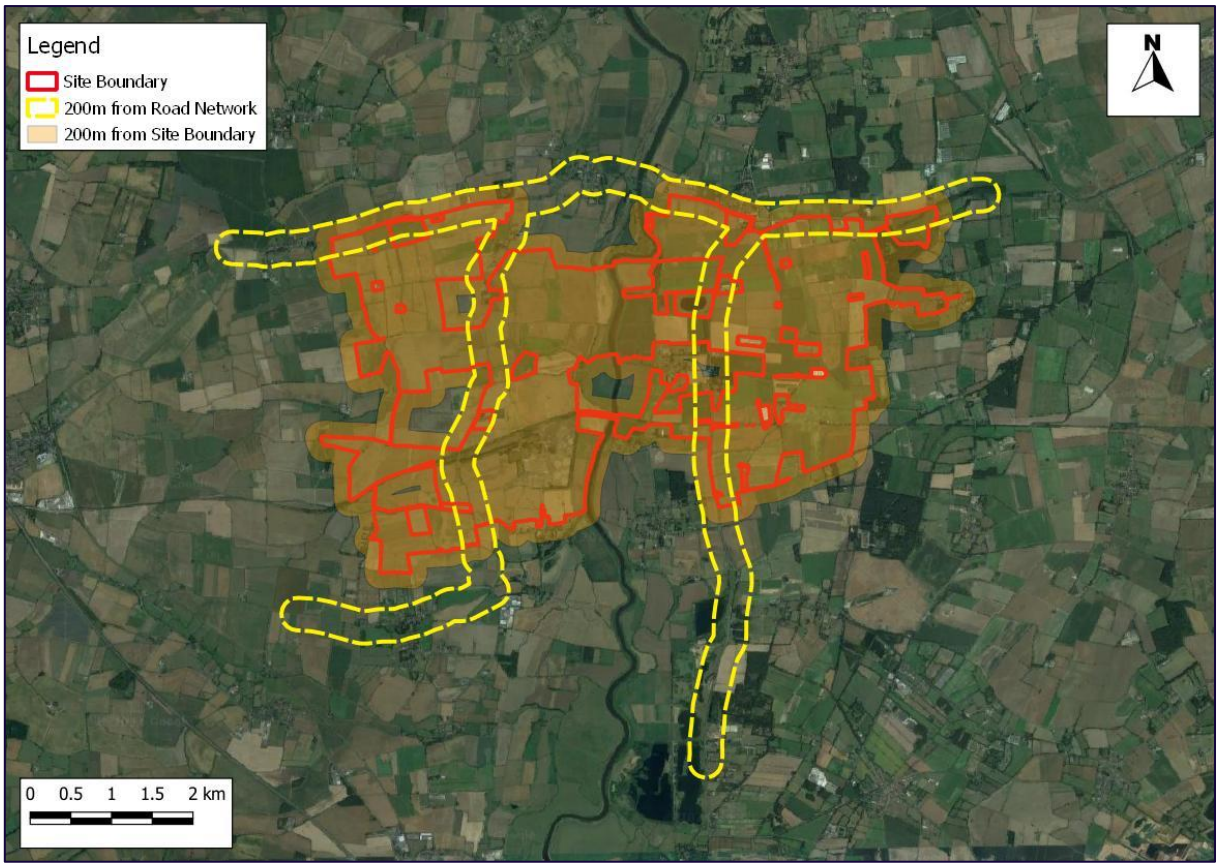
[4] Only applies where lichens or bryophytes are present or form a key part of the ecosystem integrity

[5] The IAQM is the professional body for air quality practitioners in the UK.

[6] IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction v2.2, Available: http://iaqm.co.uk/guidance/.

[7] Highways England (2019) Design Manual for Roads and Bridges LA 105 Air Quality, [Online], Available: https://www.standardsforhighways.co.uk/search/10191621-07df-44a3-892e-c1d5c7a28d90

Figure 14-1: Study Area



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Collection of Air Quality Data

14.9 Existing sources of emissions and baseline air quality conditions within the study area have been defined and identified using a number of approaches and sources:

- Any specific local sources have been identified through discussion with the three host local authorities and through examination of their Air Quality Review and Assessment reports [8] [9] [10];

[8] Bassetlaw District Council (2023) 2023 Air Quality Annual Status Report. Available: https://data.bassetlaw.gov.uk/air-quality-management.aspx

[9] Newark and Sherwood District Council (2023) 2023 Air Quality Annual Status Report. Available: https://www.newark-sherwooddc.gov.uk/media/nsdc-redesign/documents-and-images/your-business/environmental-health/pollution/air-pollution/ASR_NSDC_2023.pdf

[10] West Lindsey District Council (2023) Annual Progress Report 2023. Available: https://www.west-lindsey.gov.uk/sites/default/files/2024-02/Air%20Quality%20Report%202023.pdf

- Information on existing air quality obtained by collating the results of monitoring conducted by the three host local authorities, which is published in their air quality Annual Status Reports. These reports are submitted to the UK Government as part of the local authorities' statutory responsibility to monitor and where necessary improve air quality conditions; and
- Background concentrations as defined using Defra's background maps[11]. These maps cover the whole of the UK on a 1x1 km grid and are based on air quality monitoring data, along with meteorological data for 2018. The background maps also predict concentrations up to the year 2030.

Current Results

14.10 Local authorities must regularly review air quality within their administrative boundaries[12] and declare an Air Quality Management Area (AQMA) in areas where the air quality objectives have not been achieved, as well as produce an action plan to improve air quality in these areas.

14.11 The nearest AQMA to our Site was declared in 2001 for exceedances of the annual and 1-hour mean nitrogen dioxide (NO_2) objectives and is located in Lincoln city centre, approximately 11.1 km to the east of the eastern Site boundary. The AQMA is outside of the study area and our Project is therefore not expected to affect air quality within this area.

Local Air Quality Monitoring

14.12 Bassetlaw District Council (BDC) monitors air quality at numerous locations, of which one is located in the study area, close to the A57 in Dunham, within the study area (as shown in **Figure 14-1**). The location of the monitor in relation to our Project is shown in **Figure 14-2** and the measured annual mean NO_2 results for 2013 to 2022 are shown in **Figure 14-3**. A clear downward trend in concentrations can be observed since 2013 and concentrations have remained well below the air quality objective (see **Table 14-1**) in all years of reported data.

14.13 West Lindsey District Council (WLDC) and Newark & Sherwood District Council (NSDC) also monitor air quality at numerous locations; these monitors are outside of the study area (as shown in **Figure 14-2**) and as such are not considered to be representative of conditions at or near our Site.

[11] Defra (2024) Local Air Quality Management (LAQM) Support Website, Available: http://laqm.defra.gov.uk/.

[12] Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Defra.

Figure 14-2: Air Quality Monitoring Locations

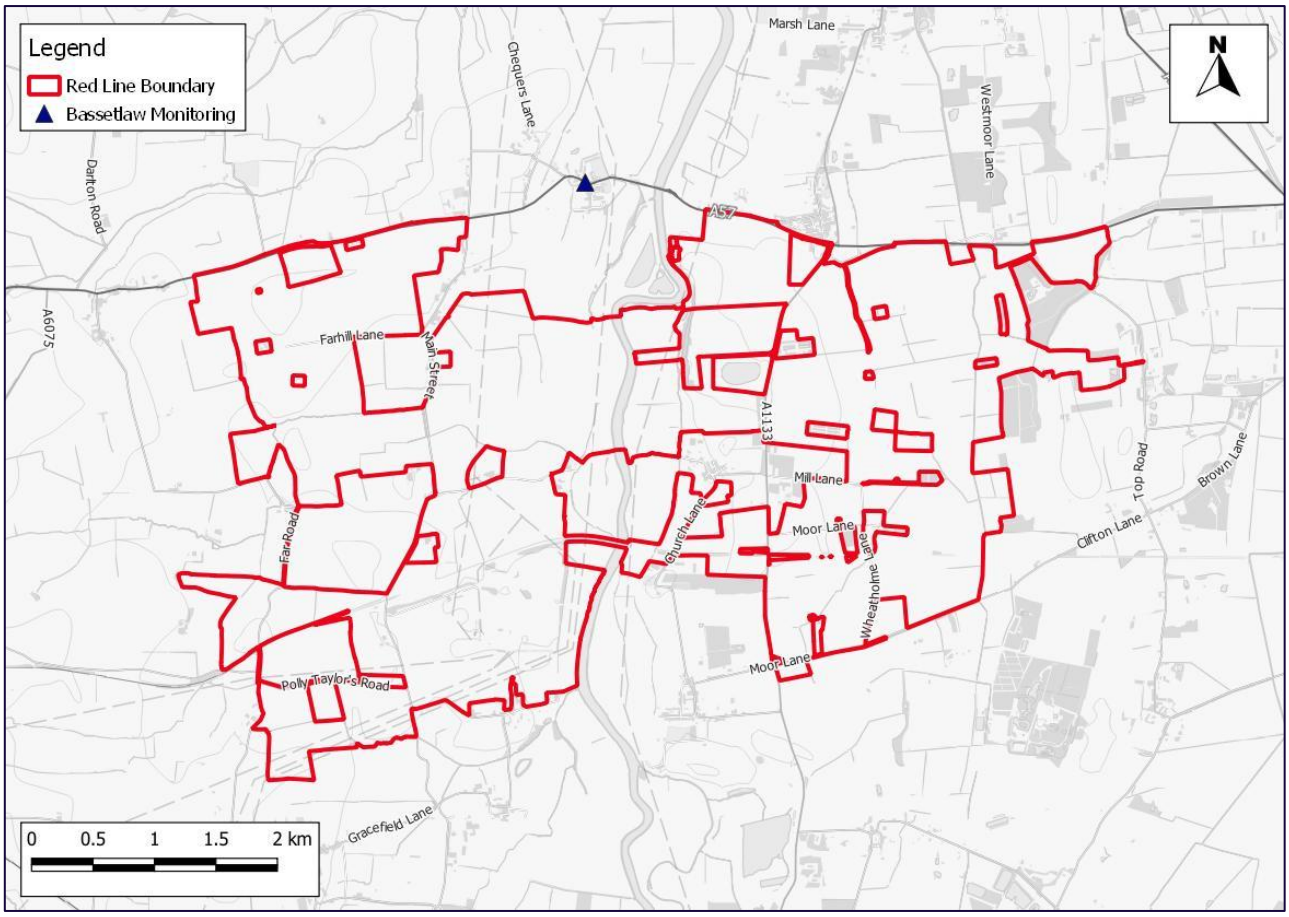
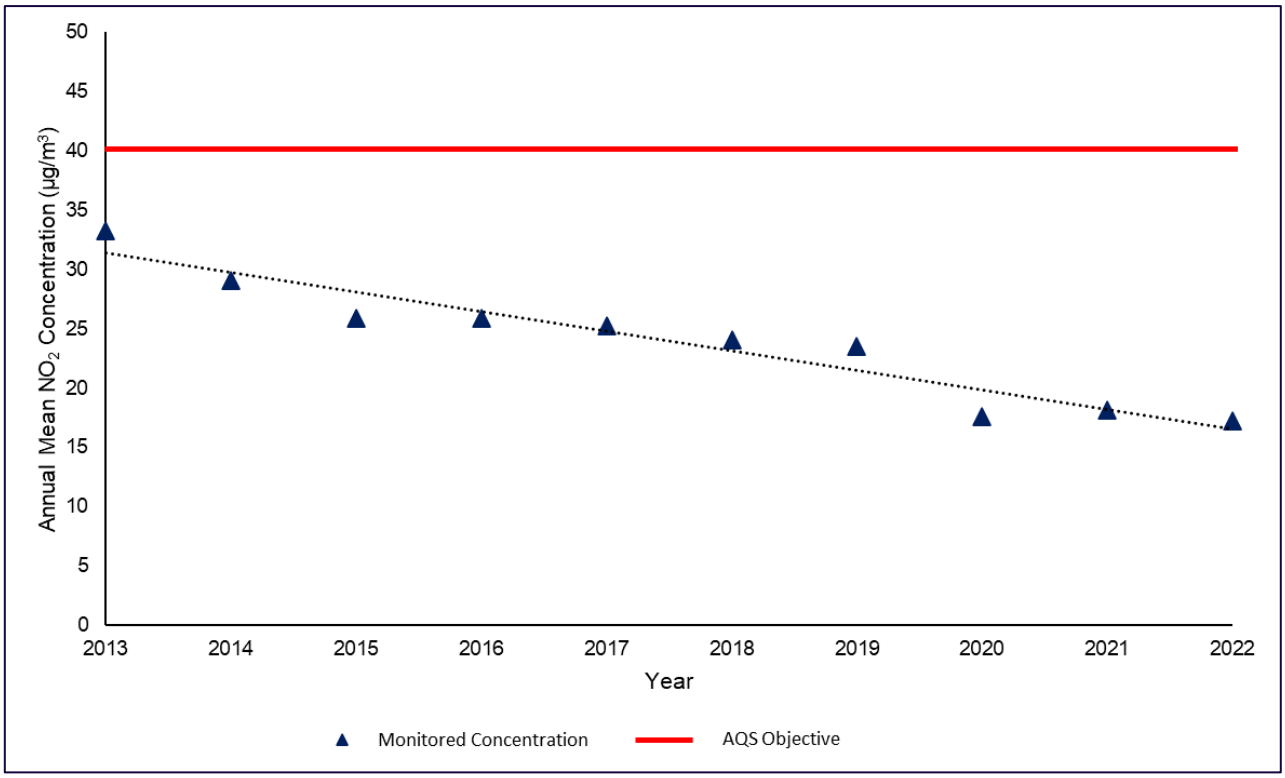


Figure 14-3: Air Quality Monitoring Results 2013 – 2022



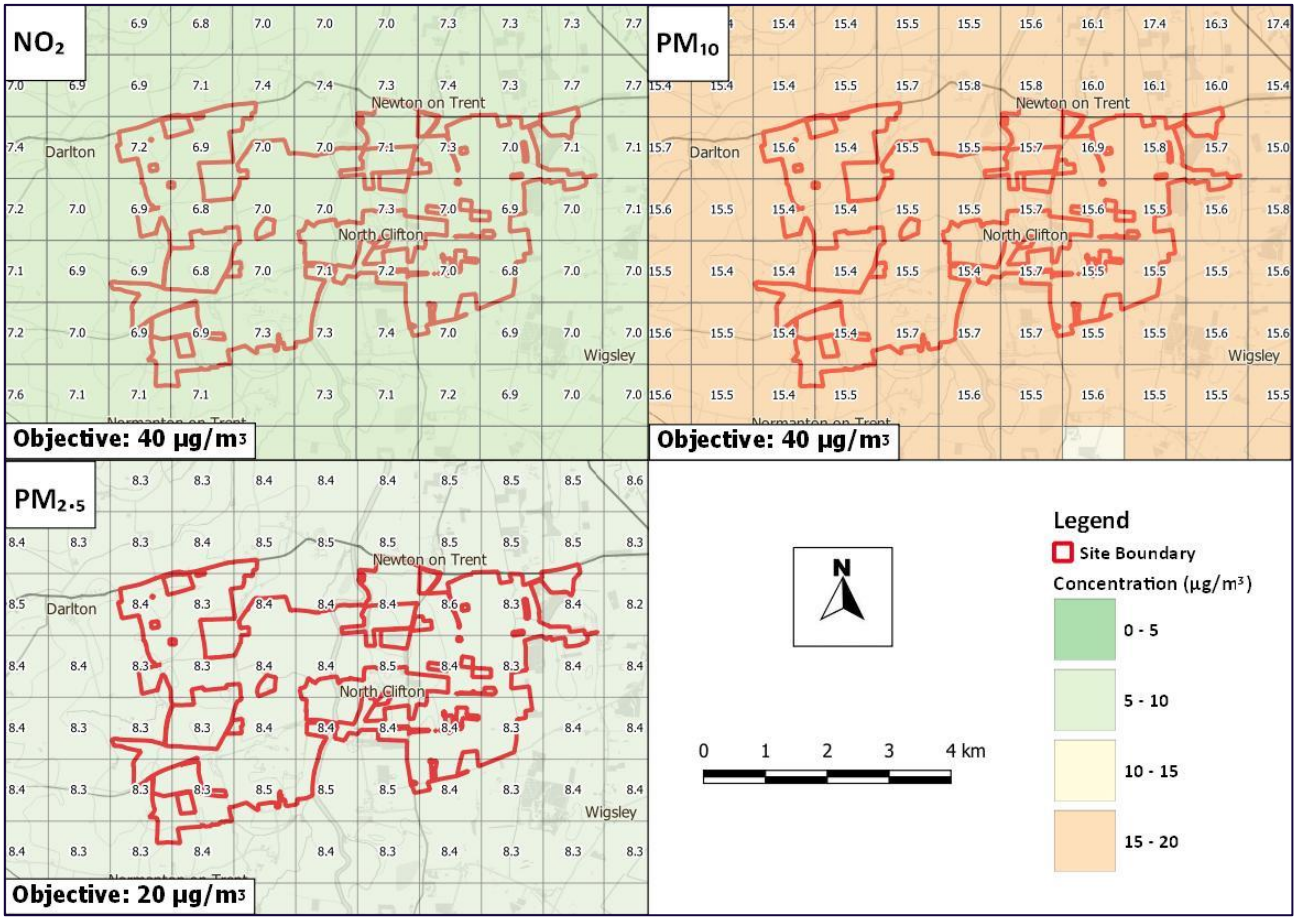
14.14 No monitoring of PM_{10} or $PM_{2.5}$ concentrations is conducted by any of the host authorities.

Background Concentrations

14.15 Estimated 2022 background concentrations of NO_2, PM_{10} and $PM_{2.5}$ in the study area, derived from Defra's 2018-based background maps[13], are presented in **Figure 14-4**, and are well below the objectives for all pollutants (see **Table 14-1**).

[13] Available [Online] at: https://uk-air.defra.gov.uk/data/laqm-background-home

Figure 14-4: 2022 Background Annual Mean NO_2, PM_{10} and $PM_{2.5}$ Concentrations ($\mu g/m^3$)



Further Data Collection

14.16 No additional site-specific data will be collected for our ES, as the available baseline data presented above is considered sufficient to understand existing air quality conditions within the study area.

Future Air Quality Conditions

Collection of Future Air Quality Data

14.17 Future baseline air quality conditions within the study area have also been defined by considering the following:

- Future trends in road traffic emissions have been identified using data from Defra's Emissions Factor Toolkit (EFT)[11] and baseline traffic flow data from the Department for Transport[14]; and

[14] DfT (2024) Road traffic statistics, Available: http://www.dft.gov.uk/matrix/.

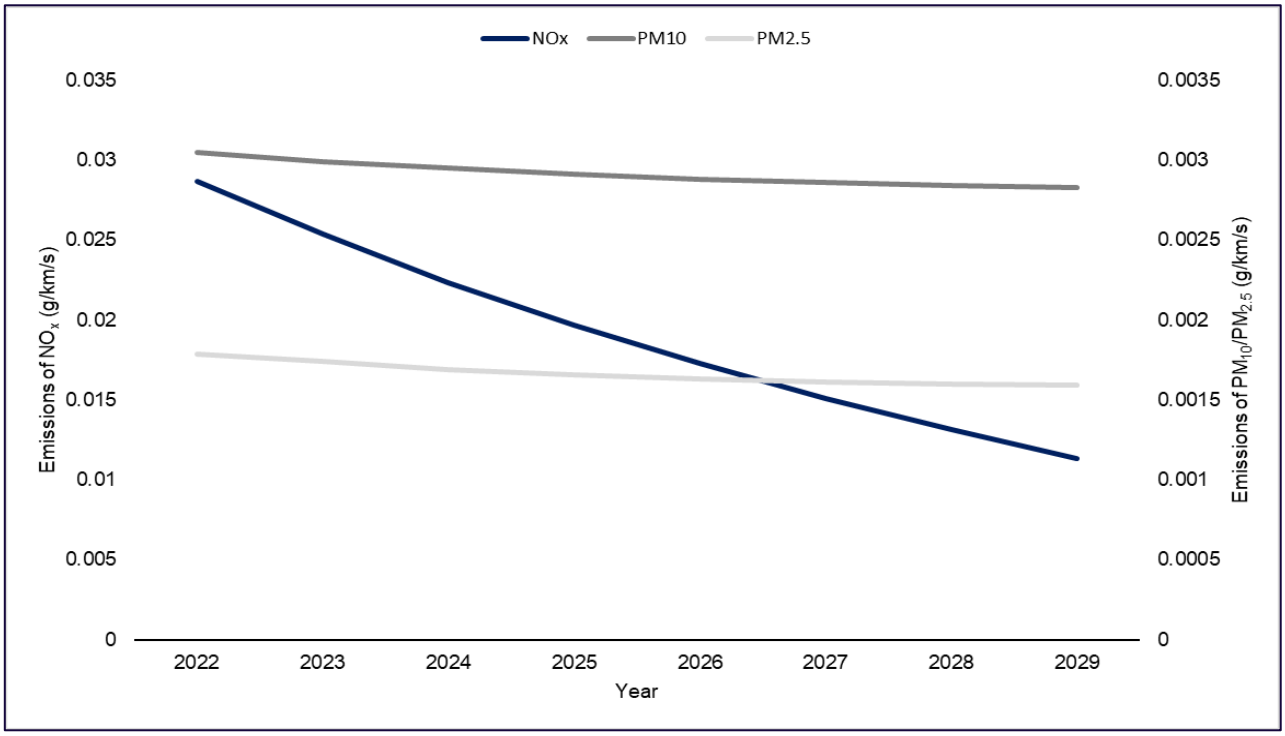
- background concentrations have again been defined using Defra's background maps, which predict concentrations up to the year 2030.

Future Air Quality Results

Road Traffic Emissions

14.18 Air quality is already in many places improving and is expected to continue due to a combination of factors, such as the introduction of more stringent emissions standards for motor vehicles and as a result of specific policies introduced by local and national government to improve air quality, such as clean air zones. This future trend is illustrated in **Figure 14-5**, which shows the expected future exhaust emissions for motor vehicles using data for the A57 near Dunham (taken from the Department for Transport[15]) and using future projection of traffic emissions (from Defra[16]).

Figure 14-5: Vehicle Emission Rates 2022 – 2029



14.19 Whilst there is expected to be a modest reduction in PM_{10} and $PM_{2.5}$ exhaust emissions, NO_x exhaust emissions are expected to decrease significantly between 2022 and 2029 following the trend of the last few years.

[15] Available [online] at: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints

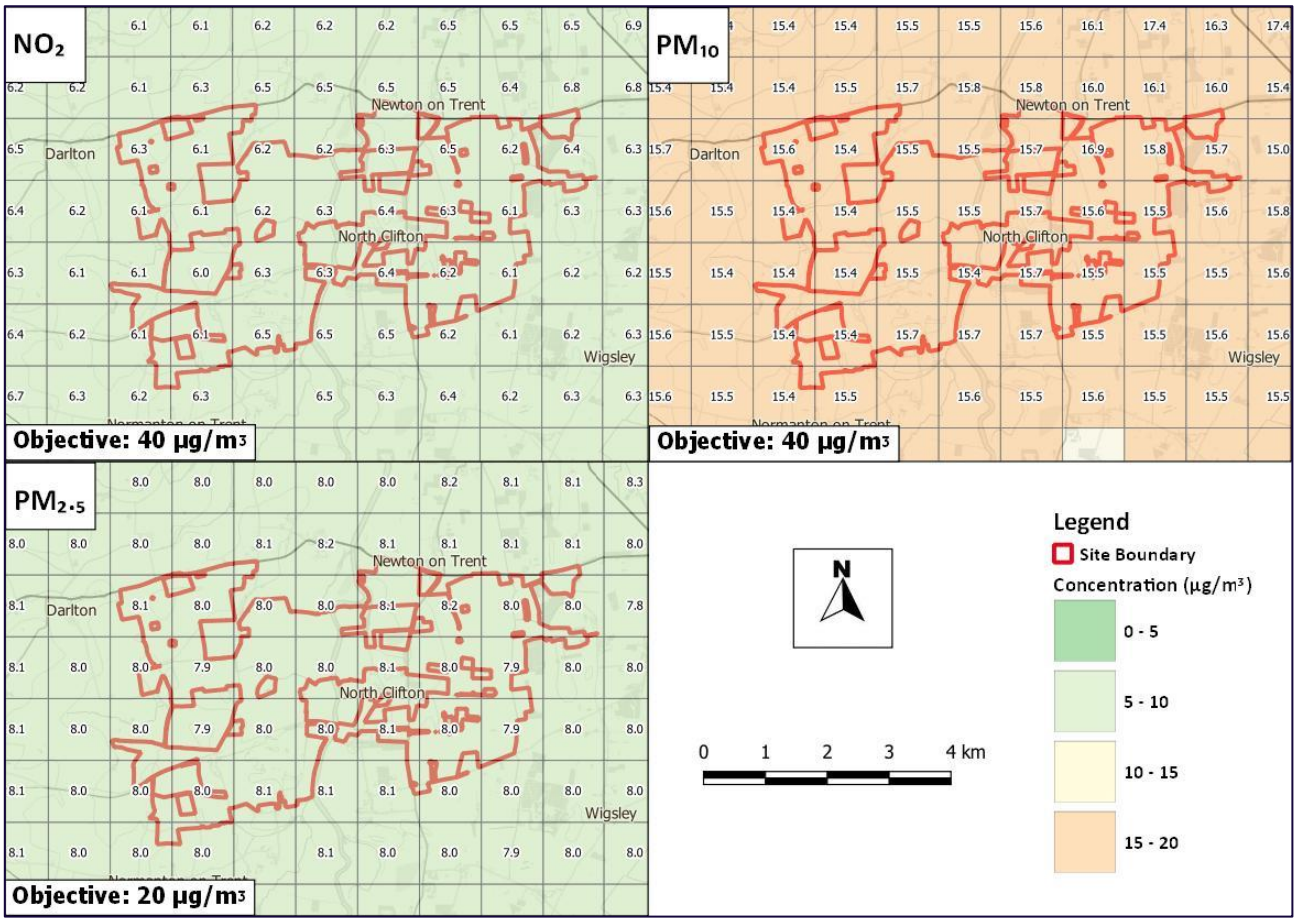
[16] Available [online] at: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/

Background Concentrations

First Year of Construction

14.20 Background concentrations of NO_2, PM_{10} and $PM_{2.5}$ in the study area, derived from Defra's 2018-based background maps, are presented in **Figure 14-6** for the anticipated first year of the construction phase of our Project (2027), assuming our Project remains absent. As is currently the case, all pollutants are well below the respective objective for that pollutant.

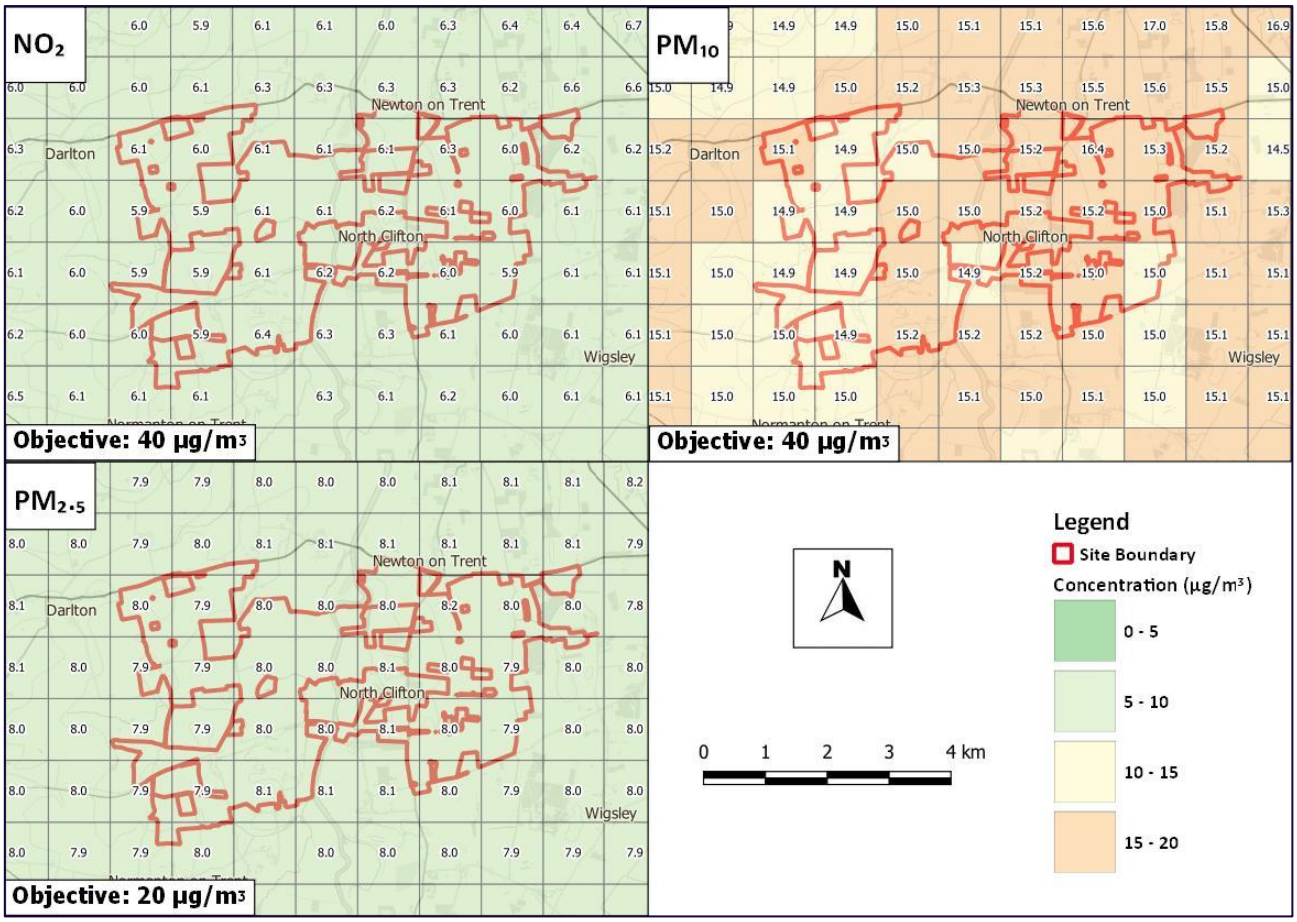
Figure 14-6: 2027 Background Annual Mean NO_2 Concentration (µg/m^3)



First Year of Operation

14.21 Background concentrations of NO_2, PM_{10} and $PM_{2.5}$ in the study area, derived from Defra's 2018-based background maps, are presented in **Figure 14-7** for the anticipated first year of operation of our Project (2029), assuming our Project remains absent. Concentrations remain well below the objectives for all pollutants and continue to fall from current and in fact previous levels. **Figures 14.5, 14.6 and 14.7** clearly show the continual decrease in concentration levels that is expected.

Figure 14-7: 2029 Background Annual Mean NO_2 Concentration (µg/m^3)



Environmental Measures

14.22 Our Project incorporates the adoption of a Dust Management Plan (DMP), Outline Construction Environmental Management Plan (oCEMP) and Outline Decommissioning Environmental Management Plan (oDEMP) to minimise emissions and sources of air pollution during the construction and decommissioning works (see **Chapter 4: Our Project** for details relating to these management plans). These documents will include good design and best practice measures to ensure that adverse impacts to air quality are avoided, reduced or mitigated. These measures are considered to be included within our Project prior to the technical assessment.

Potential Likely Significant Effects Scoped Out

14.23 **Table 14-2** presents the elements which we have scoped out as it is considered no likely significant effects will occur. This has been accepted in the EIA Scoping Opinion received in December 2024 (see **Volume 2: Scoping Consultation**).

Table 14-2: Effects Scoped Out

Elements Scoped Out	Justification
Operational Traffic Emissions	Emissions from road traffic generated by our Project during operation have been scoped out based on guidance from the Environmental Protection UK (EPUK) and the IAQM[17]. This guidance states that increases in traffic flows of less than 100 Heavy Duty Vehicles (HDVs) or 500 Light Duty Vehicles (LDVs) per day will not lead to significant air quality effects. Our Project is not expected to generate this level of increased traffic flows, although this will be revisited in the ES. As such there will be no likely significant effects to air quality.

Preliminary Environmental Assessment

Construction and Decommissioning Phase

Construction and Decommissioning Dust

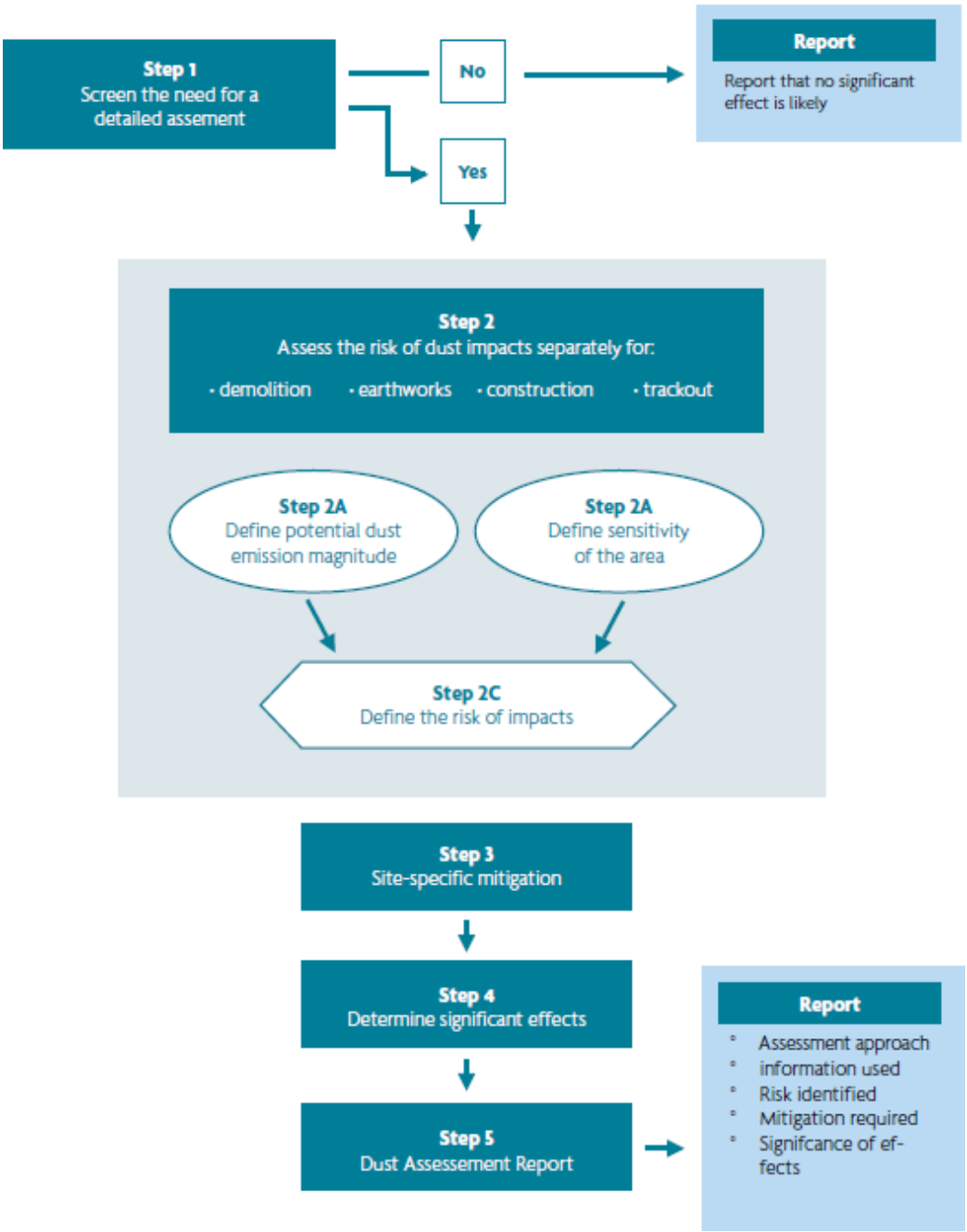
14.24 The main pollutants of concern relate to the construction and decommissioning activities of our Project are dust and PM_{10} (see **Table 14-1**).

Approach

14.25 The potential impacts from dust generated during the construction and decommissioning phases of our Project have been assessed using the approach presented in the IAQM Guidance on the Assessment of Dust from Demolition and Construction**Error! Bookmark not defined.** and detailed in **Appendix 14-2**. This approach follows the steps set out in the flow chart in **Figure 14-8** (which has been taken from the IAQM guidance).

[17] Moorcroft and Barrowcliffe et al (2017) Land-Use Planning & Development Control: Planning For Air Quality v1.2, IAQM, London, Available: http://iaqm.co.uk/guidance/.

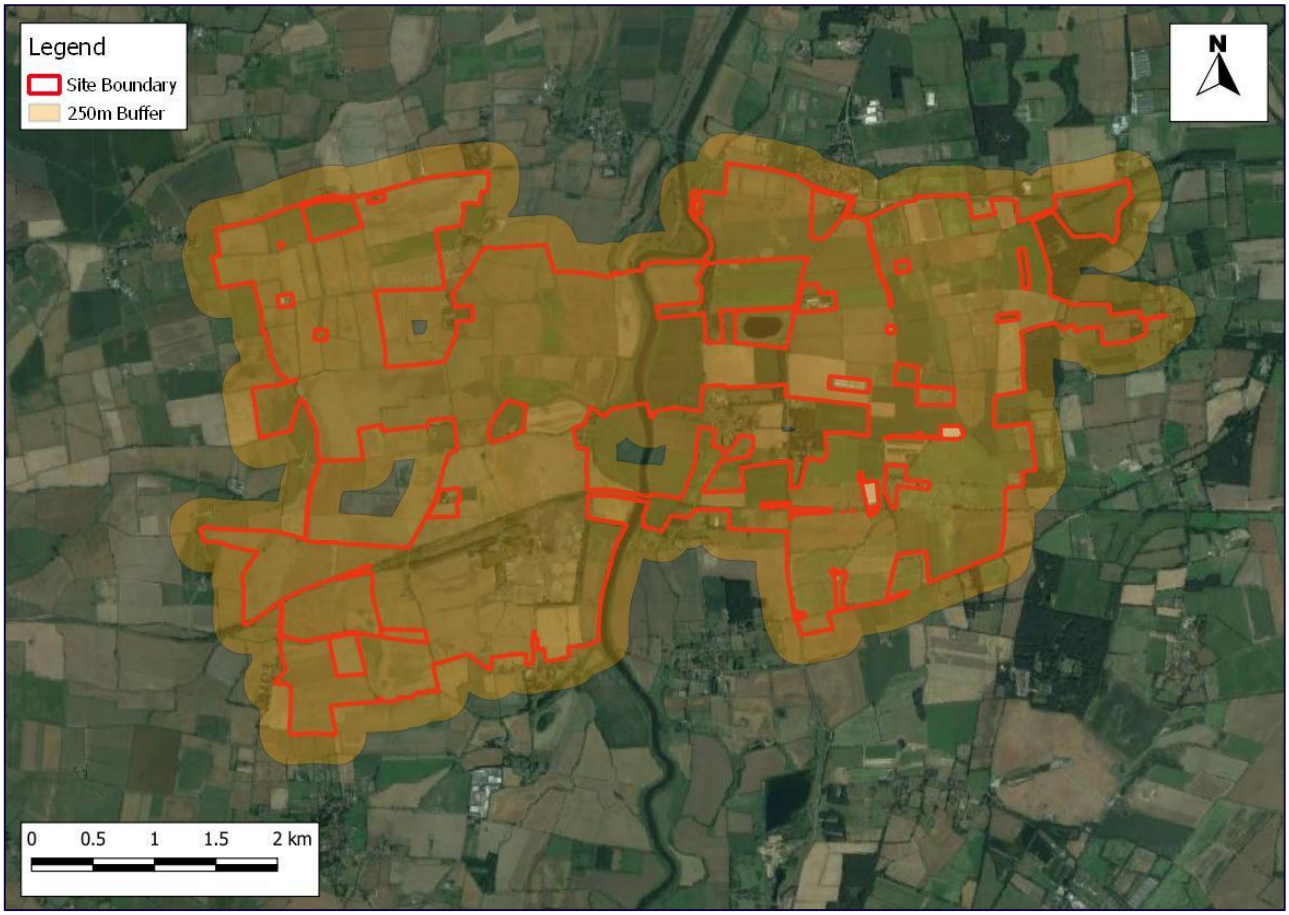
Figure 14-8: Dust Assessment Procedure



Receptors and Receptor Sensitivity

14.26 The IAQM construction dust risk assessment approach does not require specific sensitive receptors to be identified; instead, the numbers of different types of receptors within given distance bands are counted. It considers the potential for impacts within 250m of our Site boundary, or within 50m of roads used by construction vehicles within 250m of our Site, as shown in **Figure 14-9**.

Figure 14-9: 250m Buffer around Site Boundary



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14.27 The guidance explains that residential properties, schools and care homes are 'high' sensitivity receptors to dust soiling, while public parks and places of work are 'medium' sensitivity receptors with farmland being 'low' sensitivity. Residential properties, schools and care homes are classified as being of 'high' sensitivity for human health effects, while places of work and shops are classified as being of 'medium' sensitivity and public parks are of 'low' sensitivity. This approach has been taken and applied to our Project in the preliminary assessment below.

Defining Effects

14.28 The IAQM on the assessment of dust effects from construction activities is clear that, with appropriate mitigation in place, the residual effects will normally be 'not significant':

14.29 *"in the case of demolition / construction it is assumed that mitigation (secured by planning conditions, legal requirements or required by regulations) will ensure that a potential significant adverse effect will not occur, so the residual effect will normally be 'not significant'."*[18]

Preliminary Assessment

14.30 As stated above, a oCEMP and oDEMP will be adopted to minimise the environmental impacts of the construction and decommissioning works, and a set of best-practice measures (as detailed within the IAQM guidance) will be incorporated into the specification for the works. These preliminary measures are listed in **Appendix 4-2**. In accordance with guidance and with the implementation of dust control measures, preliminary results show that there will be no likely significant Air Quality effects in relation to amenity, human health and ecological effects as a result of dust generated by construction and decommissioning activities.

Next Steps

14.31 To ensure the list of measures included in the oCEMP and oDEMP are appropriate, a revised risk assessment (based on the latest description for our Project) will be conducted in accordance with the IAQM guidance and will be presented in our ES. The list of proposed measures will be presented in our ES.

Construction and Decommissioning Traffic on Human Health

14.32 Our Project will generate additional traffic on local roads (which includes the strategic road network as shown in **Figure 14-1** of the study area), the emissions from which may impact air quality at existing properties, retail, education, community properties and public realm spaces, along the affected road network. As shown in **Table 14-1**, the main air pollutants of concern related to road traffic emissions are NO_2, PM_{10} and $PM_{2.5}$.

Approach

14.33 In accordance with the approach set out in the EPUK/IAQM guidance[10] and described in **Appendix 14-3**, the anticipated change in vehicle flows on local roads as a result our Project have been compared to specified screening criteria. The screening thresholds are 100 HDVs or 500 LDVs. Whilst these screening criteria are specifically intended to function as a trigger for a detailed assessment, where the change in traffic on a given road link is less than the relevant screening threshold, it is unlikely that a significant impact to air quality would occur.

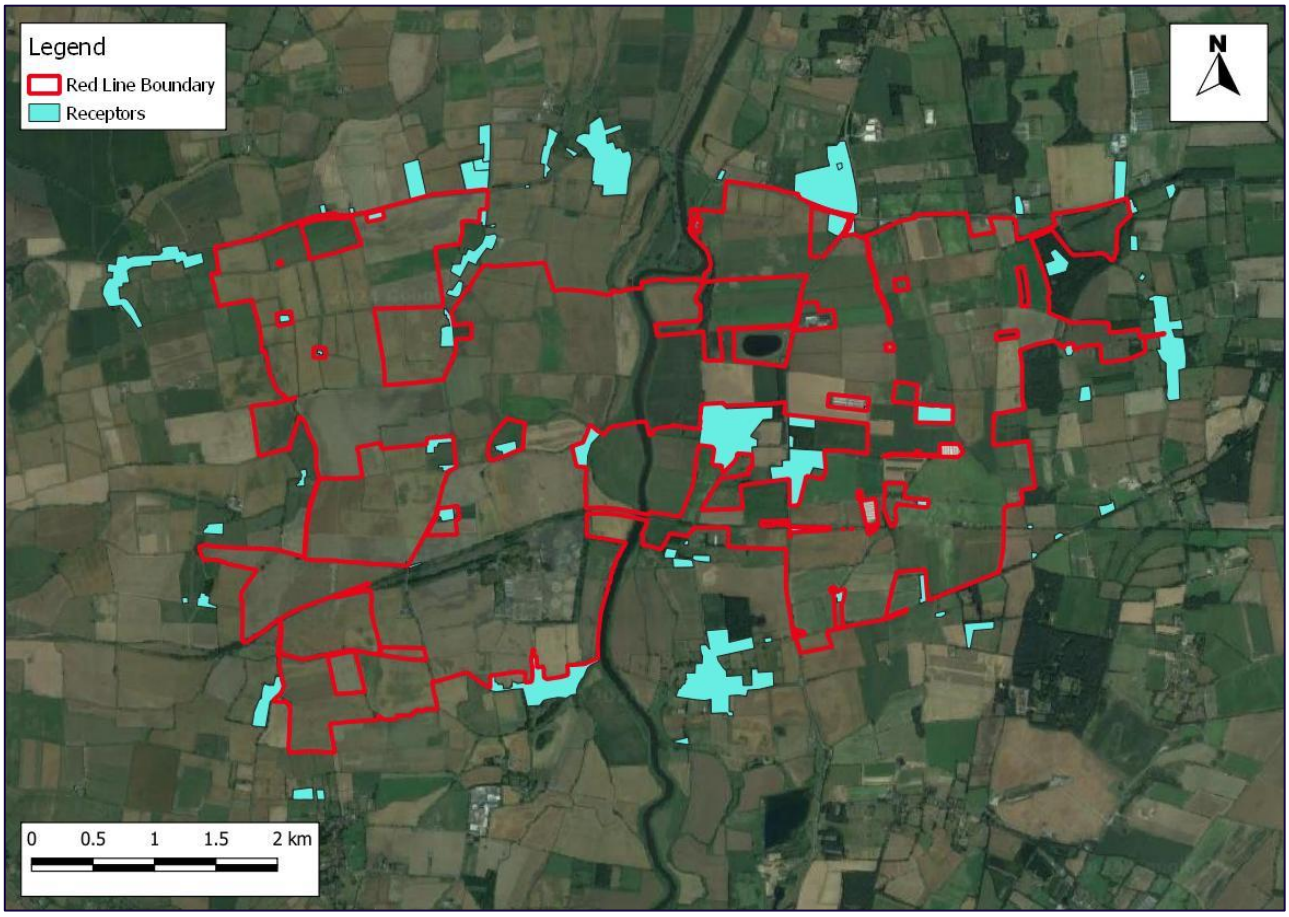
Receptors and Receptor Sensitivity

14.34 All the objectives (see **Table 14-1**) apply at locations where members of the public are likely to be regularly present on a long-term basis such as at residential properties. Only the 1-hour NO_2 applies at retail, education, community properties and public realm spaces as in these locations it is unlikely people will spend an extended period (i.e. 24 hours) in these locations. Offices and places of work are not covered by the national air quality objectives.

[18] As detailed in subheading 9.1 of the Institute of Air Quality Management (2024) Guidance on the Assessment of Dust from Demolition and Construction v2.2, Available: http://iaqm.co.uk/guidance/.

14.35 The locations of all sensitive receptors in proximity to our Site are highlighted **in Figure 14-10**.

Figure 14-10: Receptor Locations



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Defining Effects

14.36 Our preliminary air quality assessment has used published data (including existing air quality data as presented above) and the preliminary traffic trip generation during the construction and decommissioning phases (as provided by the Project Transport Consultant, set out in **Chapter 13: Transport and Access**) to determine the likely air quality impacts from our Project.

14.37 Our approach to define the overall significance of the air quality effects has been taken from the EPUK and the IAQM[17] Guidance. This uses professional judgement, considering numerous factors including the frequency, duration and magnitude of the predicted impacts, their relationship to appropriate air quality objectives and the high sensitivity of the receptors.

14.38 Full details of the EPUK/IAQM approach are provided in **Appendix 14-3** and the experience of the consultants who have prepared this chapter is set out in **Appendix 1-1** in **Chapters 1-6**.

Preliminary Assessment

14.39 The scale and distribution of the anticipated increases in road traffic movements resulting from the construction and decommissioning of our Project is set out in **Chapter 4: Our Project**. This shows the daily movements would be below the IAQM Guidance of 100 HDVs or 500 LDVs outside of an AQMA, although this will be confirmed in the ES. Furthermore, traffic will be managed in a way which minimises the potential air quality impacts at sensitive receptor locations through measures included within the oCEMP and oDEMP (see **Chapter 4: Our Project** for more details on the management plans and **Appendix 4.1** for the likely measures to be employed during construction). In addition, the existing and future baseline concentrations across our Site (presented in **Figures 14-6 to 14-7**) are reported well below the relevant air quality objectives. Based on these details, our preliminary results show there is likely to be no significant air quality effects as a result of the construction and decommissioning generated traffic.

Next Steps

14.40 In the ES, an air quality computer dispersion model approved by Defra (known as ADMS-Roads) will be used to quantify the impacts that road traffic emissions (associated with existing and development-generated road traffic) will have on air quality at existing receptor locations.

14.41 Our model will be used to predict annual mean concentrations of NO_2, PM_{10} and $PM_{2.5}$ at representative worst-case existing sensitive receptors, which will in turn also be used to assess the likelihood of exceedances of the 1-hour mean NO_2 objective and 24-hour mean PM_{10} objective according to the methodology set out in LAQM.TG(22)[2].

14.42 Our assessment will be based on the likely worst-case option with respect to traffic generation for the assessment of the impacts of our Project on existing local air quality (i.e. the year of construction or decommissioning predicted to generate the greatest number of additional vehicle trips).

14.43 More details on the modelling approach are set out in our EIA Scoping Report issued in October 2023 (see **Volume 2: Scoping Consultation**).

Construction and Decommissioning Traffic on Ecological Sites

14.44 There is the potential for our Project to have a significant effect on sensitive ecological sites within the study area from construction and decommissioning traffic emissions. As shown in **Table 14-1** the main air pollutants of concern related to potential ecological effects are NO_x and ammonia.

Approach

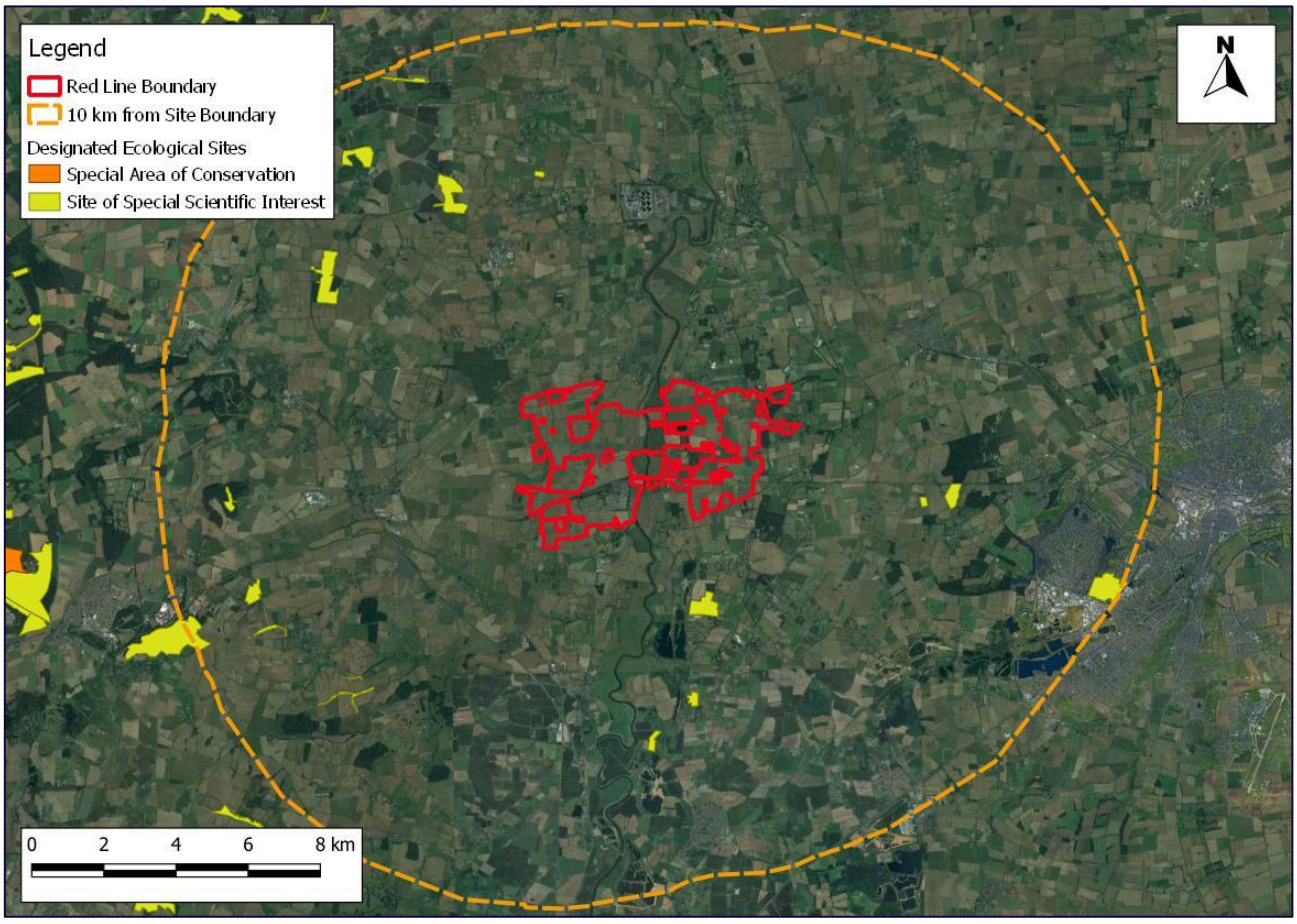
14.45 A qualitative review has been undertaken based on the location of designated ecological sites and sensitivity of the habitats to changes in traffic pollutants; distances of these sites to the road network to be used for our Project; the anticipated roads to be used for our Project and the anticipated increases in traffic on local roads associated with our Project. Using these factors, our Project ecologists have determined if there is likely to be a significant effect.

Receptors and Receptor Sensitivity

14.46 Internationally and nationally designated ecological sites – Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar and Sites of Special Scientific Interest (SSSI) – within 10km of our Project were identified. Those located within 200m of a road likely to be affected by the operation of our Project have been considered as sensitive for potential likely significant effects. Specifically, there are two SSSIs located within 200m of the A1133 (Spalford Warren SSSI and Besthorpe Warren SSSI).

14.47 The locations of all sensitive receptors in proximity to our Site are highlighted in **Figure 14-11**.

Figure 14-11: Ecological Receptor Locations



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Defining Effects

14.48 As above, the effects have been defined using professional judgement, by considering numerous factors including the volume and distribution of traffic, baseline traffic flows on the affected roads and the locations and sensitivity of the designated ecological sites within the study area.

Preliminary Assessment

14.49 As detailed in **Chapter 7: Biodiversity**, emissions from traffic from our Project can lead to habitat change through nutrient deposition, acidification and direct toxicity. However, they are scoped out of the ecology assessment because there are no European sites within 200m of roads on which a detectable rise in traffic would be predicted during the construction phase. There are two SSSI within 200m of the A1133 (Spalford Warren SSSI and Besthorpe Warren SSSI), however these are south of our Site on a stretch of road that is unlikely to be a major construction traffic route, given access from the A57 is proposed. Additional, construction and decommissioning traffic can be discounted as the increase in traffic will be temporary and limited, ensuring that the extent of the effect will be low, temporary and reversible. This justification equally applies to LWSs present within the area. These effects have been accepted in the Scoping Opinion, whereby the impacts were agreed to be scoped out.

Next Steps

14.50 The ongoing assessment will be developed based on AADT flows provided by the appointed Transport Consultant and reported in our ES.

Construction and Decommissioning Plant

14.51 The main pollutants of concern related to emissions from the use of construction and decommissioning plant are NO_2, PM_{10} and $PM_{2.5}$ (see **Table 14-1**).

Approach

14.52 In the absence of any recommended guidance on the assessment of construction plant, we have adopted the Non-Road Mobile Machinery Practical Guide[19], which sets out the type of plant which is likely to have effects on air quality based on the size of plant. Whilst this guidance is used in London, taking account of the stricter emission limits set out by the Greater London Authority, it is considered robust for use for this assessment.

14.53 The construction and decommissioning plant were then considered assessed against the IAQM Guidance methodology which states "*consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur*".

Receptors and Receptor Sensitivity

Sensitive receptors have been determined according to the same criteria discussed in paragraph 14.34 and their locations are presented in **Figure 14-10**.

Defining Effects

14.54 The effects have been defined using professional judgement, by considering numerous factors including the type of plant proposed, the duration of emissions and the likely location of use within our Site.

Preliminary Assessment

[19] Cleaner Construction for London, Putting Air Quality First (2022) Non-Road Mobile Machinery (NRMM) Practical Guide v.5. Available: https://www.london.gov.uk/media/47992/download

14.55 As set out in the Non-Road Mobile Machinery Practical Guide[20], only construction and decommissioning plant with a rated power output between 37-560kW are likely to give rise to air quality effects. Plant sized between 37-560kW which is likely to be used during the construction and decommissioning of our Project is likely to include:

- Excavators – for the preparation, grading and trenching for cables laying;
- Mobile cranes – lifting heavy equipment and panels into place;
- Compact track loaders – moving smaller loads and materials across rough terrain;
- Telehandlers (Telescopic Handlers) - used for lifting and transporting materials and equipment;
- Bulldozers - used for grading and levelling our Site;
- Flatbed trucks - transporting solar panels, mounting structures, and other large materials;
- Dump trucks – for moving earth, gravel, and other construction materials;
- Water trucks - used for dust suppression and site watering during construction;
- Generators - to provide temporary power during installation;
- Concrete mixers and pump trucks - used for pouring concrete foundations for mounting structures and equipment pad
- Pile driver - driving piles into the ground;
- Trencher – for installing the cabling into the ground; and
- Compactors – compacting soil and gravel for roads and foundations.

14.56 The above plant will be used intermittently during the 2-year construction programme of our Project, depending on the construction activities to be undertaken and will move across our Site as our Project is built out. Construction working hours will be 07.00 - 19.00 Monday to Saturday with allowance for occasional, overnight working where operations cannot be paused.

[20] Cleaner Construction for London, Putting Air Quality First (2022) Non-Road Mobile Machinery (NRMM) Practical Guide v.5. Available: https://www.london.gov.uk/media/47992/download

14.57 As detailed in **Chapter 4: Our Project**, setback distances from residential properties (such as battery storage systems being located more than 300m from residential properties) are included within the Design Principles. These distances, as well as the temporary nature of the plant to be used, and the low levels of air pollution at our Site (as presented in **Figures 14-5** to **14-7**) means it is unlikely there will be a risk of emissions (either in isolation or combination) that could result in an exceedance of the air quality strategy objectives. Furthermore, construction and decommissioning plant will be managed in a way which minimises the potential air quality impacts at sensitive receptor locations through measures included within the oCEMP and oDEMP. The preliminary results show there is likely to be no significant air quality effects as a result of the construction and decommissioning plant.

Next Steps

14.58 The likely plant, as well as the likely duration and location of the plant to be used as part of the construction and decommissioning phase of our Project, will be detailed in our ES in order to confirm and demonstrate if there are no likely significant air quality effects.

Conclusions

14.59 **Table 14.3** presents a summary of the preliminary likely significant effects, with the ongoing information that will be collected also outlined. It also details the next steps that will be undertaken to inform our Environmental Impact Assessment.

Table 14.3: Summary of Likely Significant Effects

Element	Result of Preliminary Assessment	Further Information	Next Steps
Construction and Decommissioning Dust	No likely significant effects	With the adoption of a oCEMP and a set of best-practice measures to control dust generation, no significant effects are likely.	Risk assessment will be carried out in accordance with the IAQM guidance to determine the dust measures to be included within our Project and presented in our ES.

Construction and Decommissioning Traffic Human Health	No likely significant effects	Current and future air quality conditions in the study area significantly below the relevant air quality objectives, such that no exceedances are likely.	An air quality computer dispersion model will be used to quantify the impacts of road traffic emissions. The results will be presented in our ES.
Construction and Decommissioning Traffic on Ecological Sites	No likely significant effects	Based on the expected volume of additional road traffic using roads within 200 m of sensitive ecological sites, no significant effects are likely.	A detailed screening of potential effects, based on traffic flow data from the appointed Transport Consultant, will be carried out and presented in our ES. Should the screening threshold be exceeded, a computer dispersion model will be used to quantify the impacts on designated ecological sites.

Construction and Decommissioning Plant	No likely significant effects	Based on the anticipated size of the plant, proximity to existing sensitive receptor locations and considering current and future air quality conditions in the study area are significantly below the relevant air quality objectives, no exceedances are likely.	The likely plant to be used for our Project will be set out in the ES.

Appendices

Appendix 14-1: Key Policy and Legislation

Review of Policy, Legislation and Relevant Guidance

Legislation, planning policy and guidance relating to air quality, and pertinent to the Proposed Development comprises:

Legislation

EU Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

This EU directive established key overarching objectives in the field of air quality, incorporating targets to improve human health and environmental quality. Targets were specifically set for 12 different air pollutants to be managed by air quality standards. This directive set maximum thresholds of “fine particulate matter” across the EU, at 25 µg/m^3 for a yearly period.

The Environmental Protection Act (1990)

This Act set out the structure of emission control within England, Wales and Scotland. Particularly in regard to air quality, this act set controls which have worked toward reducing air pollution. Part III of the Act details information on statutory nuisances and associated penalties.

Environment Act (1995)

This Act established the Environment Agency and transferred to it powers over the control of pollution and the conservation and enhancement of natural resources and the environment. Part IV focuses specifically upon the management of air quality, and introduced the requirement for local authorities to evaluate air quality in their regions and develop actions if improvement is required, through the implementation of Air Quality Management Areas (AQMAs).

The Clean Air Act (1993)

This Act builds upon the original Clean Air Act 1956 (and subsequent amendments in 1968) and has an essential domestic regulatory role in controlling domestic and industrial air pollution, specifically smoke. Under section 20 of the Act, it is an offence to emit building, chimney or industrial plant smoke within a control area.

The Air Quality (England) Regulations (2000)

This is a set of regulations for England which help protect and enhance public health via the control and reduction of air pollution. This regulation sets limits upon ambient air pollutants, further establishing mechanisms for reporting and monitoring air quality.

The Air Quality (England) (Amendment) Regulations (2002)

The Air Quality (England) Regulations (2000) were amended in 2002 to include further information and objectives for Benzene. Further objectives were altered for carbon monoxide.

The Air Quality Standards Regulations (2010)

These regulations set legally binding limits for various pollutants including nitrogen and sulphur dioxide in ambient air. These regulations empowered local authorities to further develop action plans to address air quality concerns and look to improve baselines. These regulations clearly define how pollutants must be reported by local authorities.

National Planning Policy

Overarching National Policy Statement for Energy (EN-1) (2023)

This provides overarching government policy on energy NSIPs, how planning applications relating to energy will be assessed, and the way in which any impacts and mitigation measures will be considered. Part 5, Section 5.2 of this policy statement specifically relates to air quality and emissions.

Paragraph 5.2.8 to 5.2.9 states that *"Where the project is likely to have adverse effects on air quality the applicant should undertake an assessment of the impacts of the proposed project as part of the ES.*

The ES should describe:

- *existing air quality concentrations and the relative change in air quality from existing levels;*
- *any significant air quality effects, mitigation action taken and any residual effects, distinguishing between the project stages and taking account of any significant emissions from any road traffic generated by the project;*
- *the predicted absolute emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied; and*
- *any potential eutrophication impacts."*

National Planning Policy Framework (2023)

The National Planning Policy Framework (NPPF) is an overarching document which sets out government planning policy for England, and how this is expected to be applied by local authorities and developers. The NPPF provides a framework for local sustainable development via local plans. Specific extracts relating to our Project are as follows:

Section 15 relates to the conservation and enhancement of the natural environment. Paragraph 191 states that *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."*

Paragraph 192 states that *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan"*.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

In-line with the Environment Act 2021, this regulation sets two $PM_{2.5}$ targets, which require that:

"The annual mean concentration target is that by the end of 31st December 2040 that annual mean level of $PM_{2.5}$ in ambient air must be equal to or less than 10 $\mu g/m^3$.

The population exposure reduction target is that there is at least a 35% reduction in population exposure by the end of 31st December 2040 ("the target date"), as compared with the average population exposure in the three-year period from 1st January 2016 to 31st December 2018 ("the baseline period"), determined in accordance with regulation 8."

The Environment Act 2021 (2021)

This legislation is part of a new post-Brexit legal framework in the UK for environmental protection. The Act makes provisions for targets, plans and policies toward general improvement of the natural environment. One of the key priority areas is air quality. Regulation 7 of the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 set the target to work toward at least a 35% reduction in $PM_{2.5}$ population exposure by 2040, compared to levels established in 2018.

Environmental Improvement Plan (2023)

This plan is a legal requirement as part of the Environment Act 2021 and presents a 5-year update to the delivery of the initial 25-Year Environment Plan. From an air quality standpoint, to deliver on the targets and commitments within the 25-Year Environment Plan, this document outlines the government's delivery approach:

"Continue to tackle domestic emissions by reducing the maximum emissions for domestic burning appliances in Smoke Control Areas and by promoting best practice in use of stoves and fireplaces.

Challenge local authorities to improve air quality more quickly by assessing their performance and use of existing powers, while supporting them with clear guidance, funding, and tools.

Facilitate the rollout of further Clean Air Zones by local councils in areas which are in breach of air quality statutory limits, with further zones and other non-clean air zone measures as required.

Re-align regional air quality zones in line with local government boundaries to drive effective coordinated action.

Reduce ammonia emissions by using incentives in our new farming schemes, while considering expanding environmental permitting conditions to dairy and intensive beef farms.

Continue to support the move away from petrol and diesel cars and consult on an extension to the existing North Sea Emission Control Area to cover the Irish Sea, reducing emissions from shipping."

Clean Air Strategy (2019)

This policy paper is an overarching summary of actions required across UK government to improve air quality. Broadly this document looks at reducing emissions from transport, homes, farming and other industry to progress towards meeting wider goals.

Air Quality Strategy (2023)

This strategy is the latest document to fulfil the statutory requirements contained within the Environment Act 1995 (as amended by the Environment Act 2021), and sets out the most up to date framework to deliver air quality objectives at a local authority level. The priorities of the strategy are to introduce planning reforms, build local capacity and awareness, boost active travel and public transport, reduce household pollution and improve enforcement of permits within industry.

Reducing Emissions from Road Transport: Road to Zero Strategy (2018)

This strategy specifically focuses on road transport and intervenes in the design and manufacturing sectors to reduce emissions from current vehicles, promote uptake of cleaner vehicles in future, and reduce emissions from road freight. This will be done through several different policy interventions.

UK plan for tackling nitrogen dioxide concentrations: an overview (2017) and Supplement (2018).

This plan is specifically aimed at reducing Nitrous Oxide pollution (NO_2) in the UK at a local authority level. The initial 2017 plan details interventions including investment into implementation and clean air funds, as well as investment into improving emissions from the bus network in the UK. The supplementary guidance in 2018 focuses on local authorities that have short term NO_2 exceedances.

Local Planning Policy

Local planning policy relevant to our Project is set out below. Local policies can be an important and relevant consideration for NSIPs as well, but in the event of any conflict, the NPS policy prevails.

Newark and Sherwood District Council (2023), Local Development Framework, Allocations and Development Management, Development Plan Document (AADMDPD). Submission Version, January 2024.

This amended local Development Plan Document (DPD) has been compiled to ensure that the wider development framework within Newark and Sherwood District Council sufficiently allocates land for development to meet the needs of the area, up until 2033. This DPD is currently under examination via the Secretary of State with an independent planning inspector appointed to consider our Project plan document. The document includes *"new and amended Housing and Affordable Housing Policies which replace those included in the Amended Core Strategy and new Gypsy Roma Traveller policies and allocations. The document also sets out amendments to urban boundaries and village envelopes, retail boundaries as well as sites requiring continued protection from development (open space and green infrastructure designations). It also includes a suite of Development Management policies to provide greater direction, help deliver specific allocations and assist in the day-to-day assessment of planning applications."*

Specific policies within the AADMDPD relevant to our Project include Policy DM10 *"Pollution and Hazardous Materials"* which states that *"Development proposals involving hazardous materials or the potential for pollution should take account of and address their potential impacts in terms of health, the natural environment, and general amenity on:*

1. Neighbouring land uses;

2. The wider population;

3. Ground and surface water;

4. Air quality; and

5. Biodiversity.

Proposals for potential point source polluters and other activities that have potential to lead to increased deposition of nitrogen should, as part of any planning application, consider the potential for effects on European sites and the scope for avoiding or mitigating these.

A conceptual site model should be prepared with an investigation report for the potential development site. A site investigation to confirm the conceptual site model should then be undertaken and, dependent upon findings, a remediation/mitigation plan with subsequent validations should then be agreed with the planning authority. Any impact should be balanced against the economic and wider social need for the development. Proposals should include necessary mitigation as part of the development or through off-site measures where necessary. Harmful development which cannot be made acceptable will be resisted.

Development proposals near hazardous substance installations, as defined on the Policies Map, or near development with the potential for significant pollution should take account of and address the potential risk arising from them. Any risk should be balanced against the economic and wider social need for the development. Development that would be put at an unacceptable risk from its proximity to such installations will be resisted.

Where a site is known, or highly likely to have been contaminated by a previous use, investigation of this and proposals for any necessary mitigation should form part of the proposal for redevelopment. Where contamination comes to light as part of the development process, the proposal will be determined in light of this.

Development proposals within and with the potential to impact on the Groundwater Source Protection Zone, as defined on the Policies Map, should address the potential risk through mitigation as part of the development or through off-site measures where necessary. Proposals that present an unacceptable risk to the Groundwater Source Protection Zone will be resisted.

All proposals will be required to address the Landscape Character of the District, in accordance with Core Policy 13 of the Amended Core Strategy and satisfy the criteria of other relevant Development Plan Documents."

Central Lincolnshire Local Plan (2023)

The Local Plan for the central Lincolnshire area sets out the approach to planning policy and overarching development allocations to drive growth in the area over a 20-year period. The Local Plan is contextualised into a wider vision, series of objectives and core policies toward delivery.

Specific policies detailed in the Local Plan and are relevant to our Project, as below.

Policy S14 "*Renewable Energy*" states that:

"The Central Lincolnshire Joint Strategic Planning Committee is committed to supporting the transition to a net zero carbon future and will seek to maximize appropriately located renewable energy generated in Central Lincolnshire (such energy likely being wind and solar based).

Proposals for renewable energy schemes, including ancillary development, will be supported where the direct, indirect, individual and cumulative impacts on the following considerations are, or will be made, acceptable. To determine whether it is acceptable, the following tests will have to be met:

> *i. The impacts are acceptable having considered the scale, siting and design, and the consequent impacts on landscape character; visual amenity; biodiversity; geodiversity; flood risk; townscape; heritage assets, their settings and the historic landscape; and highway safety and rail safety;*
>
> *ii. The impacts are acceptable on aviation and defence navigation system/communications; and*
>
> *iii. The impacts are acceptable on the amenity of sensitive neighbouring uses (including local residents) by virtue of matters such as noise, dust, odour, shadow flicker, air quality and traffic;*

Testing compliance with part (i) above will be via applicable policies elsewhere in a development plan document for the area (i.e. this Local Plan; a Neighbourhood Plan, if one exists; any applicable policies in a Minerals or Waste Local Plan); and any further guidance set out in a Supplementary Planning Document.

In order to test compliance with part (ii) above will require, for relevant proposals, the submission by the applicant of robust evidence of the potential impact on any aviation and defense navigation system/communication, and within such evidence must be documented areas of agreement or disagreement reached with appropriate bodies and organizations responsible for such infrastructure.

In order to test compliance with part (iii) above will require, for relevant proposals, the submission by the applicant of a robust assessment of the potential impact on such users, and the mitigation measures proposed to minimize any identified harm.

For all matters in (i)-(iii), the applicable local planning authority may commission its own independent assessment of the proposals, to ensure it is satisfied what the degree of harm may be and whether reasonable mitigation opportunities are being taken.

Where significant adverse effects are concluded by the local planning authority following consideration of the above assessment(s), such effects will be weighed against the wider environmental, economic, social and community benefits provided by the proposal. In this regard, and as part of the planning balance, significant additional weight in favour of the proposal will arise for any proposal which is community-led for the benefit of that community.

In areas that have been designated for their national importance, as identified in the National Planning Policy Framework, renewable energy infrastructure will only be permitted where it can be demonstrated that it would be appropriate in scale, located in areas that do not contribute positively to the objectives of the designation, is sympathetically designed and includes any necessary mitigation measures.

Additional matters for solar-based energy proposals

Proposals for solar thermal or photovoltaic panels and associated infrastructure to be installed on existing property will be under a presumption in favour of permission unless there is clear and demonstrable significant harm arising.

Proposals for ground-based photovoltaics and associated infrastructure, including commercial large-scale proposals, will be under a presumption in favour unless:

- *There is clear and demonstrable significant harm arising; or*
- *The proposal is (following a site-specific soil assessment) to take place on Best and Most Versatile (BMV) agricultural land and does not meet the requirements of Policy S67; or*
- *The land is allocated for another purpose in this Local Plan or other statutory-based document (such as a nature recovery strategy or a Local Transport Plan), and the proposal is not compatible with such other allocation.*

Proposals for ground-based photovoltaics should be accompanied by evidence demonstrating how opportunities for delivering biodiversity net gain will be maximized in the scheme taking account of soil, natural features, existing habitats, and planting proposals accompanying the scheme to create new habitats linking into the nature recovery strategy.

Additional matters for wind-based energy proposals

Proposals for a small to medium single wind turbine, which is defined as a turbine up to a maximum of 40m from ground to tip of blade, are, in principle, supported throughout Central Lincolnshire (i.e., the whole of Central Lincolnshire is identified as a broad area potentially suitable for such a single turbine), subject to meeting the above criteria (i)-(iii) and the requirements of national planning policy. Under this paragraph, no dwelling or other operation (e.g., a farm or a business) may have more than one turbine at any one time in the curtilage of that dwelling or other operation.

Proposals for medium (over 40m from ground to tip of blade) to large-scale wind turbines (including groups of turbines) will, in principle, be supported only where they are located within an area identified as a 'Broad Area Suitable for Larger Scale Wind Energy Turbines' as identified on the Policies Map and (indicatively) on Map 2. Such proposals will be tested against criteria (i)-(iii) and the requirements of national planning policy.

Medium to large-scale wind turbines must not be within 2km of a settlement boundary of a settlement identified in the Settlement Hierarchy. However, where a proposal is within 2km of any residential property, the following matters will need careful consideration as to the potential harm arising:

- *Noise*
- *Flicker*
- *Overbearing nature of the turbines (established by visual effects from within commonly used habitable rooms)*
- *Any other amenity which is presently enjoyed by the occupier.*

In this regard, no medium to large-scale wind turbine within 700m of a residential property is anticipated to be supported, and proposals between 700-2,000m will need clear evidence of no significant harm arising.

For the avoidance of doubt, any medium to large-scale wind turbine proposals outside of the identified Broad Area Suitable for Larger Scale Wind Energy Turbines should be refused.

Decommissioning renewable energy infrastructure

Permitted proposals will be subject to a condition that will require the submission of an End of Life Removal Scheme within one year of the facility becoming non-operational, and the implementation of such a scheme within one year of the scheme being approved. Such a scheme should demonstrate how any biodiversity net gain that has arisen on the site will be protected or enhanced further, and how the materials to be removed would, to a practical degree, be re-used or recycled."

Policy S16: Wider Energy Infrastructure states that:

"The Joint Committee is committed to supporting the transition to net zero carbon future and, in doing so, recognises and supports, in principle, the need for significant investment in new and upgraded energy infrastructure.

Where planning permission is needed from a Central Lincolnshire authority, support will be given to proposals which are necessary for, or form part of, the transition to a net zero carbon sub-region, which could include: energy storage facilities (such as battery storage or thermal storage); and upgraded or new electricity facilities (such as transmission facilities, sub-stations or other electricity infrastructure.

However, any such proposals should take all reasonable opportunities to mitigate any harm arising from such proposals, and take care to select not only appropriate locations for such facilities, but also design solutions (see Policy S53) which minimises harm arising."

Policy S53 *"Design and Amenity"* states that:

"All development, including extensions and alterations to existing buildings, must achieve high-quality sustainable design that contributes positively to local character, landscape, and townscape, and supports diversity, equality, and access for all.

Good design will be at the centre of every development proposal, and this will be required to be demonstrated through evidence supporting planning applications to a degree proportionate to the proposal.

Design Codes may be produced for parts of Central Lincolnshire or in support of specific developments. The approach taken in these Design Codes should be informed by the National Model Design Code, and where these codes have been adopted, developments will be expected to adhere to the Code.

Proposals for new buildings should incorporate the Design Principles for Efficient Buildings in Policy S6 at the centre of design.

All development proposals will be assessed against, and will be expected to meet, the following relevant design and amenity criteria. All development proposals will:

1. Context

a) Be based on a sound understanding of the context, integrating into the surroundings and responding to local history, culture, and heritage;

b) Relate well to the site, its local and wider context, and existing characteristics, including the retention of existing natural and historic features wherever possible and including appropriate landscape and boundary treatments to ensure that the development can be satisfactorily assimilated into the surrounding area;

c) Protect any important local views into, out of, or through the site;

2. Identity

a) Contribute positively to the sense of place, reflecting and enhancing existing character and distinctiveness;

b) Reflect or improve on the original architectural style of the local surroundings, or embrace opportunities for innovative design and new technologies which sympathetically complement or contrast with the local architectural style;

c) Use appropriate, high-quality materials which reinforce or enhance local distinctiveness;

d) Not result in the visual or physical coalescence with any neighbouring settlement nor ribbon development;

3. Built Form

a) Make effective and efficient use of land that contributes to the achievement of compact, walkable neighbourhoods;

b) Be appropriate for its context and its future use in terms of its building types, street layout, development block type and size, siting, height, scale, massing, form, rhythm, plot widths, gaps between buildings, and the ratio of developed to undeveloped space both within a plot and within a scheme;

c) Achieve a density not only appropriate for its context but also taking into account its accessibility;

d) Have a layout and form that delivers efficient and adaptable homes in accordance with Policy S6 and Policy S20.

4. Movement

a) Form part of a well-designed and connected travel network with consideration for all modes of transport offering genuine choices for non-car travel and prioritizing active travel and where relevant demonstrate this through evidence clearly showing connectivity for all modes and a hierarchy of routes (also see Policy S47 and Policy S48);

b) Maximize pedestrian and cycle permeability and avoid barriers to movement through careful consideration of street layouts and access routes both within the site and in the wider context contributing to the delivery of walkable and cyclable neighbourhoods in accordance with Policy S48;

c) Ensure areas are accessible, safe, and legible for all including people with physical accessibility difficulties;

d) Deliver well-considered parking, including suitable electric vehicle charging points, with appropriate landscaping provided in accordance with the parking standards set out in Policy NS18 and Policy S49;

e) Deliver suitable access solutions for servicing and utilities;

5. Nature

a) Incorporate and retain as far as possible existing natural features including hedgerows, trees, and water bodies particularly where these features offer a valuable habitat to support biodiversity, aligned with policies in the Natural Environment chapter of the Local Plan;

b) Incorporate appropriate landscape and boundary treatments to ensure that the development can be satisfactorily assimilated into the surrounding area, maximizing opportunities to deliver diverse ecosystems and biodiverse habitats, strengthening wildlife corridors and green infrastructure networks, and helping to achieve wider goals for biodiversity net gain, climate change mitigation and adaptation and water management;

6. Public Spaces

a) Ensure public spaces are accessible to all, are safe and secure and will be easy to maintain with clear definition of public and private spaces;

b) Form part of a hierarchy of spaces where relevant to offer a range of spaces available for the community and to support a variety of activities and encourage social interaction;

c) Be carefully planned and integrated into the wider community to ensure spaces feel safe and are safe through natural surveillance, being flanked by active uses and by promoting activity within the space;

d) Maximize opportunities for delivering additional trees and biodiversity gains through the creation of new habitats and the strengthening or extending wildlife corridors and the green infrastructure network in accordance with policies in the Natural Environment chapter;

7. Uses

a) Create or contribute to a variety of complementary uses that meet the needs of the community;

b) Be compatible with neighbouring land uses and not result in likely conflict with existing uses unless it can be satisfactorily demonstrated that both the ongoing use of the neighbouring site will not be compromised, and that the amenity of occupiers of the new development will be satisfactory with the ongoing normal use of the neighbouring site;

c) Not result in adverse noise and vibration taking into account surrounding uses nor result in adverse impacts upon air quality from Odour, fumes, smoke, dust and other sources;

8. Homes and Buildings

a) Provide homes with good quality internal environments with adequate space for users and good access to private, shared or public spaces;

b) Be adaptable and resilient to climate change and be compatible with achieving a net-zero carbon Central Lincolnshire as required by Policies S6, S7, and S8;

c) Be capable of adapting to changing needs of future occupants and be cost-effective to run by achieving the standards set out in Policy S20;

d) Not result in harm to people's amenity either within the proposed development or neighbouring it through overlooking, overshadowing, loss of light or increase in artificial light or glare;

e) Provide adequate storage, waste, servicing and utilities for the proposed use;

9. Resources

a) Minimize the need for resources both in construction and operation of buildings and be easily adaptable to avoid unnecessary waste in accordance with Policies S10 and S11;

b) Use high-quality materials which are not only suitable for the context but that are durable and resilient to impacts of climate change in accordance with the requirements of Policy S20;

10. Lifespan

a) Use high-quality materials which are durable and ensure buildings and spaces are adaptive; and

b) Encourage the creation of a sense of ownership for users and the wider community with a clear strategy for ongoing management and stewardship.

Development proposals will be expected to satisfy requirements of any adopted local design guide or design code where relevant to the proposal."

Bassetlaw District Council (2011) Local Development Framework, Publication Core Strategy and Development Management Policies

The Core Strategy for the Bassetlaw District sets out the overarching vision for the area up until 2026, including the policy approach to deliver this.

Policy DM10 "*Renewable and Low Carbon Energy*" is related to the Proposed Development and states:

"The Council will be supportive of proposals that seek to utilize renewable and low-carbon energy to minimize CO2 emissions. Proposals for renewable and low-carbon energy infrastructure will need to demonstrate that they:

- *Are compatible with policies to safeguard the built and natural environment, including heritage assets and their setting;*
- *Will not lead to the loss of or damage to high-grade agricultural land;*
- *Are compatible with tourism and recreational facilities;*
- *Will not result in unacceptable impacts in terms of visual appearance, landscape character, noise, shadow-flicker, watercourse engineering and hydrological impacts, pollution, traffic generation, or loss of features of recognized importance for biodiversity;*
- *Will not result in an unacceptable cumulative impact in relation to the factors above.*

Large-scale renewable and low-carbon energy proposals must provide full details of arrangements for decommissioning and reinstatement of the site if/when it ceases to operate.

B. District Heating and Co-location

Proposals for new development in District Heating Opportunity Areas (as identified on the Energy Opportunities Diagram) will, where the scale of the proposal permits, be expected to demonstrate consideration of District Heating as a means of achieving carbon compliance. District Heating opportunities include those supplied by heat from waste management sites, power stations, coal mine methane facilities or new standalone infrastructure. Applicants will be expected to engage with the Council at pre-application stage to assess the feasibility of achieving this objective. Where District Heating Networks are established, all subsequent new development close enough to connect to such a network will be expected to do so where there are no barriers to this connection. Proposals for heat-producing development will be expected to demonstrate consideration of the feasibility of utilizing its waste heat for heat-consuming development. Support will be given to proposals that will ensure the co-location of compatible heat-producing and heat-consuming development.

C. Major Development

Major development proposals will be expected to deliver specific low-carbon and renewable energy infrastructure in line with assessments of feasibility and overall viability.

D. Community Energy Schemes

Support will be given to community-led energy schemes in line with the Council's Renewable and Low Carbon Energy Study (or subsequent replacement), on exception sites, if necessary, where strong local support is demonstrated."

Draft Bassetlaw Local Plan (2023) 2020-2038: Main Modifications Version, August 2023

This Local Plan sets out Bassetlaw District's planning and policy framework, development strategy and site allocations to inform effective delivery of the overall vision up until 2038.

Policies set out in the Local Plan relate to the Proposed Development.

Policy ST51 "*Renewable Energy Generation*" states that:

""Development that generates, shares, transmits and/or stores zero carbon and/or low carbon renewable energy including community energy schemes will be supported subject to the satisfactory resolution of all relevant site specific and cumulative impacts upon:

a) *Location, setting and position in the wider landscape, resulting from its siting and scale;*
b) *Natural and heritage assets and their settings;*
c) *Air and water quality;*
d) *Hydrology and hydrogeology;*
e) *The best and most versatile agricultural land;*
f) *Existing highway capacity and highway safety;*
g) *Noise, light, glare, smell, dust, emissions or flicker;*
h) *Aviation and radar; and*
i) *Recreation and local amenity.*

Proposals must take into account operational and approved developments, as well as any proposed intensification to operational or approved proposals. Proposals involving one or more wind turbines will be supported where:

a) *the site is located within an area defined as being suitable for wind energy in a made neighbourhood plan or development plan document; and*
b) *following consultation, it can be satisfactorily demonstrated that all potential adverse planning impacts identified by affected local communities have been fully addressed, including cumulative impacts identified in Part 1 above.*

All renewable energy development will be expected to provide details of the expected power generation based upon expected yield or local self-consumption to enable effective monitoring of the district's contribution to the national zero carbon targets.

A decommissioning programme applied by a Condition to any planning permission granted will be required to demonstrate that the site can be returned to an acceptable state, three years after cessation of operations."

National Guidance

Planning Practice Guidance, Air Quality (2019)

This document provides information on how the planning process can take into account the influence of new proposals upon air quality. This guidance details which air quality issues planning can address, assessment parameters, and answers further key questions surrounding the production of air quality reports.

Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) Guidance: Land-Use Planning & Development Control: Planning for Air Quality (2017)

The EPUK and IAQM have jointly produced guidance to help ensure that air quality considerations are included within the planning and development control process across the UK. This document is aimed at local authorities as well as developers. The guidance outlined here is particularly relevant for helping to assess changed in air quality exposure resulting from new mixed-use developments.

IAQM Guidance on the Assessment of Dust from Demolition and Construction (2024)

This guidance document is aimed at general practitioners and developers, and details how to undertake an assessment of impacts from construction practices from a proposed development. Regarding air quality, the guidance focuses on dust emissions and quantifies its risk, to then formulate the level and type of mitigation measures required.

Defra Local Air Quality Management Technical Guidance (TG(22)) (2022)

This is a technical guidance document to aid local authorities to carry out their statutory duties under the Environment Act 1995 (as amended) in regard to air quality. In summary therefore, this guidance helps authorities to improve air quality through the effective declaration of air quality non-compliance and subsequent action plans to address these localised issues.

Appendix 14-2: Construction Dust Assessment Procedure

The criteria developed by IAQM[Error! Bookmark not defined.] divide the activities on construction sites into four types to reflect their different potential impacts. These are:

- Demolition[21];
- earthworks;
- construction; and
- trackout.

The assessment procedure includes the four steps summarised below:

STEP 1: Screen the Need for a Detailed Assessment

An assessment is required where there is a human receptor within 250 m of the boundary of our Site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from our Site entrance(s), or where there is an ecological receptor within 50 m of the boundary of our Site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from our Site entrance(s).

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is negligible and that any effects will be 'not significant.' No mitigation measures beyond those required by legislation will be required.

STEP 2: Assess the Risk of Dust Impacts

A site is allocated to a risk category based on two factors:

- the scale and nature of the works, which determines the potential dust emission magnitude (Step 2A); and
- the sensitivity of the area to dust effects (Step 2B).

These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to our Site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

[21] Demolition is not relevant to our Project but has been included for consistency in the methodology used by the IAQM.

Step 2A – Define the Potential Dust Emission Magnitude

Dust emission magnitude is defined as either 'Small,' 'Medium,' or 'Large.' The IAQM guidance explains that this classification should be based on professional judgement but provides the examples in **Table 14-2-1**.

Table 14-2-1: Examples of How the Dust Emission Magnitude Class May be Defined

Class	Examples
Demolition	
Large	Total building volume >75,000 m3, potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >12 m above ground level
Medium	Total building volume 12,000 m3 – 75,000 m3, potentially dusty construction material, demolition activities 6-12 m above ground level
Small	Total building volume <12,000 m3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
Earthworks	
Large	Total site area >110,000 m2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height
Medium	Total site area 18,000 m2 – 110,000 m2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3 m – 6 m in height
Small	Total site area <18,000 m2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height
Construction	
Large	Total building volume >75,000 m3, piling, on site concrete batching; sandblasting
Medium	Total building volume 12,000 m3 – 75,000 m3, potentially dusty construction material (e.g. concrete), piling, on site concrete batching

Small	Total building volume <12,000 m3, construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout	
Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m
Medium	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m
Small	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

Step 2B – Define the Sensitivity of the Area

The sensitivity of the area is defined taking account of a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM_{10}, the local background concentration; and
- site-specific factors, such as whether there are natural shelters to reduce the risk of wind-blown dust.

The first requirement is to determine the specific sensitivities of local receptors. The IAQM guidance recommends that this should be based on professional judgment, taking account of the principles in **Table 14-2-2**. These receptor sensitivities are then used in the matrices set out in **Table 14-2-3**, **Table 14-2-4** and **Table 14-2-5** to determine the sensitivity of the area. Finally, the sensitivity of the area is considered in relation to any other site-specific factors, such as the presence of natural shelters etc., and any required adjustments to the defined sensitivities are made.

Step 2C – Define the Risk of Impacts

The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The IAQM guidance provides the matrix in **Table 14-2-6** as a method of assigning the level of risk for each activity.

STEP 3: Determine Site-specific Mitigation Requirements

The IAQM guidance provides a suite of recommended and desirable mitigation measures which are organised according to whether the outcome of Step 2 indicates a low, medium, or high risk.

STEP 4: Determine Significant Effects

The IAQM guidance does not provide a method for assessing the significance of effects before mitigation, and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant'.

The IAQM guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be 'not significant'.

Table 14-2-2: Principles to be Used When Defining Receptor Sensitivities

Class	Principles	Examples
Sensitivities of People to Dust Soiling Effects		
High	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	dwellings, museum and other culturally important collections, medium and long term car parks and car showrooms
Medium	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 would not reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land	parks and places of work

Low	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	playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads
Sensitivities of People to the Health Effects of PM_{10}		
High	locations where members of the public may be exposed for eight hours or more in a day	residential properties, hospitals, schools and residential care homes
Medium	locations where the people exposed are workers, and where individuals may be exposed for eight hours or more in a day.	may include office and shop workers, but will generally not include workers occupationally exposed to PM10
Low	locations where human exposure is transient	public footpaths, playing fields, parks and shopping streets
Sensitivities of Receptors to Ecological Effects		
High	locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species	Special Areas of Conservation with dust sensitive features
Medium	locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or locations with a national designation where the features may be affected by dust deposition	Sites of Special Scientific Interest with dust sensitive features

Low	locations with a local designation where the features may be affected by dust deposition	Local Nature Reserves with dust sensitive features

Table 14-2-3: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
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

Table 14-2-4: Sensitivity of the Area to Human Health Effects

Receptor Sensitivity	Annual Mean PM_{10}	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low

	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m^3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	>32 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	>32 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table 14-2-5: Sensitivity of the Area to Ecological Effects

Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Table 14-2-6: Defining the Risk of Dust Impacts

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			

High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Risk	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Risk	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Risk	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Risk	Low Risk	Low Risk	Negligible

Appendix 14-3: EPUK & IAQM Planning for Air Quality Guidance

The guidance issued by EPUK and IAQM[17] is comprehensive in its explanation of the place of air quality in the planning regime, including the National Policy Statements for Energy Infrastructure. Key sections of the guidance are set out below.

Air Quality as a Material Consideration

"Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan, will depend on such factors as:

- *the severity of the impacts on air quality;*
- *the air quality in the area surrounding the proposed development;*
- *the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and*
- *the positive benefits provided through other material considerations".*

Recommended Best Practice

The guidance goes into detail on how all development proposals can and should adopt good design principles that reduce emissions and contribute to better air quality management. It states:

"The basic concept is that good practice to reduce emissions and exposure is incorporated into all developments at the outset, at a scale commensurate with the emissions".

The guidance sets out a number of good practice principles that should be applied to all developments that:

- include 10 or more dwellings;
- where the number of dwellings is not known, residential development is carried out on a site of more than 0.5 ha;
- provide more than 1,000 m^2 of commercial floorspace;
- are carried out on land of 1 ha or more.

The good practice principles are that:

- New developments should not contravene the Council's Air Quality Action Plan, or render any of the measures unworkable;
- Wherever possible, new developments should not create a new "street canyon", as this inhibits pollution dispersion;

- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads;
- The provision of at least 1 Electric Vehicle (EV) “rapid charge” point per 10 residential dwellings and/or 1000 m^2 of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made available;
- Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety;
- All gas-fired boilers to meet a minimum standard of <40 $mgNO_x/kWh$;
- Where emissions are likely to impact on an AQMA, all gas-fired CHP plant to meet a minimum emissions standard of:
  - Spark ignition engine: 250 $mgNO_x/Nm^3$;
  - Compression ignition engine: 400 $mgNO_x/Nm^3$;
  - Gas turbine: 50 $mgNO_x/Nm^3$.
- A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of 275 $mgNO_x/Nm^3$ and 25 $mgPM/Nm^3$.

The guidance also outlines that offsetting emissions might be used as a mitigation measure for a proposed development. However, it states that:

“It is important that obligations to include offsetting are proportional to the nature and scale of development proposed and the level of concern about air quality; such offsetting can be based on a quantification of the emissions associated with the development. These emissions can be assigned a value, based on the “damage cost approach” used by Defra, and then applied as an indicator of the level of offsetting required, or as a financial obligation on the developer. Unless some form of benchmarking is applied, it is impractical to include building emissions in this approach, but if the boiler and CHP emissions are consistent with the standards as described above then this is not essential”.

The guidance offers a widely used approach for quantifying costs associated with pollutant emissions from transport. It also outlines the following typical measures that may be considered to offset emissions, stating that measures to offset emissions may also be applied as post assessment mitigation:

- Support and promotion of car clubs;
- Contributions to low emission vehicle refuelling infrastructure;
- Provision of incentives for the uptake of low emission vehicles;

- Financial support to low emission public transport options; and
- Improvements to cycling and walking infrastructures.

Screening

Impacts of the Local Area on our Project

"There may be a requirement to carry out an air quality assessment for the impacts of the local area's emissions on the proposed development itself, to assess the exposure that residents or users might experience. This will need to be a matter of judgement and should take into account:

- *the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;*
- *the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;*
- *the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular nitrogen dioxide), that would cause unacceptably high exposure for users of the new development; and*
- *the presence of a source of odour and/or dust that may affect amenity for future occupants of the development".*

Impacts of our Project on the Local Area

The guidance sets out two stages of screening criteria that can be used to identify whether a detailed air quality assessment is required, in terms of the impact of our Project on the local area. The first stage is that you should proceed to the second stage if any of the following apply:

- 10 or more residential units or a site area of more than 0.5 ha residential use; and/or
- more than 1,000 m^2 of floor space for all other uses or a site area greater than 1 ha.

Coupled with any of the following:

- the development has more than 10 parking spaces; and/or
- the development will have a centralised energy facility or other centralised combustion process.

If the above do not apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area. If they do apply then you proceed to stage 2, which sets out indicative criteria for requiring an air quality assessment. The stage 2 criteria relating to vehicle emissions are set out below:

- the development will lead to a change in LDV flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;

- the development will lead to a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- the development will lead to a realigning of roads (i.e. changing the proximity of receptors to traffic lanes) where the change is 5m or more and the road is within an AQMA;
- the development will introduce a new junction or remove an existing junction near to relevant receptors, and the junction will cause traffic to significantly change vehicle acceleration/deceleration, e.g. traffic lights or roundabouts;
- the development will introduce or change a bus station where bus flows will change by more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; and
- the development will have an underground car park with more than 100 movements per day (total in and out) with an extraction system that exhausts within 20 m of a relevant receptor.

The criteria are more stringent where the traffic impacts may arise on roads where concentrations are close to the objective. The presence of an AQMA is taken to indicate the possibility of being close to the objective, but where whole authority AQMAs are present and it is known that the affected roads have concentrations below 90% of the objective, the less stringent criteria are likely to be more appropriate.

On combustion processes (including standby emergency generators and shipping) where there is a risk of impacts at relevant receptors, the guidance states that:

"Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. As a guide, the 5 mg/s criterion equates to a 450 kW ultra-low NOx gas boiler or a 30kW CHP unit operating at <95mg/Nm^3.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable".

Should none of the above apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area, provided that professional judgement is applied; the guidance importantly states the following:

"The criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive 'trigger' for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality".

Even if a development cannot be screened out, the guidance is clear that a detailed assessment is not necessarily required:

"The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. The principle underlying this guidance is that any assessment should provide enough evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality. A Simple Assessment will be appropriate, if it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer".

The guidance also outlines what the content of the air quality assessment should include, and this has been adhered to in the production of this chapter.

Assessment of Significance

There is no official guidance in the UK in relation to development control on how to describe the nature of air quality impacts, nor how to assess their significance. The approach within the EPUK/IAQM guidance has, therefore, been used in this assessment. This approach involves a two stage process:

- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
- a judgement on the overall significance of the effects of any impacts.

The guidance recommends that the assessment of significance should be based on professional judgement, with the overall air quality impact of the development described as either 'significant' or 'not significant'. In drawing this conclusion, the following factors should be taken into account:

- the existing and future air quality in the absence of the development;
- the extent of current and future population exposure to the impacts;
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts;

- the potential for cumulative impacts and, in such circumstances, several impacts that are described as ‘slight’ individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a ‘moderate’ or ‘substantial’ impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health; and
- the judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant? In the majority of cases, the impacts from an individual development will be insufficiently large to result in measurable changes in health outcomes that could be regarded as significant by health care professionals.

The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the residents of any new development where the air quality is such that an air quality objective is not met will be judged as significant. For people working at new developments in this situation, the same will not be true as occupational exposure standards are different, although any assessment may wish to draw attention to the undesirability of the exposure.

A judgement of the significance should be made by a competent professional who is suitably qualified. A summary of the professional experience of the staff contributing to this assessment is provided in **Appendix 1-1**.

one earth

solar farm